

REPORT NUMBER KAR22001-02

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**GENERAL MOTORS CORPORATION
2002 CHEVROLET BLAZER LS ZR2
SUV**

NHTSA NUMBER: M20105

**PREPARED BY:
KARCO ENGINEERING
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



DECEMBER 29, 2001

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NPS-10
400 SEVENTH STREET, SW, ROOM 5313
WASHINGTON, D.C. 20590**

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-97-D-02007.

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Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

1. Report No. KAR22001-02	2. Government Accession No.	3. Recipients Catalog No.																										
4. Title and Subtitle Final Report of New Car Assessment Program Testing of a 2002 Chevrolet Blazer LS ZR2 SUV NHTSA No. M20105		5. Report Date December 29, 2001																										
		6. Performing Organization Code KAR																										
7. Author(s) Mr. James E Gorth, Project Engineer, Karco Mr. Frank Richardson, Program Manager, Karco		8. Performing Organization Report No. KAR22001-02																										
9. Performing Organization Name and Address KARCO Engineering 9270 Holly Road Adelanto, CA 92301		10. Work Unit No.																										
		11. Contract or Grant No. DTNH22-97-D-02007																										
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Safety Performance Standards Office of Crashworthiness Standards Mail Code: NPS-10 400 Seventh Street, SW, Room 5313 Washington, D.C. 20590		13. Type of Report and Period Covered Final Test Report Option Year 4																										
		14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS																										
15. Supplementary Notes																												
16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2002 Chevrolet Blazer LS ZR2 SUV at KARCO Engineering on 12/13/01. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.85 km/h. The ambient temperature at the barrier face at the time of impact is 11.7 degrees Celcius. The vehicle's maximum post test static crush is 645 mm at the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;">Measurement Description</th> <th style="width: 15%;">Units</th> <th style="width: 15%;">Threshold</th> <th style="width: 20%;">Driver ATD</th> <th style="width: 15%;">Passenger ATD</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>N/A</td> <td>1000</td> <td>777.1</td> <td>459.9</td> </tr> <tr> <td>Max. Thorax Accel. (3 msec Clip)</td> <td>G's</td> <td>60</td> <td>66.0</td> <td>49.3</td> </tr> <tr> <td>Left Femur force</td> <td>Newtons</td> <td>10009</td> <td>-6127.1</td> <td>-5800.6</td> </tr> <tr> <td>Right Femur Force</td> <td>Newtons</td> <td>10009</td> <td>-6628.6</td> <td>-4631.8</td> </tr> </tbody> </table>				Measurement Description	Units	Threshold	Driver ATD	Passenger ATD	Head Injury Criteria (HIC)	N/A	1000	777.1	459.9	Max. Thorax Accel. (3 msec Clip)	G's	60	66.0	49.3	Left Femur force	Newtons	10009	-6127.1	-5800.6	Right Femur Force	Newtons	10009	-6628.6	-4631.8
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19. Security Classification(this report) Unclassified	20. Security Classification(this page) Unclassified	21. No. of Pages 368	22. Price																									

Form DOT F1700.7 (8-72)

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SECTION 1

PURPOSE AND SUMMARY OF TEST M20105

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-97-D-02007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48.3 km/h) requirements.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Test procedure.

1.2 SUMMARY

A load cell barrier consisting of 24 load cells was impacted by a 2002 Chevrolet Blazer LS ZR2 SUV at a velocity of 55.85 km/h. The test was performed at Karco Engineering on December 13, 2001. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

One real-time and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with nine accelerometer array head, chest and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, left and right knee sliders, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 35) and the right-front passenger (position 2) ATD (Serial No. 34) were calibrated two tests previous to this test.

The one hundred thirteen (113) channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle and dummy response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the Instrumentation Data Channel assignments. Appendix E contains the Dummy Calibration data and Appendix F contains the owner's manual instructions for the occupant and restraint systems.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the vehicle was 645 mm and both the driver and the passenger side doors remained closed during the impact event and were jammed after the impact and required the aid of tools to open.

Weight of the vehicle as tested was 2144kg.

The driver's visible contact points were as follows. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, and both knees contacted the knee bolster.

The passenger's visible contact points were as follows. The passenger ATD head contacted the airbag and headrest. The chest and abdomen contacted the airbag. Both knees contacted the glove box.

The driver and passenger were both equipped with Hybrid III 50th percentile dummy's nine accelerometer array head (NAAH) with redundant head C.G. accelerometers.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC	Clip (g)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)
Driver	777.1	66.0	-39.1	-6127.1	-6628.6	101.2
Passenger	459.9	49.3	-27.7	-5800.6	-4631.8	223.3

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.85
Test Weight	kg	2144
Impact Angle	degrees	0
Average Rebound	mm	634
Maximum Static Crush	mm	645

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Jammed	Jammed
Rear Door Opening	N/A	N/A
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	50% Male Hybrid III / No. 35	50% Male Hybrid III / No. 34
Head Contact	Airbag/Headrest	Airbag/Headrest/Roof
Chest Contact	Airbag	Airbag
Abdomen Contact	None	Airbag
Left Knee Contact	Knee Bolster	Glove Box/Dash
Right Knee Contact	Knee Bolster	Glove Box

16mm MOVIE COVERAGE

High Speed	15
Real Time	1
Total	16

DATA CHANNELS

Driver ATD Sensors	48
Passenger ATD Sensors	48
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	24
Total	137

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

TEST VEHICLE INFORMATION

Make	Chevrolet
Model	Blazer LS ZR2
Body Style	SUV
NHTSA No.	M20105
VIN	1GNCT18W32K114673
Color	Pewter Metallic
Delivery Date	12/5/2001
Odometer Reading (mi.)	117
Dealer	Crest Chevrolet
Transmission	4-Speed Automatic
Final Drive	4WD
Type/No. Cylinders	V-6
Engine Displacement (L)	4.3
Engine Placement	Longitudinal
Driver Side Airbag	No

TEST VEHICLE OPTIONS

Driver Airbag	Yes
Passenger Airbag	Yes
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
AM/FM/Cassette	Yes
Anti-Theft System	Yes
Cruise Control	Yes
Bucket Seats	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corporation	GVWR (kg)	2268
Date of Manufacture	August-01	GAWR Front (kg)	1134
		GAWR Rear (kg)	1225

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	210	210
Cold Pressure (kPa)	210	210
Recommend Tire Size	P31x10.50R15	P31x10.50R15
Tire Size on Vehicle	P31x10.50R15	P31x10.50R15
Tire Manufacturer	B. F. Goodrich	B. F. Goodrich

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	2	0	4
Capacity Wt. (VCW) (kg)				349
Cargo Weight (RCLW) (kg)				99

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

TEST VEHICLE WEIGHTS

	Units	As Delivered (<i>UVW</i>)			As Tested (<i>ATW</i>)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	517	435		543	517	
Right	kg	475	470		517	567	
Ratio	%	52.3	47.7		49.4	50.6	
Totals	kg	992	904	1897	1060	1084	2144

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (<i>UVW</i>)	kg	1897
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (<i>RCLW</i>)	kg	99
Calculated Vehicle Target Weight (<i>TVTW</i>)	kg	2148

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	939	923	899	885	1218
As Tested	mm	930	905	882	860	1292

Vehicle Wheel base (mm): 2554

Weight of Ballast secured in cargo area (kg): 0

Vehicle Components Removed: _____

* Ballast weight does not include cameras, instrumentation, and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 71.9

Usable Capacity Figure Furnished by COTR (L): 69.3

Actual Test Volume with entire fuel System Filled (L): 66.9

Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.764

Kinematic Viscosity: as per ASTM Standard D484-71 ; Color: Red

Is Vehicle Fuel Pump Electric or Mechanical?: Electric

If electric, does pump operate with ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars: Driver side filler door, tank mounted at rear.

DATA SHEET NO. 3
POST IMPACT DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	55.85
Trap No. 1 Entry Distance	mm	< 1524	1524
Trap No. 1 Exit Distance	mm	< 1524	305
Trap No. 2 Velocity (Redundant)	km/h	55.51 to 57.12	55.89
Trap No. 2 Entry Distance	mm	< 1524	1524
Trap No. 2 Exit Distance	mm	< 1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4358	3900	-458
Center	mm	4498	3853	-645
Right Side	mm	4358	3865	-493

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	606
Center	mm	670
Right Side	mm	627
Average	mm	634

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

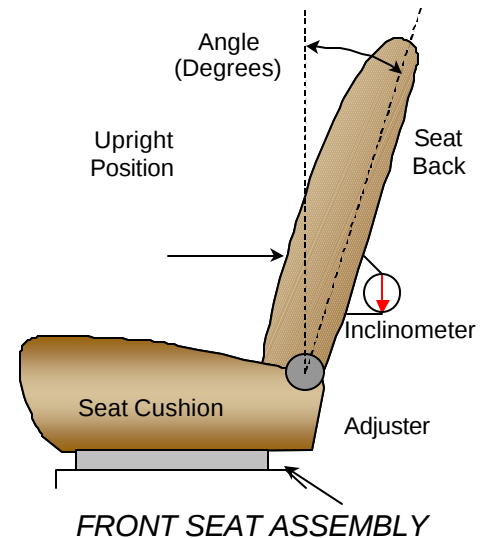
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 9 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.

Driver seat back angle: 23° with a seated dummy
Passenger seat back angle: 23° with a seated dummy



SEAT FORE/AFT POSITIONS

Driver seat is power and has a total travel of 195mm and passenger seat has 21 positions or detents. The first or forward most position is counted as number one (1). The fore/aft position is set aft of the middle position for both driver and passenger.

Driver seat fore/aft total travel: 195mm of total travel
Driver seat fore/aft position: 98mm aft of forward position
Passenger seat fore/aft total travel: 21 seating positions or detents
Passenger seat fore/aft position: 11th detent from forward most

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with fixed shoulder belt anchorages, no adjustments necessary.

DATA SHEET NO. 4...(CONTINUED)
TEST VEHICLE INFORMATION

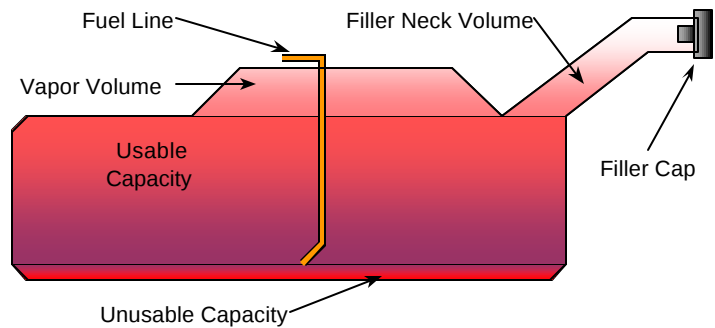
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

FUEL TANK CAPACITY DATA

The "Usable Capacity" of the standard equipment fuel tank is:	<u>71.9</u>	liters
The "Usable Capacity" of any optional equipment fuel tank is:	<u>69.3</u>	liters
"Usable Capacity" used for certification tests FMVSS 301 requirements:	<u>66.7 to 67.6</u>	liters
Actual amount of Stoddard solvent added to vehicle for certification test:	<u>66.9</u>	liters

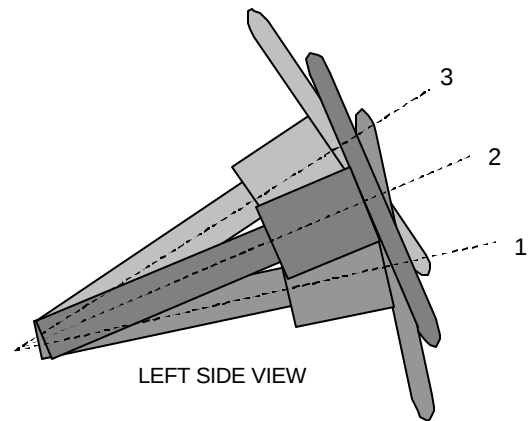
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat. Fuel lines run inside the right frame rail to the engine compartment.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured. The steering column has seven (7) positions or detents and is set in the fourth (4) detent as indicated by the diagram at right and the angle below.



STEERING COLUMN ASSEMBLY

Lowermost; position 1:	<u>52°</u>
Geometric center; position 2:	<u>69°*</u>
Uppermost position 3:	<u>77°</u>

*As per Manufacturer's data

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

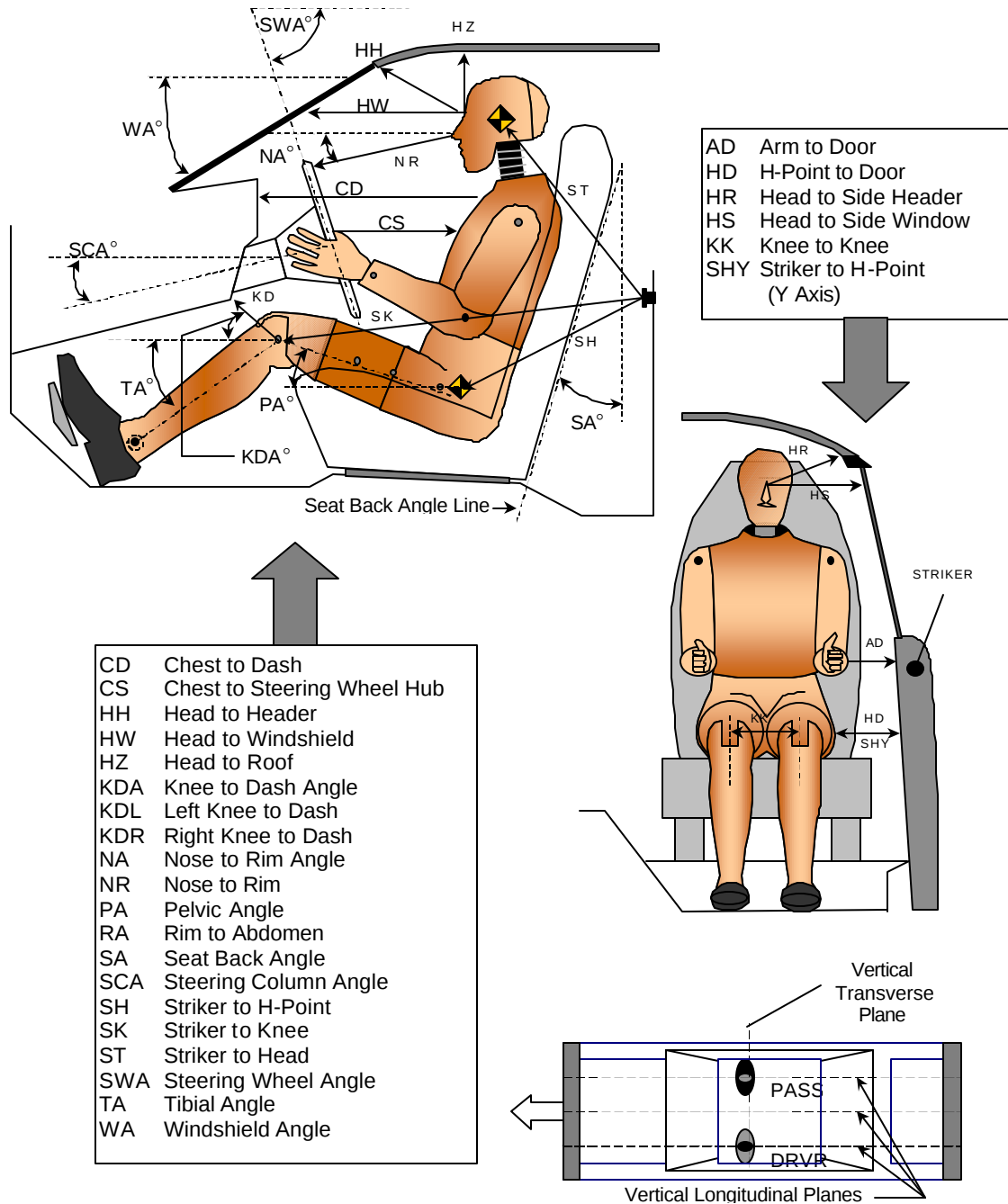
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		35		
SWA	Steering Wheel Angle		69		
SCA	Steering Column Angle		21		
SA	Seat Back Angle		23		23
HZ	Head to Roof (Z)	235	90	215	90
HH	Head to Header	447		417	
HW	Head to Windshield	650		605	
HR	Head to Side Header (Y)	268		280	
NR	Nose to Rim	364	9		
CD	Chest to Dash	532		504	
CS	Chest to Steering Hub	290			
RA	Rim to Abdomen	160			
KDL	Left Knee to Dash	185	50	155	
KDR	Right Knee to Dash	175		163	9
PA	Pelvic Angle		24		24
TA	Tibia Angle		40		49
KK	Knee to Knee (Y)	265		233	
ST	Striker to Head	679	3	715	6
SK	Striker to Knee	583	2	616	14
SH	Striker to H-Point	267		320	
SHY	Striker to H-Point (Y)	245		225	
HS	Head to Side Window	345		335	
HD	H-Point to Door (Y)	178		165	
AD	Arm to Door (Y)	119		33	

DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

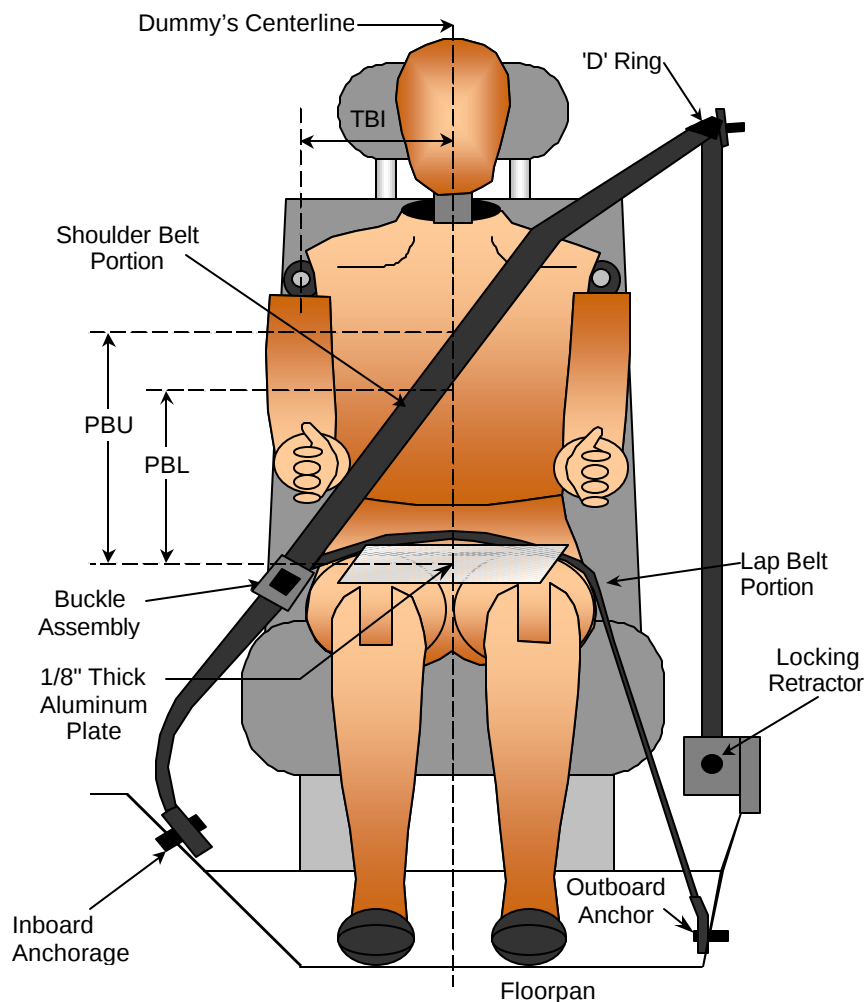


DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6 **SEATBELT POSITIONING DATA**

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	218	222
PBU - Top surface of reference to belt upper edge	mm	350	300
PBL - Top surface of reference to belt lower edge	mm	275	220
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

NHTSA No.: M20105

Test Program: 2002 NHTSA 35mph NCAP

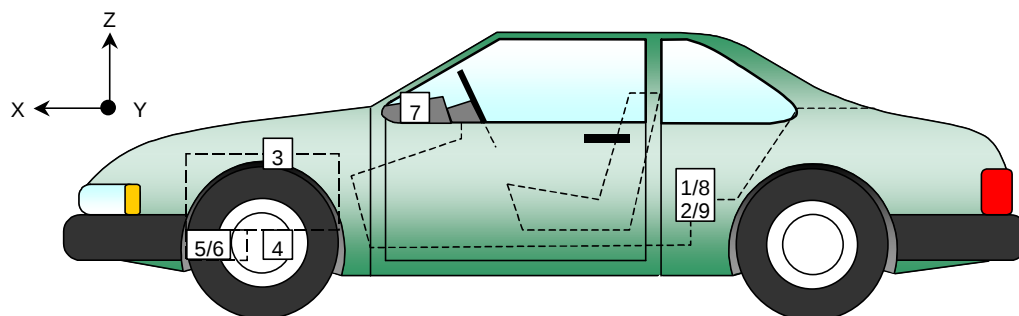
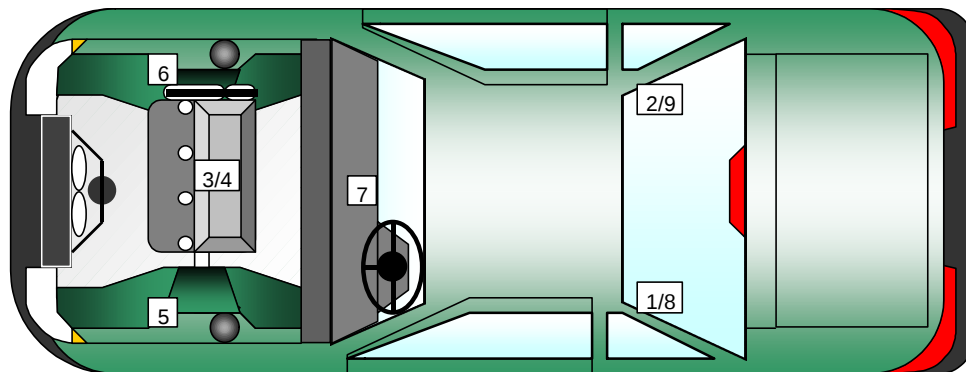
Test Date: 12/13/01

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	1960	-620	575	G's	6.7	139.6	-57.8	50.4
2	Right Rear X-Member	1960	620	575	G's	5.5	140.5	-47.1	52.3
3	Engine Top	3840	195	1070	G's	84.3	44.3	-132.8	32.8
4	Engine Bottom	3600	-130	330	G's	46.9	43.9	-86.3	35.7 *
5	Left Brake Caliper	3530	-790	420	G's	114.1	52.4	-157.6	33.9 *
6	Right Brake Caliper	3530	790	420	G's	69.9	51.2	-143.6	36.9 *
7	Instrument Panel	2870	0	1290	G's	79.5	50.1	-178.3	63.9
8	Left Rear X-Member (Z-Axis)	1960	580	575	G's	32.2	49.7	-12.9	86.6
9	Right Rear X-Member (Z-Axis)	1960	580	575	G's	14.0	16.8	-12.5	62.2

Reference Points X - From Rear Surface of Vehicle Y - Vehicle Centerline Z - Ground Plane

* Channels failed at 56.1 msec.



DATA SHEET NO. 8 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

NHTSA No.: M20105

Test Program: 2002 NHTSA 35mph NCAP

Test Date: 12/13/01

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	49.1	196.7	-71.6	78.5	9.2	278.7	-52.8	80.9
Head CG	Y	G's	8.0	195.5	-27.0	76.9	26.3	88.2	-7.3	280.1
Head CG	Z	G's	25.7	58.6	-7.5	103.3	26.5	61.6	-8.8	93.9
Head CG Resultant	N/A	G's	78.4	78.9			56.3	81.8		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	7.3	205.9	-71.3	75.8	4.0	299.4	-48.2	75.1
Chest CG	Y	G's	1.8	117.4	-8.7	60.0	8.5	81.1	-1.8	46.9
Chest CG	Z	G's	13.5	58.5	-11.6	103.6	18.6	67.2	-13.8	103.5
Chest CG Resultant	N/A	G's	71.7	75.8			49.8	74.8		

FEMUR PEAK FORCES AND KNEE DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	230.5	240.4	-6127.1	52.7	469.3	98.3	-5800.6	52.6
Right Femur	Z	Newtons	243.4	241.7	-6628.6	51.0	297.4	95.6	-4631.8	46.2
Left Knee Slider	Z	MM	0.69	47.1	-17.30	54.8	0.05	3.8	-0.50	76.8
Right Knee Slider	Z	MM	0.63	44.8	-8.25	54.0	0.17	297.8	-0.52	88.4

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	0.0	0.0	0.0	0.0	6975.4	63.1	-35.7	102.6*
Shoulder Belt Force	N/A	Newtons	5834.6	70.2	-4.1	13.0	3568.7	66.3	-15.1	164.2
Shoulder Belt Pullout	N/A	MM	101.2	81.4	-57.1	260.9	223.3	86.1	0.1	6.6

* Driver channel failed, no data

PRIMARY HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G	T ¹	T ²	HIC	Avg G	T ¹	T ²
Head CG Primary	777.1	54.2	55.0	90.9	459.9	43.9	59.1	95.0

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	66.0	74.8	77.8	49.3	74.2	77.2

DATA SHEET NO. 8...(continued)

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

NHTSA No.: M20105

Test Program: 2002 NHTSA 35mph NCAP

Test Date: 12/13/01

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	4.2	89.9	-73.7	52.1	2.8	117.7	-61.3	52.6
Pelvis	Y	G's	0.8	53.4	-9.6	43.0	6.1	69.7	-6.5	46.4
Pelvis	Z	G's	4.6	229.4	-24.6	60.5	5.8	285.9	-16.4	104.2

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	764.7	75.5	-527.0	204.5	612.4	77.0	-702.7	138.4
Neck Force	Y	Newtons	212.3	63.3	-275.9	114.1	450.1	122.0	-219.8	81.4
Neck Force	Z	Newtons	2044.3	70.9	-527.6	198.3	1752.3	62.2	-1521.2	289.7
Neck Moment	X	N•m	6.2	204.6	-25.5	88.8	36.0	130.6	-5.4	298.5
Neck Moment	Y	N•m	44.3	63.8	-54.2	206.4	53.2	146.1	-25.6	270.0
Neck Moment	Z	N•m	25.1	92.4	-16.2	142.0	19.8	153.1	-27.3	105.7

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	10.2	62.6	-34.4	44.1	35.7	50.7	-149.2	40.1
Left Foot Aft	Z	G's	7.0	233.2	-73.1	43.0	74.7	48.1	-140.3	39.4
Left Foot Fore	Z	G's	19.4	38.5	-114.4	42.8	192.0	48.7	-293.9	38.6
Right Foot Aft	X	G's	25.5	46.4	-176.4	41.9	11.0	94.2	-87.2	40.2
Right Foot Aft	Z	G's	56.3	48.1	-218.7	43.9	3.9	60.7	-107.0	40.5
Right Foot Fore	Z	G's	90.5	49.6	-234.4	38.4	37.4	38.9	-104.5	42.4

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Moment	X	N•m	17.2	42.0	-7.6	247.5	47.5	49.1	-43.6	42.9
Left Lower Moment	Y	N•m	26.3	55.7	-36.4	46.6	121.6	51.7	-81.8	39.4
Left Lower Force	Z	Newtons	282.8	63.9	-3495.7	43.2	182.9	292.4	-4907.2	42.2
Left Upper Moment	X	N•m	51.4	62.2	-21.3	79.5	11.2	78.4	-70.6	44.1
Left Upper Moment	Y	N•m	116.9	51.9	-109.0	44.7	13.1	277.2	-171.9	42.0
Right Lower Moment	X	N•m	42.8	44.5	-153.6	49.2	49.7	51.4	-50.3	45.8
Right Lower Moment	Y	N•m	114.5	49.5	-123.1	40.2	54.2	89.4	-57.5	43.8
Right Lower Force	Z	Newtons	206.6	181.8	-8322.3	44.6	230.1	181.7	-4052.2	41.0
Right Upper Moment	X	N•m	78.3	48.1	-21.3	64.1	27.4	38.2	-64.1	46.3
Right Upper Moment	Y	N•m	41.6	53.1	-209.4	42.8	14.6	144.5	-155.6	43.9

DATA SHEET NO. 8...(continued)Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUVNHTSA No.: M20105Test Program: 2002 NHTSA 35mph NCAPTest Date: 12/13/01**CHEST PEAK DISPLACEMENTS**

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	2.1	-39.1	75.5	0.3	3.7	-27.7	67.3

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	49.9	196.6	-70.4	78.0	9.4	279.9	-52.6	79.2
Head CG	Y	G's	8.4	196.9	-29.5	77.0	25.2	88.4	-7.6	280.3
Head CG	Z	G's	24.9	58.5	-7.6	102.8	25.2	61.3	-9.1	93.6
Head CG Resultant	N/A	G's	78.7	78.4			55.3	82.9		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	6.7	206.0	-71.6	75.8	4.0	299.9	-48.7	74.8
Chest CG	Y	G's	1.7	117.2	-8.1	59.9	9.6	81.0	-1.3	113.3
Chest CG	Z	G's	13.0	58.5	-11.3	103.0	16.9	67.1	-14.5	105.9
Chest CG Resultant	N/A	G's	71.9	75.8			50.3	74.5		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G	T ¹	T ²	HIC	Avg G	T ¹	T ²
Head CG Redundant	776.3	54.1	55.1	91.0	446.6	43.4	58.9	94.8

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	66.2	74.7	77.7	49.7	73.9	76.9

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	218	222
PBU -Top surface of reference to belt upper edge	mm	350	300
PBL - Top surface of reference to belt lower edge	mm	275	220
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	445	445
Shoulder belt length as measured on ATD	mm	865	865
Lap belt length as measured on ATD	mm	830	820
Remainder of belt on reel	mm	655	615
Total belt length for continuous webbing systems	mm	2795	2745

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	70.0	240.0
As determined electronically	mm	101.2	223.3

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between shoulder belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm	None	None

*Not used with shoulder belt pre-tensioner systems.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

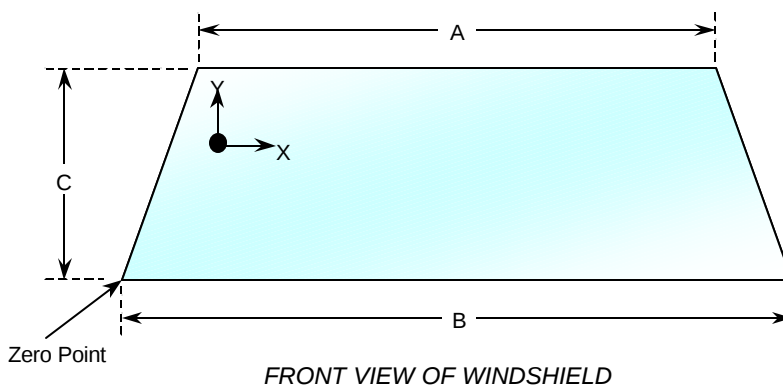
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

The standard requires that the posttest retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test (mm)	% of Retention
Left Side	2098	2098	100
Right Side	2098	2098	100
Total	4196	4196	100



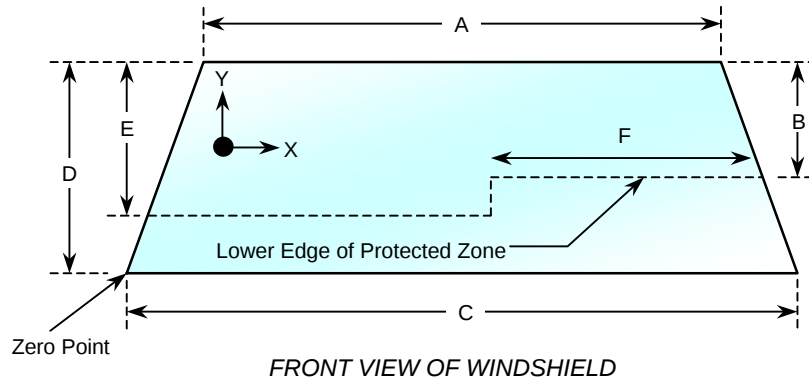
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1239	17
B	mm	1619	N/A
C	mm	669	32

DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1239
B	mm	305
C	mm	1619
D	mm	669
E	mm	355
F	mm	488

A OF PROTECTED ZONE FAILURES

- A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

DATA SHEET NO. 12
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV NHTSA No.: M20105
Test Program: 2002 NHTSA 35mph NCAP Test Date: 12/13/01

Test Time: 12:40 P.M. Temperature at Time of Impact 12.2Deg. C

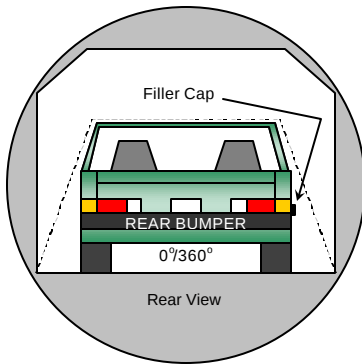
STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Location Details: No leakage occurred

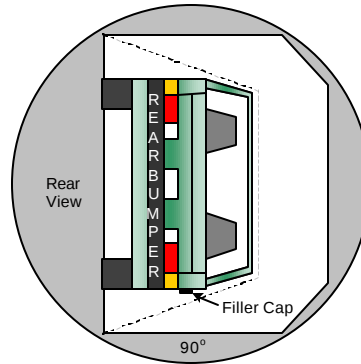
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

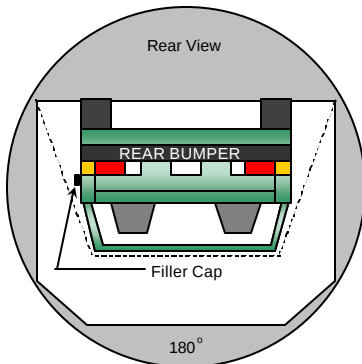
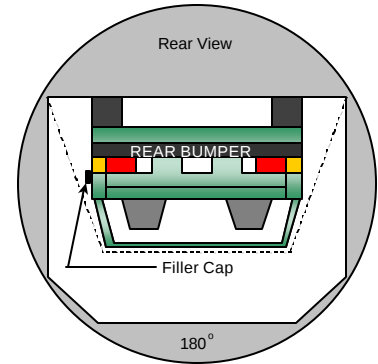
NHTSA No.: M20105
 Test Date: 12/13/01



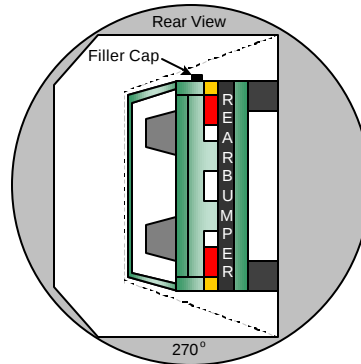
0° to 90°



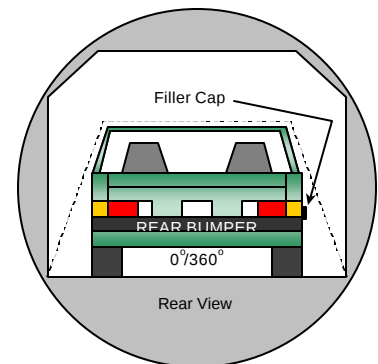
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. No solvent leakage occurred during rollover.

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	81	300	0.0
90° to 180°	81	300	0
180° to 270°	80	300	0
270° to 360°	78	300	0

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

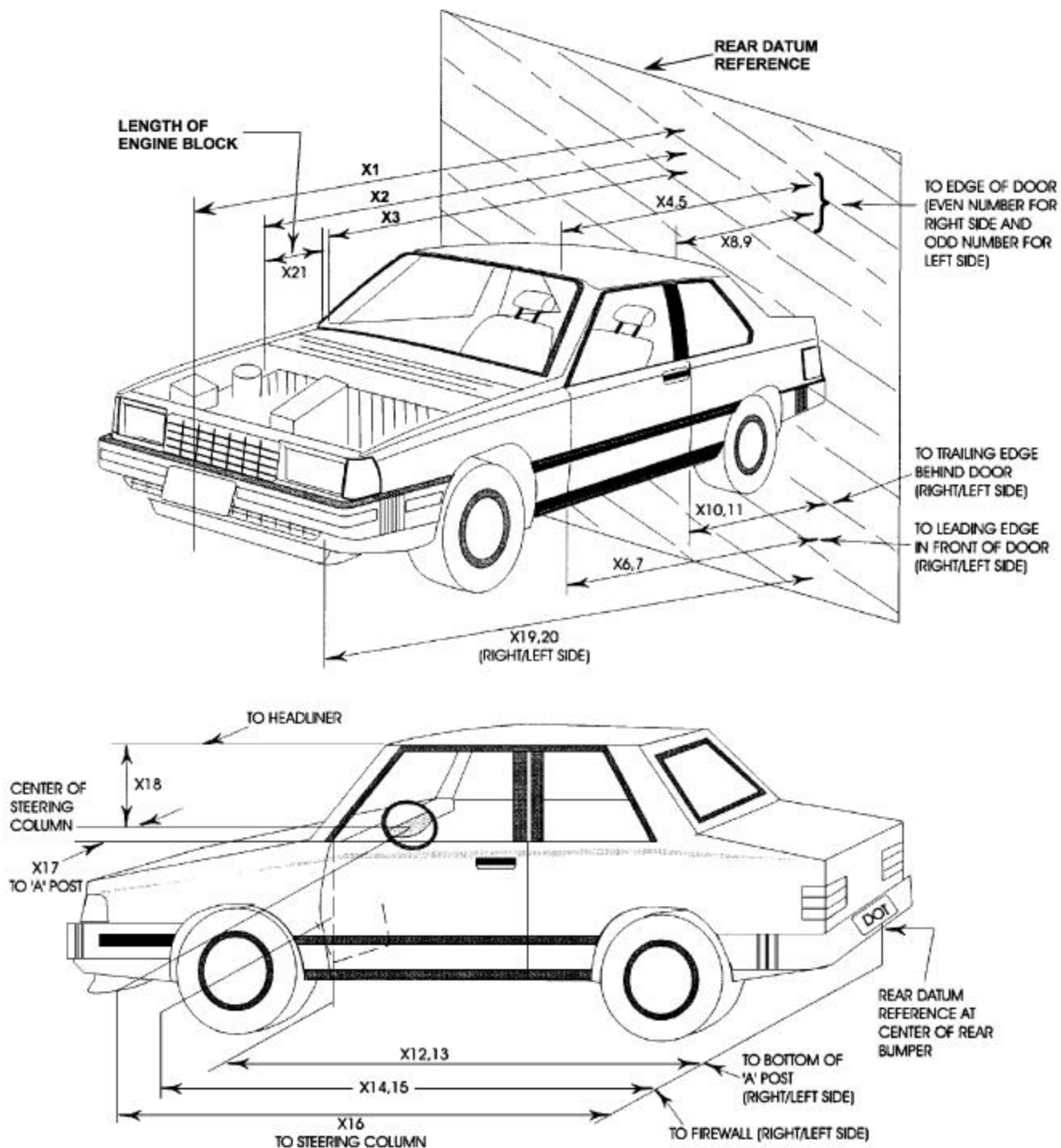
NHTSA No.: M20105
Test Date: 12/13/01

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4498	3853	-645
2	RSOV to front of engine	mm	3762	3753	-9
3	RSOV to firewall centerline	mm	3364	3343	-21
4	RSOV to leading edge of right door	mm	3112	3130	18
5	RSOV to leading edge of left door	mm	3093	3133	40
6	RSOV to lower leading edge of right door	mm	3082	3108	26
7	RSOV to lower leading edge of left door	mm	3082	3098	16
8	RSOV to upper trailing edge of right door	mm	1976	2005	29
9	RSOV to upper trailing edge of left door	mm	1968	2010	42
10	RSOV to lower trailing edge of right door	mm	1976	1974	-2
11	RSOV to lower trailing edge of left door	mm	1972	1974	2
12	RSOV to bottom of right 'A' pillar	mm	3064	3078	14
13	RSOV to bottom of left 'A' pillar	mm	3062	3061	-1
14	RSOV to firewall on right side	mm	3292	3268	-24
15	RSOV to firewall of left side	mm	3337	3338	1
16	RSOV to steering column	mm	2621	2703	82
17	Center of steering column to left 'A' pillar	mm	374	368	-6
18	Center of steering column to headlining	mm	474	475	1
19	RSOV to right side of front bumper	mm	4358	3865	-493
20	RSOV to left side of front bumper	mm	4358	3900	-458
21	Length of engine block	mm	410	410	0
RD	RSOV to right side of dash panel	mm	2872	2782	-90
CD	RSOV to center of dash panel	mm	2734	2715	-19
LD	RSOV to left side of dash panel	mm	2852	2831	-21

DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	3454	10973	1245	0	1651	Zoom	24
2	Left Side, No. 1	1960	-8250	880	-1	7966	13	1030
3	Left Side, No. 2	1060	-6210	1440	0	6031	25	1010
4	Left Side, No. 3	6500	-10580	4640	-16	11550	65	1010
5	Left Side, No. 4	1460	-8250	3100	-16	8160	19	1010
6	Left Side, No. 5	1460	-8250	2700	-13	8087	19	920
7	Right Side, No. 1	1960	8150	730	-1	7878	19	1030
8	Right Side, No. 2	2280	8150	1450	-4	7840	35	1020
9	Right Side, No. 3	7860	8900	2800	-9	10320	80	960
10	Right Side, No. 4	2750	9600	1500	-2	9301	50	940
11	Overhead Overall	250	0	4460	-86	N/A	13	1120
12	Front View, Driver	-530	-380	2590	-43	N/A	12	1100
13	Front View, Passenger	-530	380	2590	-55	N/A	13	940
14	Pit Camera, Engine	580	0	-1360	-90	N/A	10	1190
15	Pit Camera, Fuel Tank	3760	0	-1680	-55	N/A	12	1030
16	Driver Belt	2970	-280	1380	1	N/A	13	860
17	Passenger Belt	2970	290	1380	1	N/A	13	810
18	Left Side Extra	Not Used						

X - Barrier Face Y - Monorail Centerline Z - Ground

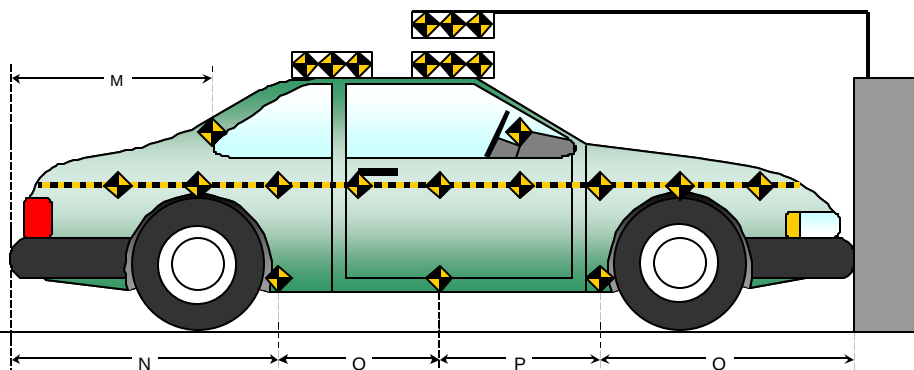
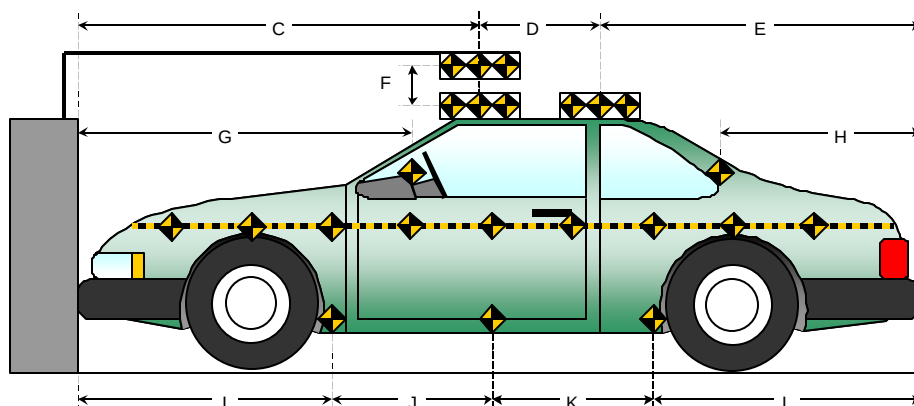
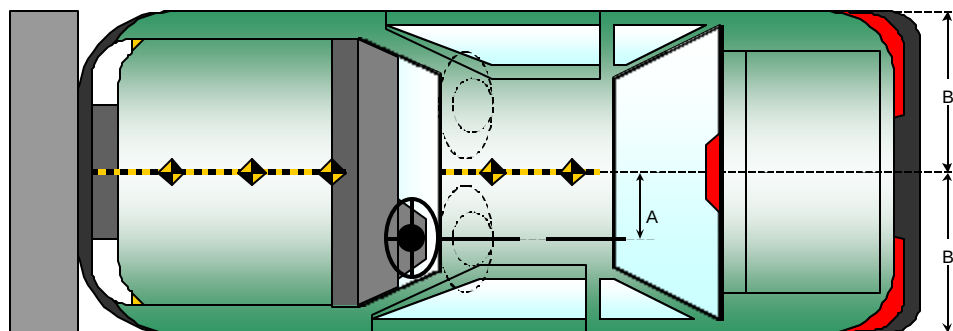
DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

in mm

Item	Value
A	354
B	872
C	2046
D	608
E	1856
F	155
G	1711
H	1511
I	1449
J	711
K	711
L	1631
M	1507
N	1637
O	711
P	711
Q	1435



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

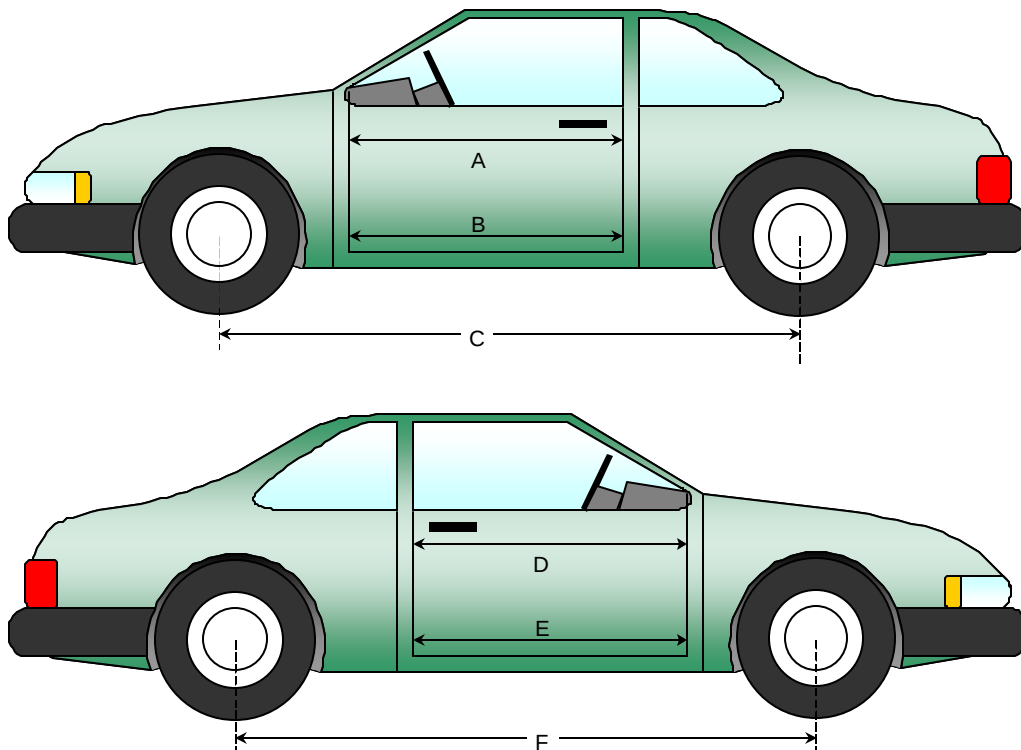
NHTSA No.: M20105
 Test Date: 12/13/01

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1065	1029	-36
B	Left Side Lower	mm	1068	1059	-9
D	Right Side Upper	mm	1064	1054	-10
E	Right Side Lower	mm	1067	1060	-7

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2554	2413	-141
F	Right Side Wheel base	mm	2554	2378	-176



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

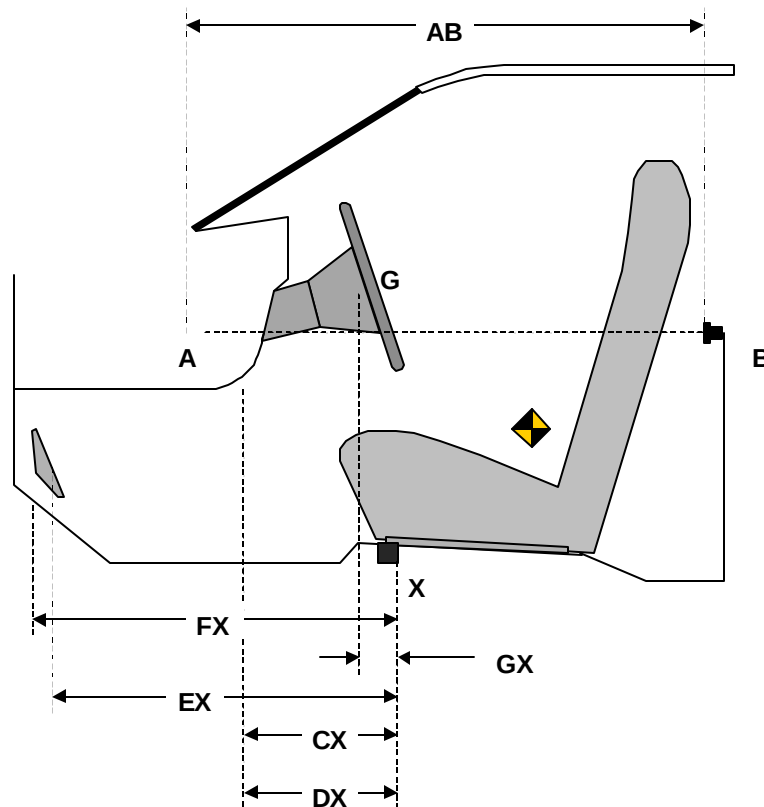
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1065	1029	-36
CX	Left Knee Bolster to X	mm	377	371	-6
DX	Right Knee Bolster to X	mm	393	357	-36
EX	Brake Pedal to X	mm	623	543	-80
FX	Foot Rest to X	mm	705	680	-25
GX	Center of Steering Wheel Hub to X	mm	113	156	43

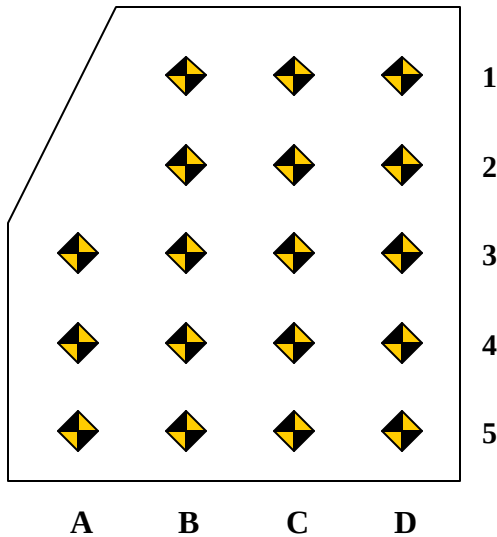
X = Left Front Seat Outboard Anchor Bolt Head



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01



Measurement reference point for X and Z-axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3,4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	0	664	657	658	0	740	729	702	0	76	72	44
2	0	564	554	540	0	642	628	607	0	78	74	67
3	460	455	450	443	543	539	524	520	83	84	74	77
4	366	357	354	346	452	446	448	455	86	89	94	109
5	264	254	252	246	350	345	347	355	86	91	95	109

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	0	-13	-30	-51	0	20	22	15	0	33	52	66
2	0	-85	-104	-105	0	-55	-45	-67	0	30	59	38
3	-83	-97	-109	-120	-67	-95	-93	-75	16	2	16	45
4	-86	-105	-114	-120	-80	-103	-115	-120	6	2	-1	0
5	-82	-96	-107	-113	-75	-107	-120	-95	7	-11	-13	18

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

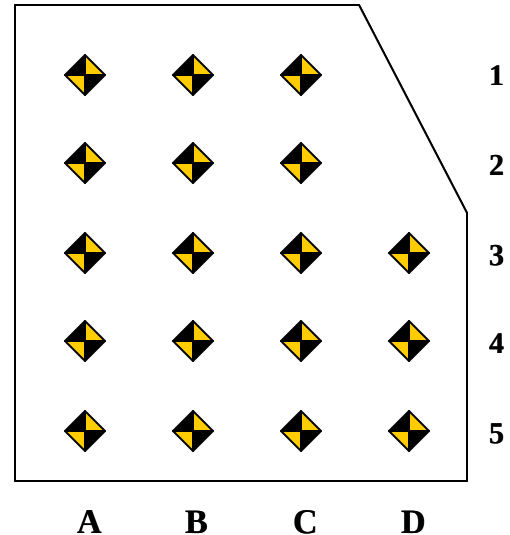
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3,4, and 5 are located on the most level portion of the floor pan.



Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	618	604	599	0	638	600	585	0	20	-4	-14	0
2	516	504	499	0	541	496	487	0	25	-8	-12	0
3	415	402	399	381	441	401	389	388	26	-1	-10	7
4	305	302	299	282	296	302	289	289	-9	0	-10	7
5	205	198	165	180	204	211	197	197	-1	13	32	17

PASSENGER FLOOR PAN Z-AXIS

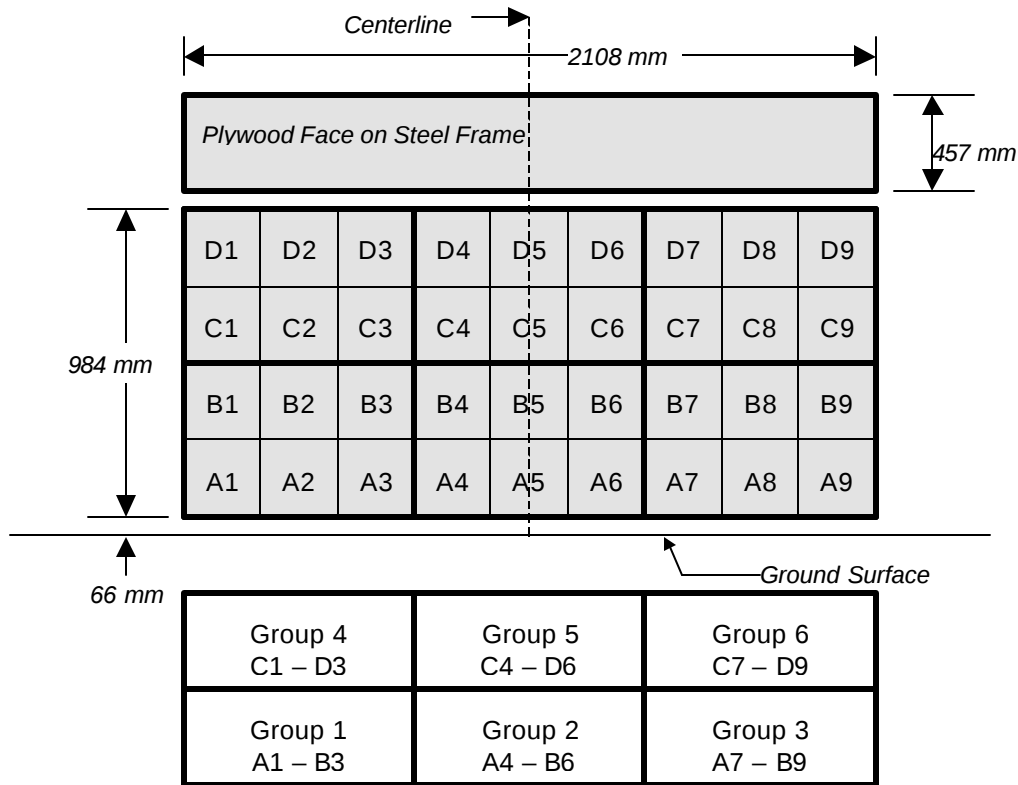
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-53	-55	-50	0	1	-15	-48	0	54	40	2	0
2	-108	-110	-110	0	-76	-86	-120	0	32	24	-10	0
3	-110	-112	-108	-102	-89	-89	-111	-111	21	23	-3	-9
4	-67	-115	-117	-115	-1	-95	-98	-98	66	20	19	17
5	-110	-116	-113	-48	22	-58	-75	-89	132	58	38	-41

DATA SHEET NO. 18
FIXED BARRIER TYPE

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
 Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
 Test Date: 12/13/01

VEHICLE INFORMATION

VIN: 1GNCT18W32K114673
 Vehicle Size Category: SUV

Wheel base (mm): 2554
 Test Weight (kg): 2144

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 55.85
 Velocity Change (km/h): 65.78

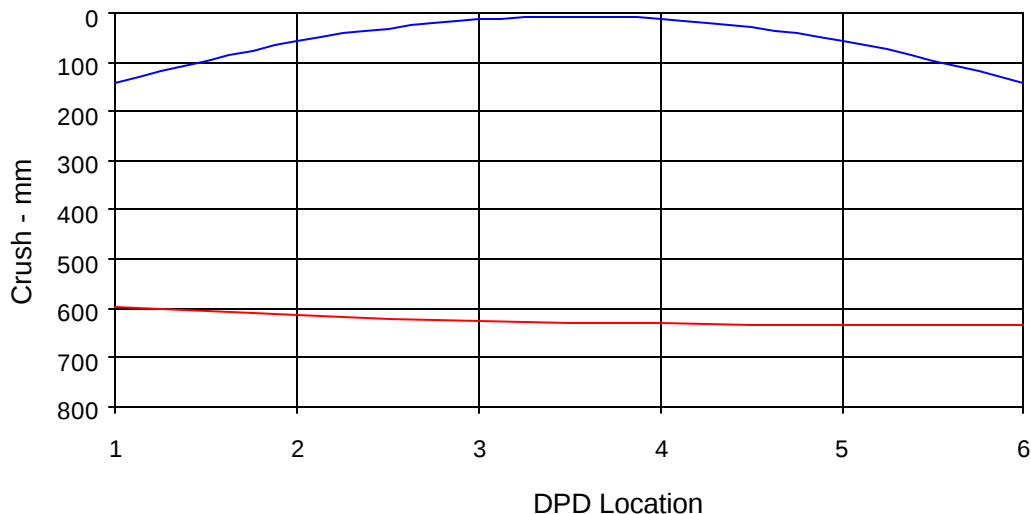
Linearity: Good

Time of Separation (msec): 74.2

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
 Damage Region Length (mm): 1364 Impact Mode: Full Frontal

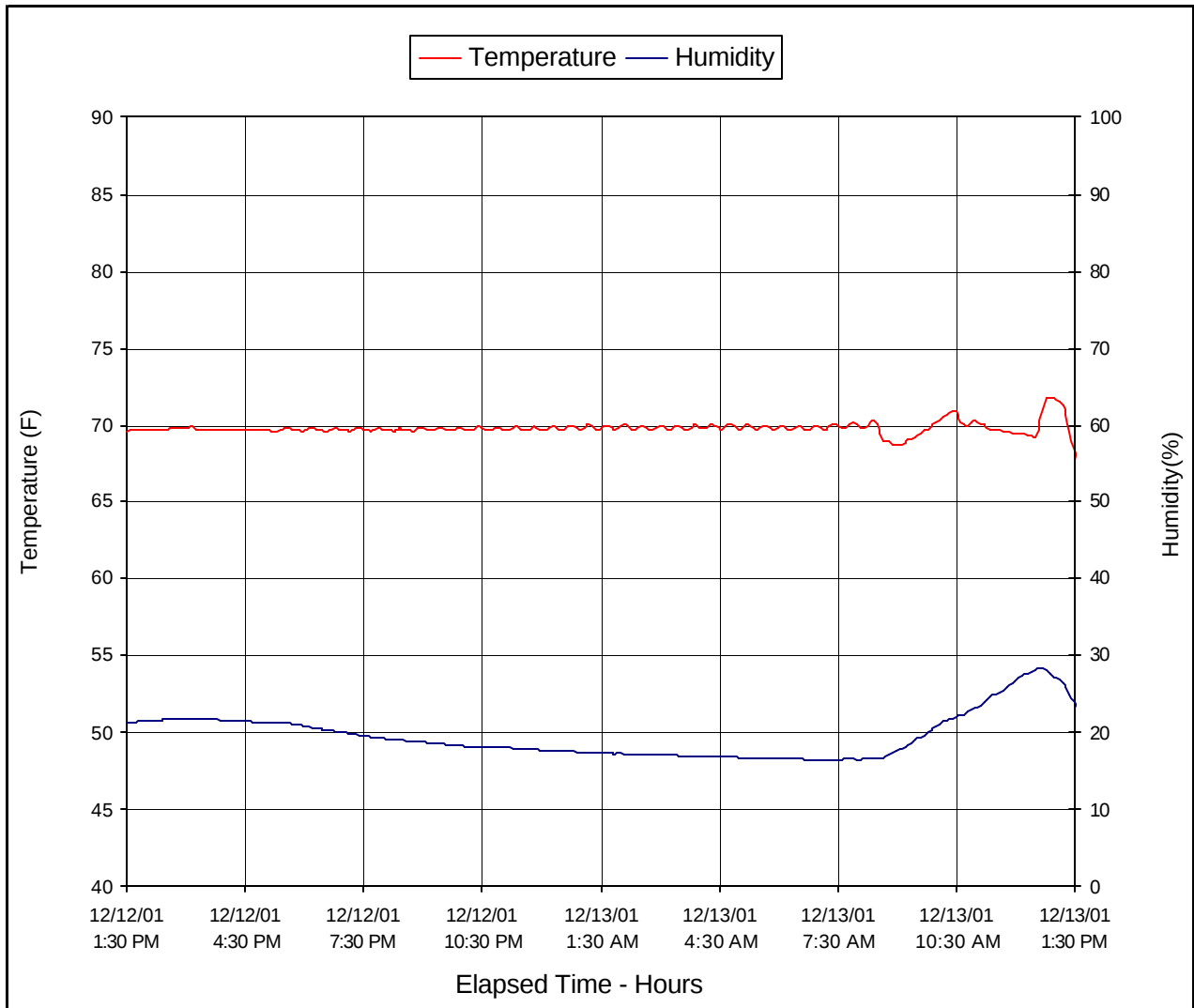
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	140	598	-458
C2	Crush zone 2 on left side	mm	57	615	-558
C3	Crush zone 3 on left side	mm	13	625	-612
C4	Crush zone 4 on right side	mm	12	631	-619
C5	Crush zone 5 on right side	mm	56	633	-577
C6	Crush zone 6 at right side	mm	140	633	-493



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV
Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105
Test Date: 12/13/01



APPENDIX A

PHOTOGRAPHS

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Figure A-1: Right Front, as Received



Figure A-2: Left Rear, as Received



MFD BY GENERAL MOTORS CORP

08/01

GVWR
2268KG(5000LB)

GAWR FRT
1134KG(2500LB)

GAWR RR
1225KG(2700LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

1GNCT18W32K114673 TYPE: M.P.V.

MODEL: T10516 PAYLOAD = 349KG(770LB)

TPAQ	TIRE SIZE	RIM	COLD TIRE PRESSURE
FRT	31X10.50R15C	15X7J	210KPA(30PSI)
RR	31X10.50R15C	15X7J	210KPA(30PSI)
SPA	31X10.50R15C	15X7J	210KPA(30PSI)

SEE OWNER'S MANUAL  FOR MORE INFORMATION.

Figure A-3: Vehicle Certification Label



MFD BY GENERAL MOTORS CORP

08/01

GVWR
2268KG(5000LB)

GAWR FRT
1134KG(2500LB)

GAWR RR
1225KG(2700LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
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SPA	31X10.50R15C	15X7J	210KPA(30PSI)

SEE OWNER'S MANUAL  FOR MORE INFORMATION.

Figure A-4: Vehicle Tire Label



Figure A-5: Front View, Pre-Test

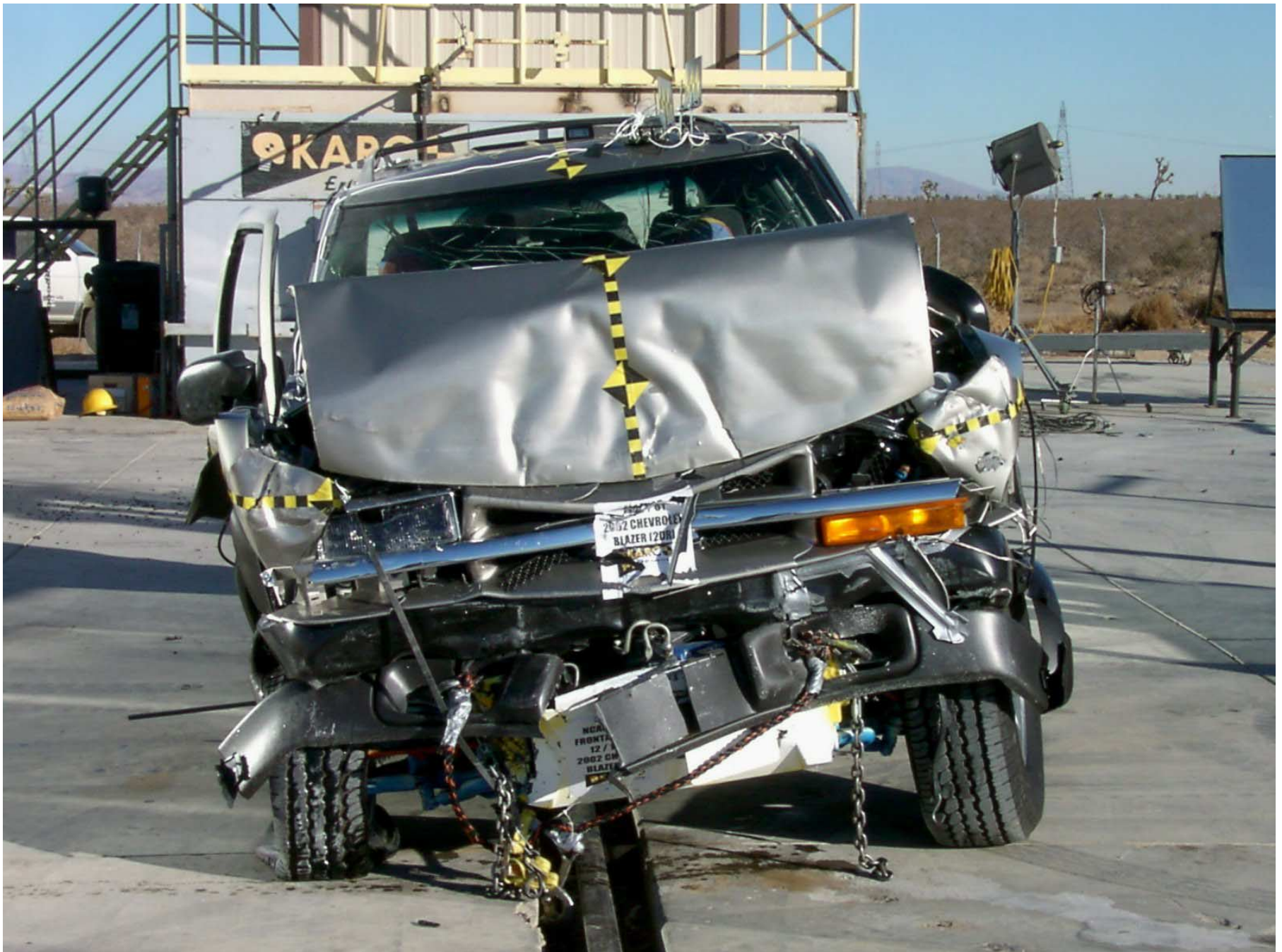


Figure A-6: Front View, Post-Test



Figure A-7: Left Side View, Pre-Test



Figure A-8: Left Side View, Post-Test



Figure A-9: Right Side View, Pre-Test



Figure A-10: Right Side View, Post-Test



Figure A-11: Right Front View, Pre-Test



Figure A-12: Right Front View, Post-Test



Figure A-13: Left Rear View, Pre-Test



Figure A-14: Left Rear View, Post-Test

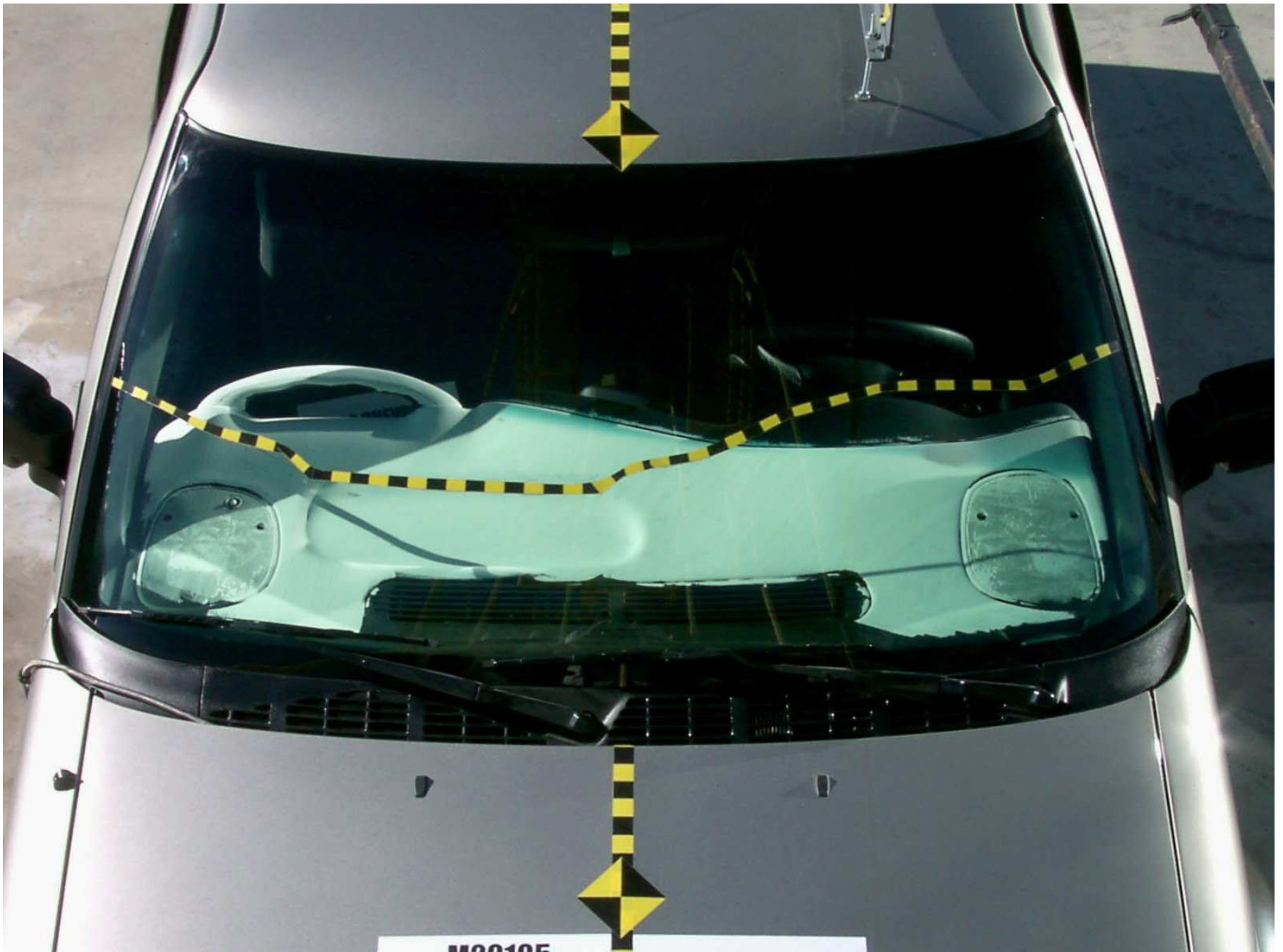


Figure A-15: Windshield, Pre-Test



Figure A-16: Windshield, Post-Test



Figure A-17: Engine Compartment, Pre-Test

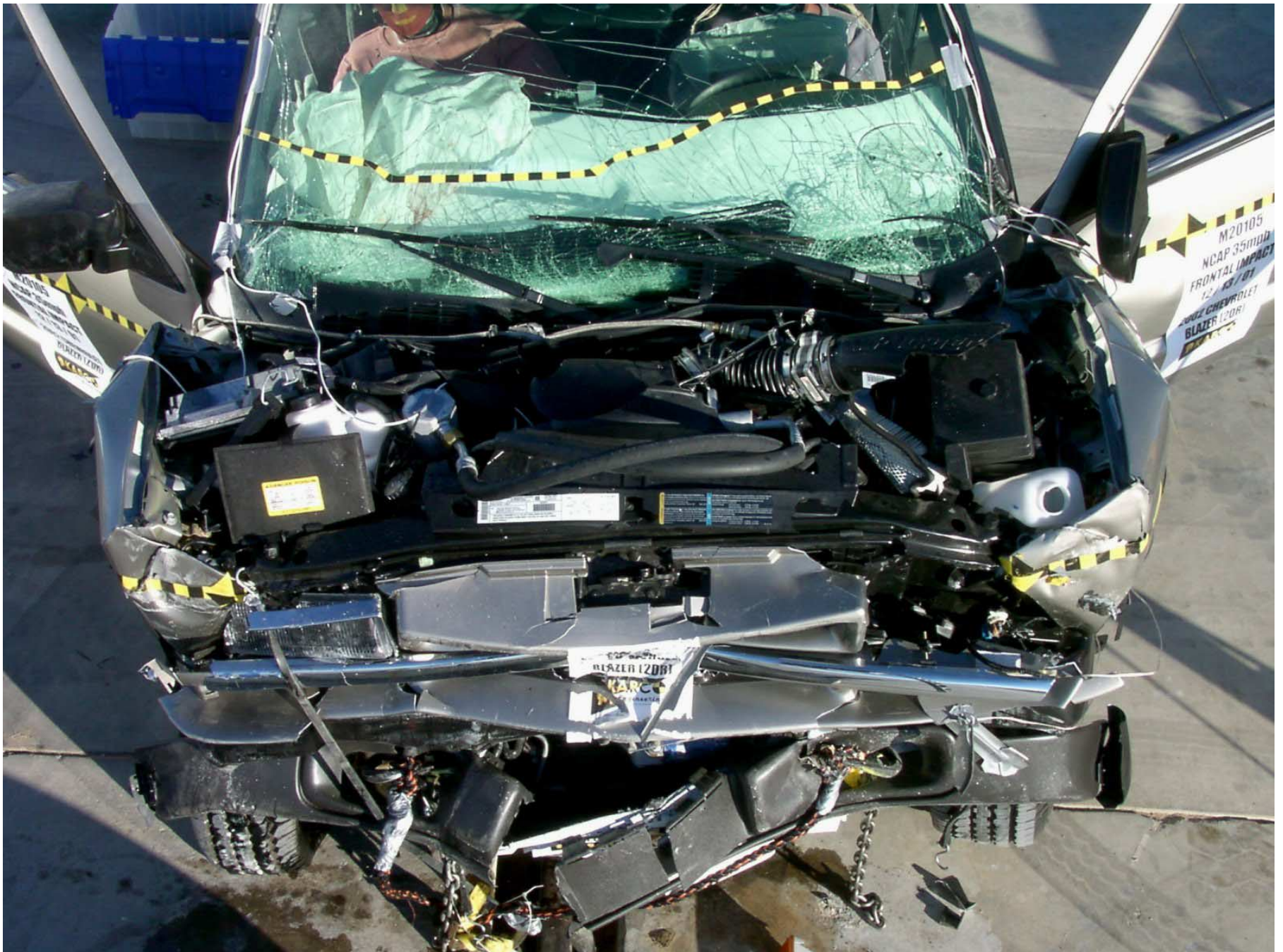


Figure A-18: Engine Compartment, Post-Test



Figure A-19: Fuel Cap, Pre-test



Figure A-20: Fuel Cap, Post-Test

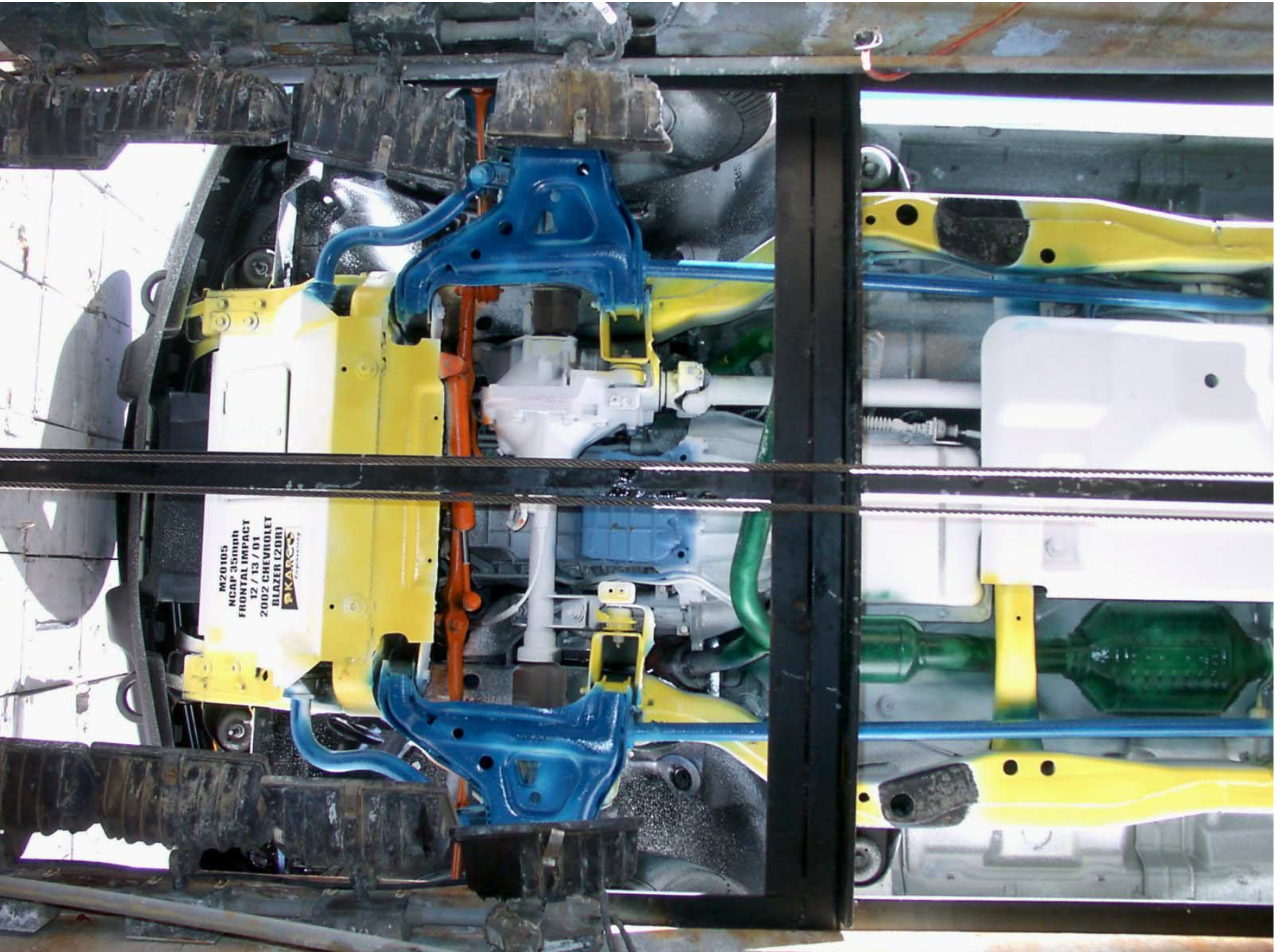


Figure A-21: Front Underside, Pre-Test

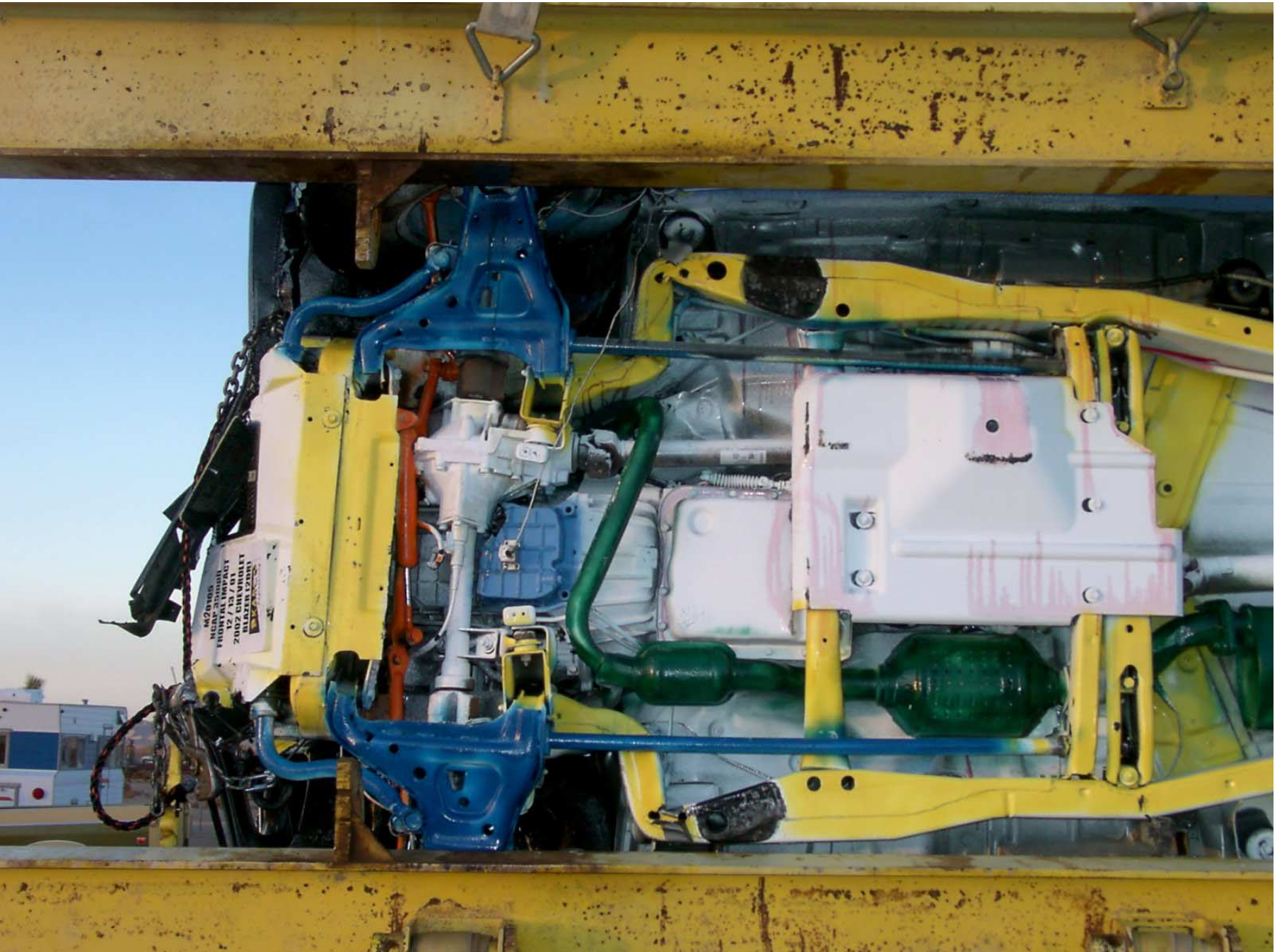


Figure A-22: Front Underside, Post-Test

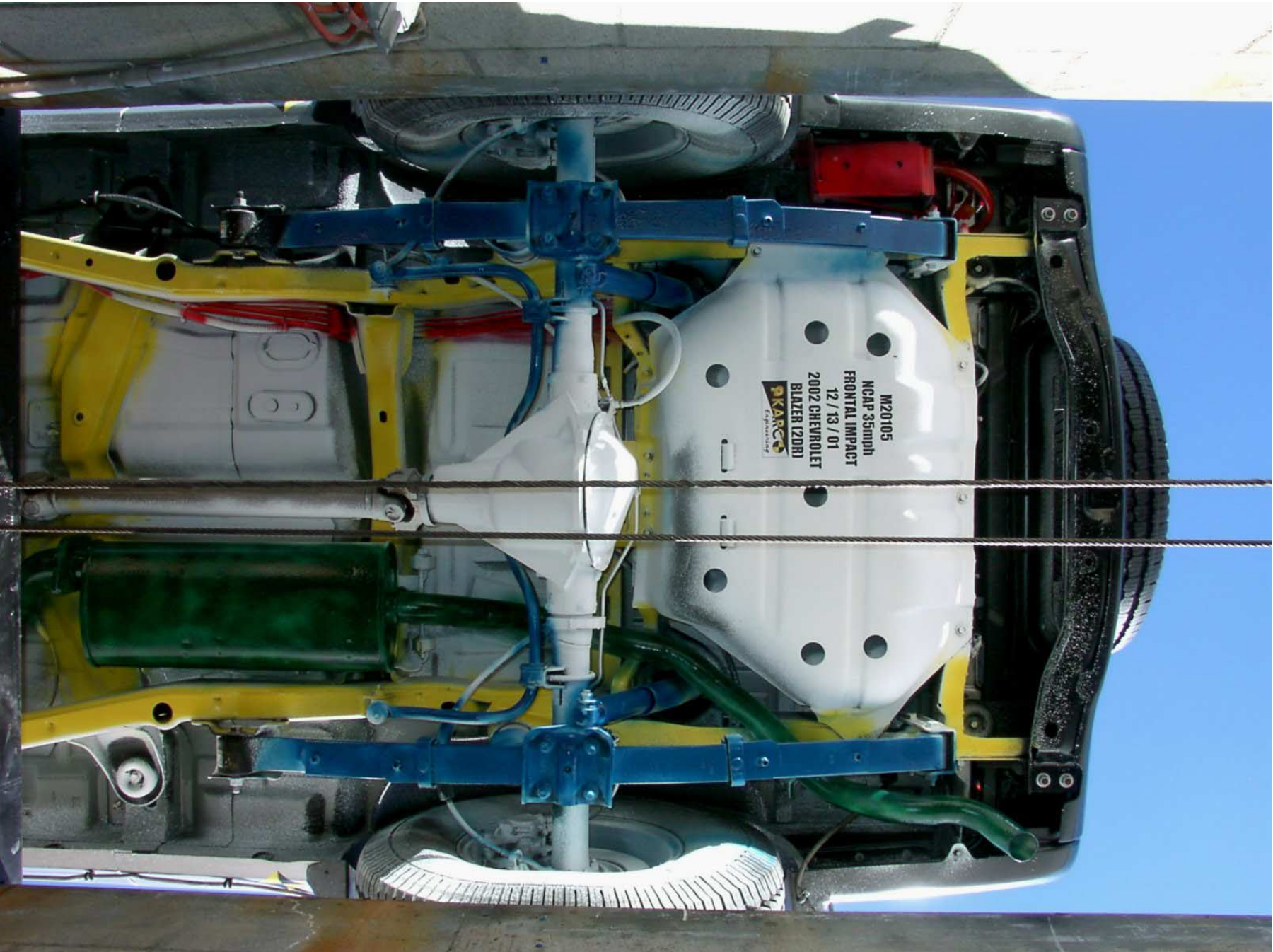


Figure A-23: Rear Underside, Pre-Test

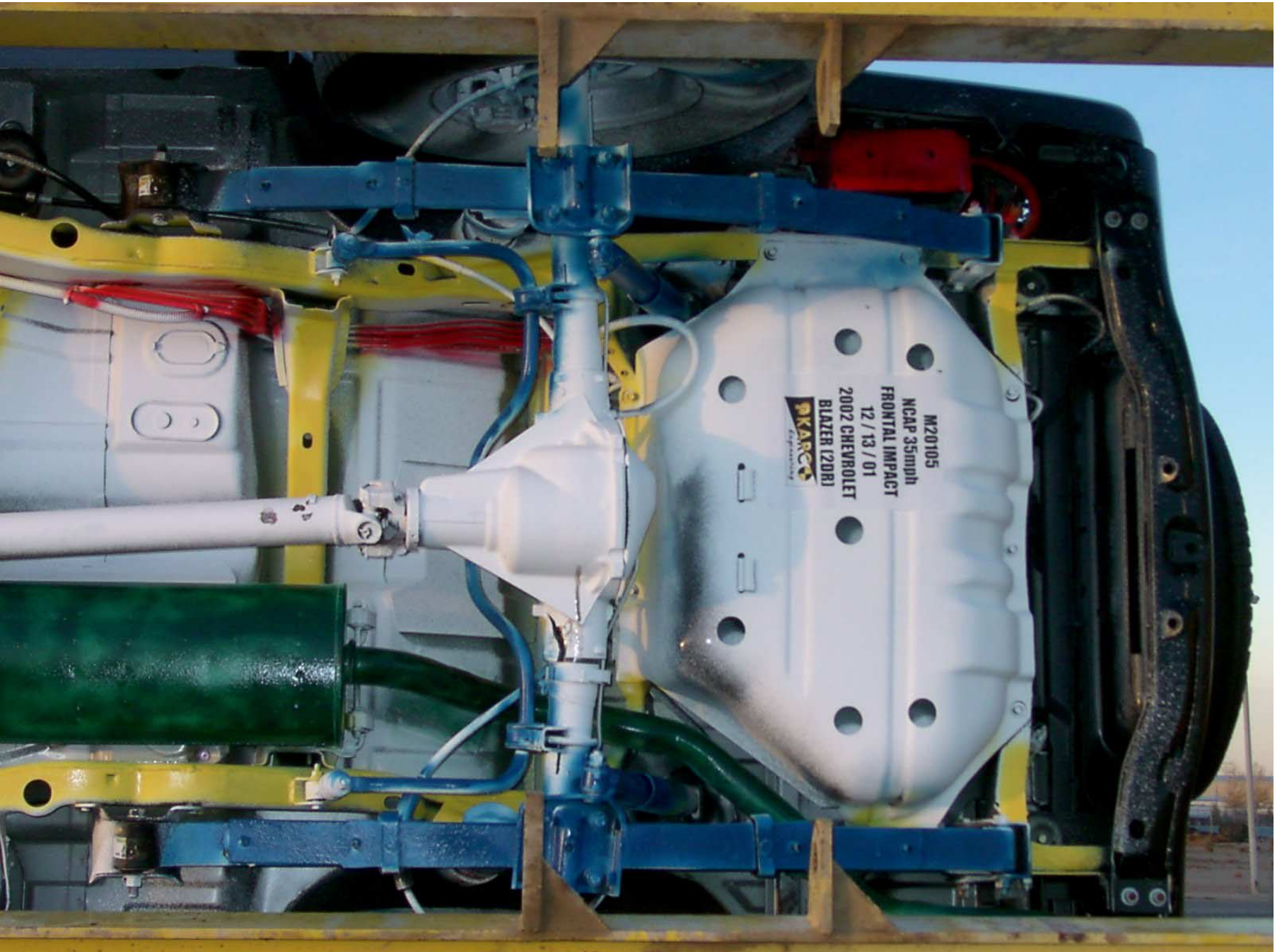


Figure A-24: Rear Underside, Post-Test

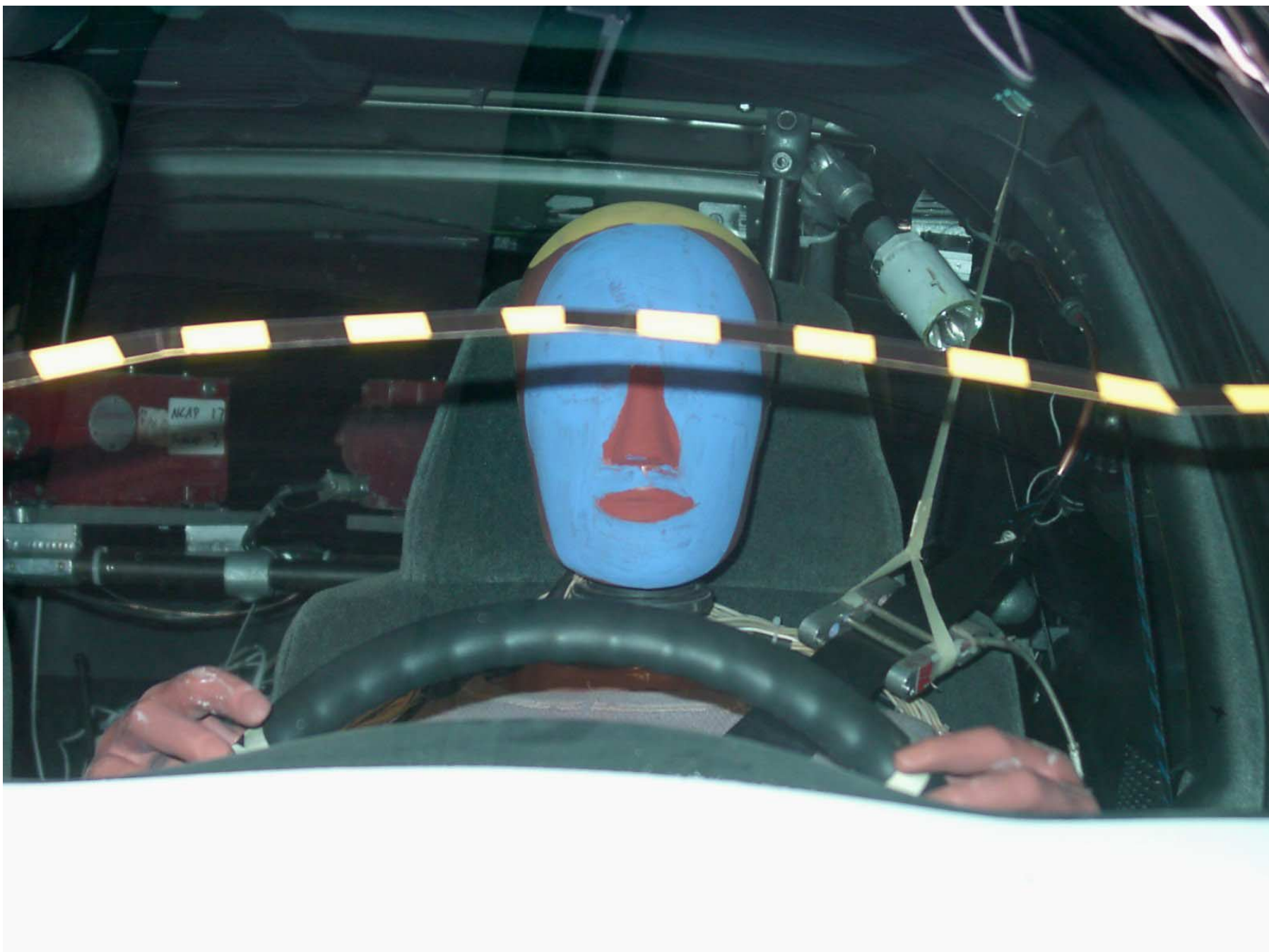


Figure A-25: Driver Dummy Front View, Pre-Test



Figure A-26: Driver Dummy Front View, Post-Test



Figure A-27: Driver Dummy Through Window, Pre-Test



Figure A-28: Driver Dummy Through Window, Post-Test



Figure A-29: Driver Dummy Door Open, Pre-Test



Figure A-30: Driver Dummy Door Open, Post-Test



Figure A-31: Driver Dummy 90° To Vehicle, Pre-Test



Figure A-32: Driver Dummy 90° To Vehicle, Post-Test



Figure A-33: Driver Dummy Feet, Pre-Test



Figure A-34: Driver Dummy Feet and Knee Contact, Post-Test



Figure A-35: Driver Side Knee Bolster, Pre-Test



Figure A-36: Driver Side Knee Bolster, Post-Test



Figure A-37: Driver Side Floor Pan, Pre-Test



Figure A-38: Driver Side Floor Pan, Post-Test



Figure A-39: Driver Dummy Head, Post-Test



Figure A-40: Driver Dummy Contact, Post-Test



Figure A-41: Passenger Dummy Front View, Pre-Test



Figure A-42: Passenger Dummy Front View, Post-Test



Figure A-43: Passenger Dummy Through Window, Pre-Test



Figure A-44: Passenger Dummy Through Window, Post-Test



Figure A-45: Passenger Dummy Door Open, Pre-Test



Figure A-46: Passenger Dummy Door Open, Post-Test



Figure A-47: Passenger Dummy 90° To Vehicle, Pre-Test



Figure A-48: Passenger Dummy 90° To Vehicle, Post-Test



Figure A-49: Passenger Dummy Feet, Pre-Test



Figure A-50: Passenger Dummy Feet and Knee Contact, Post-Test



Figure A-51: Passenger Side Floor Pan, Pre-Test



Figure A-52: Passenger Side Floor Pan, Post-Test



Figure A-53: Passenger Side Knee Bolster, Pre-Test



Figure A-54: Passenger Side Knee Bolster, Post-Test



Figure A-55: Passenger Head, Post-Test



Figure A-56: Passenger Dummy Contact, Post-Test



Figure A-57: Vehicle on Rollover Device



Figure A-58: Vehicle During Impact

APPENDIX B

DATA PLOTS

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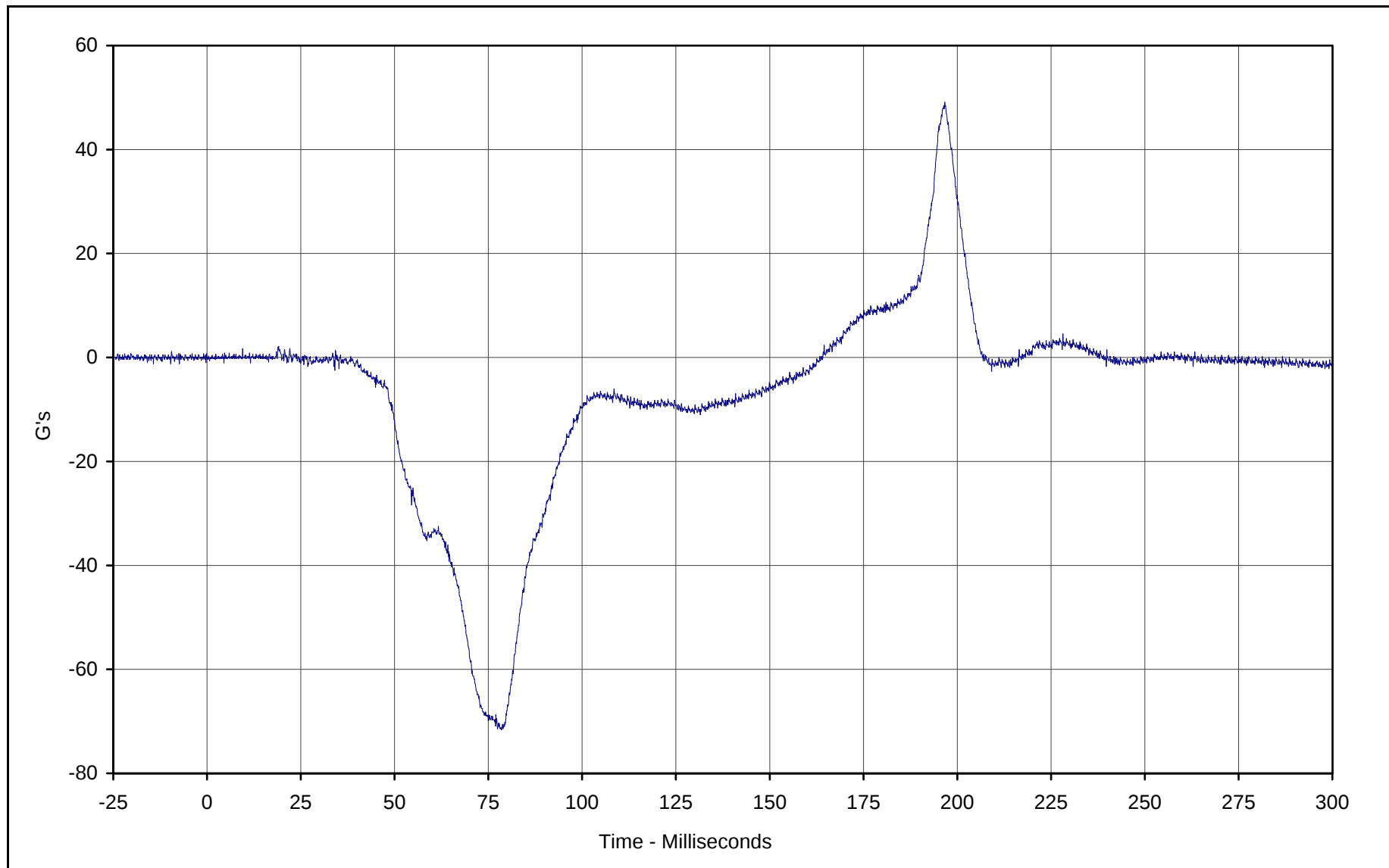
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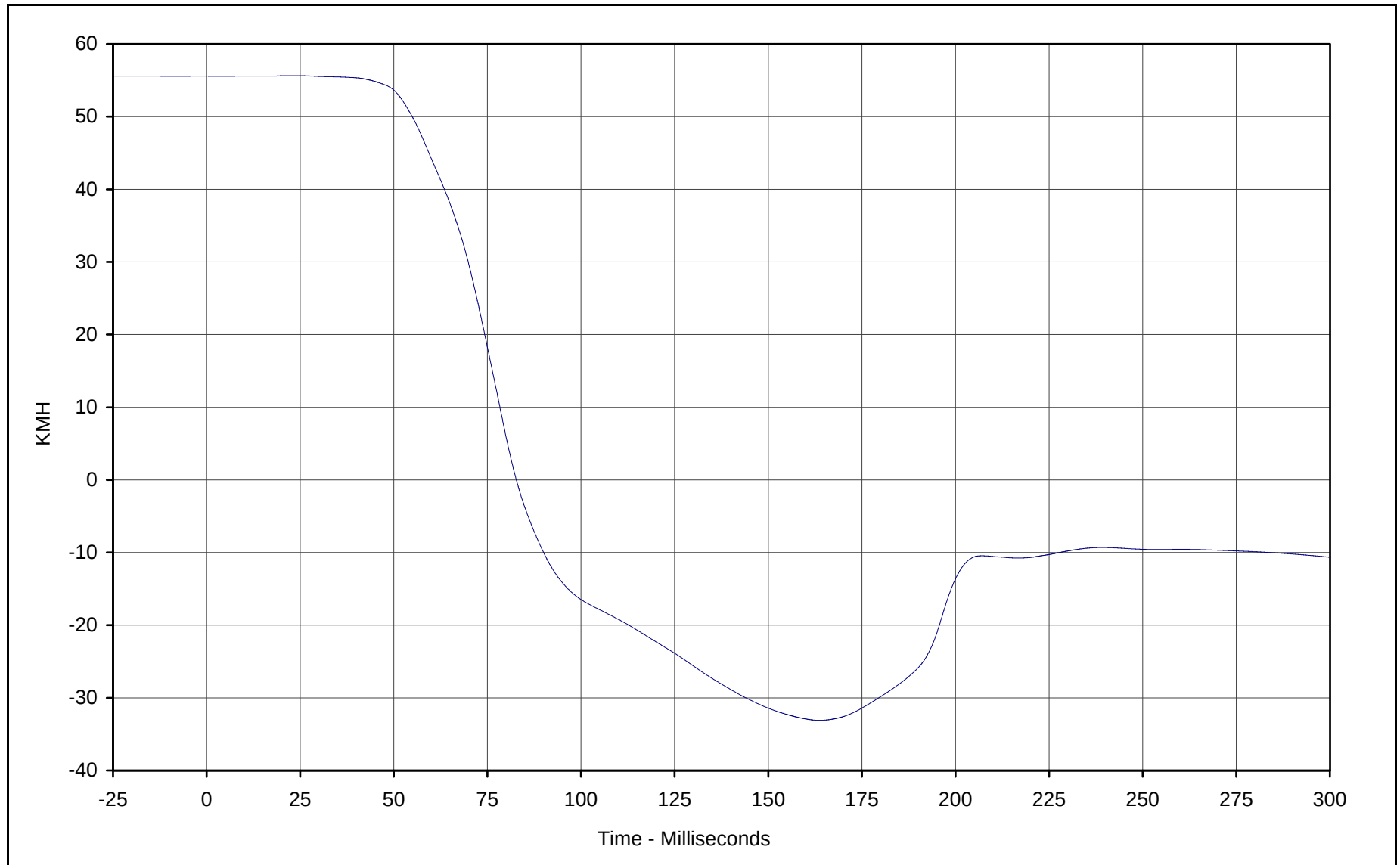
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Curve Description: Driver Head Primary X
Maximum Value: 49.1 at 196.7 Milliseconds
Minimum Value: -71.6 at 78.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



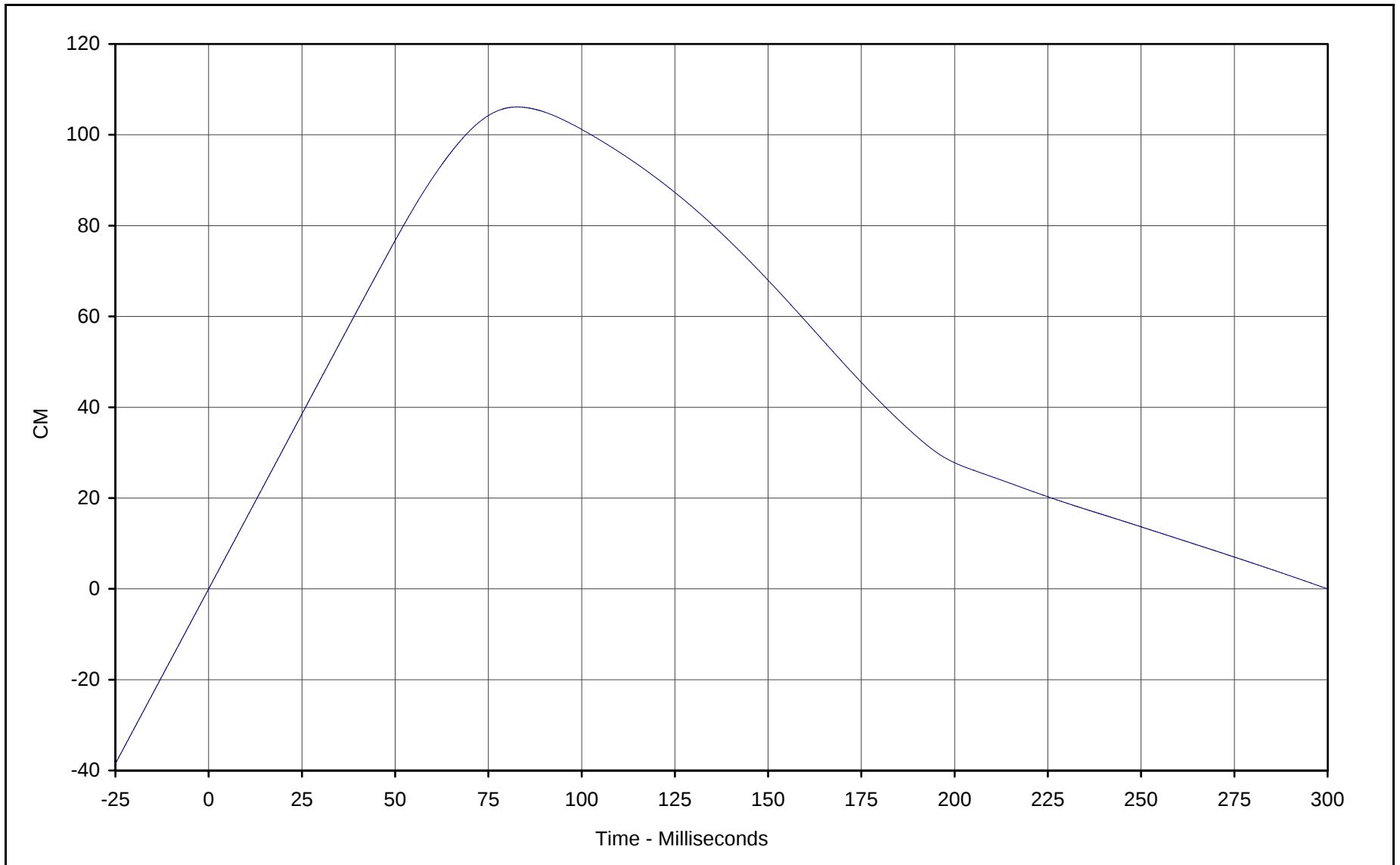


Curve Description: Driver Head Primary X Velocity
Maximum Value: 55.7 at 23.9 Milliseconds
Minimum Value: -33.1 at 163.7 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

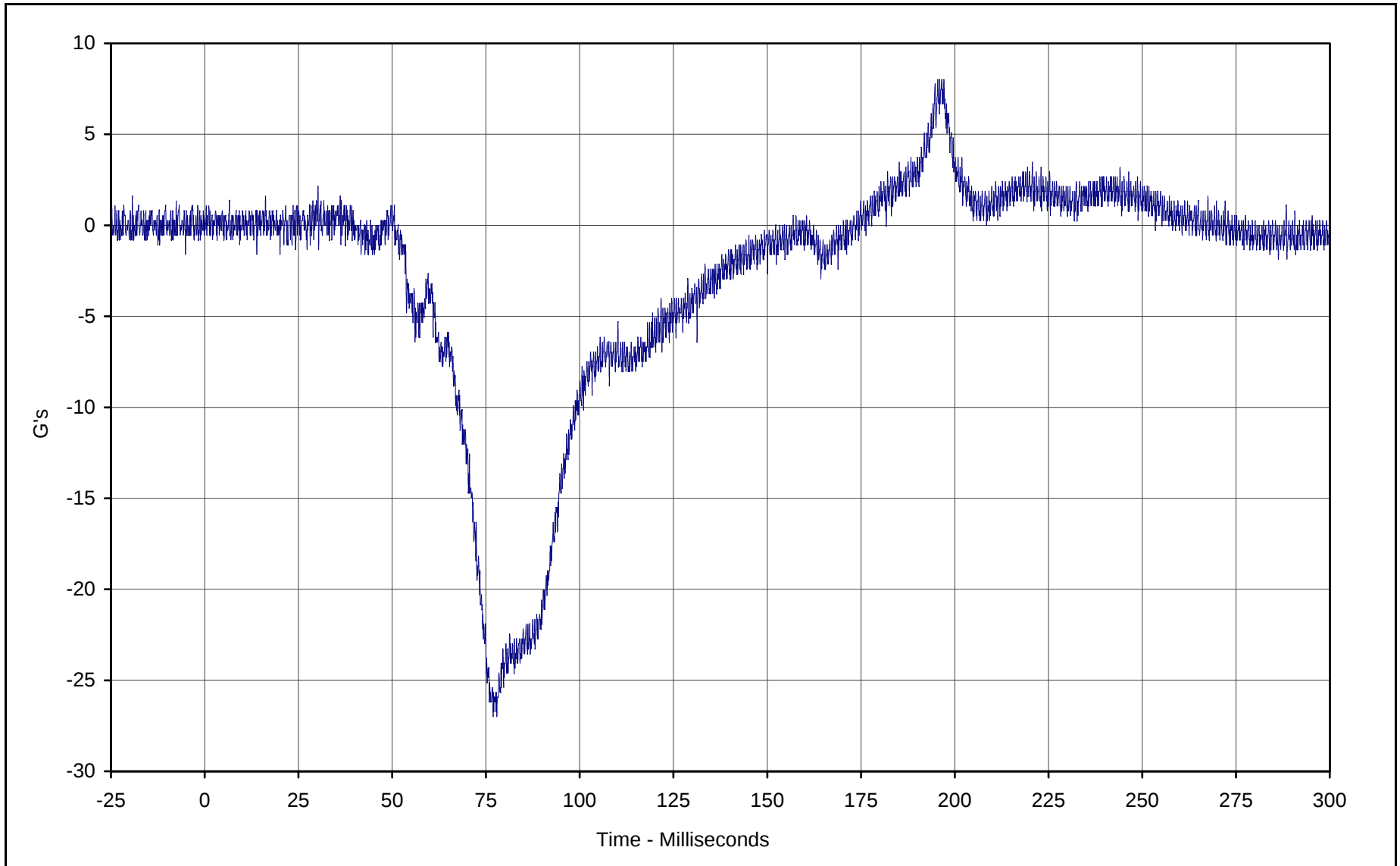




Curve Description: Driver Head Primary X Displ.
Maximum Value: 106.1 at 82.7 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

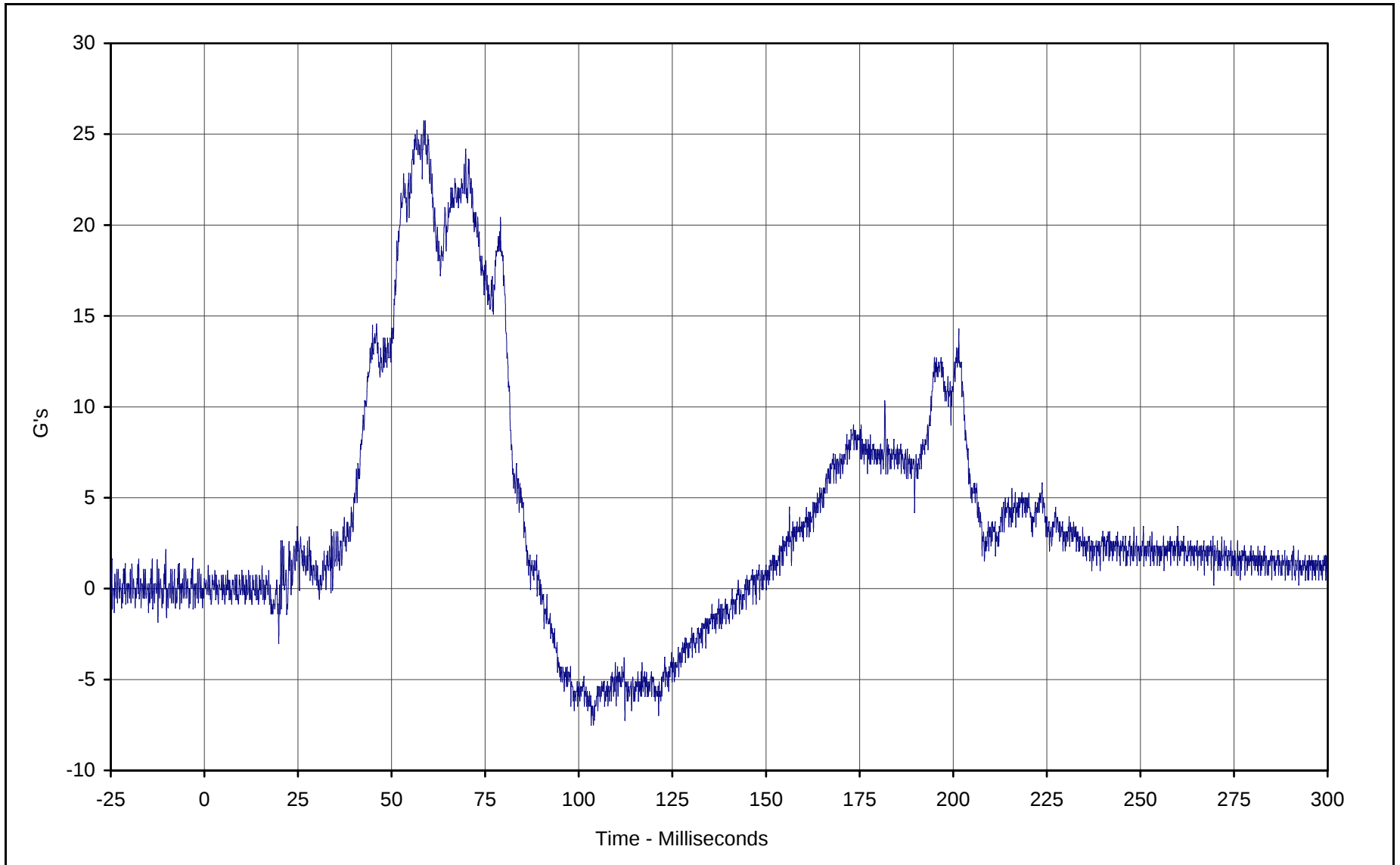




Curve Description: Driver Head Primary Y
Maximum Value: 8.0 at 195.5 Milliseconds
Minimum Value: -27.0 at 76.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-002

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

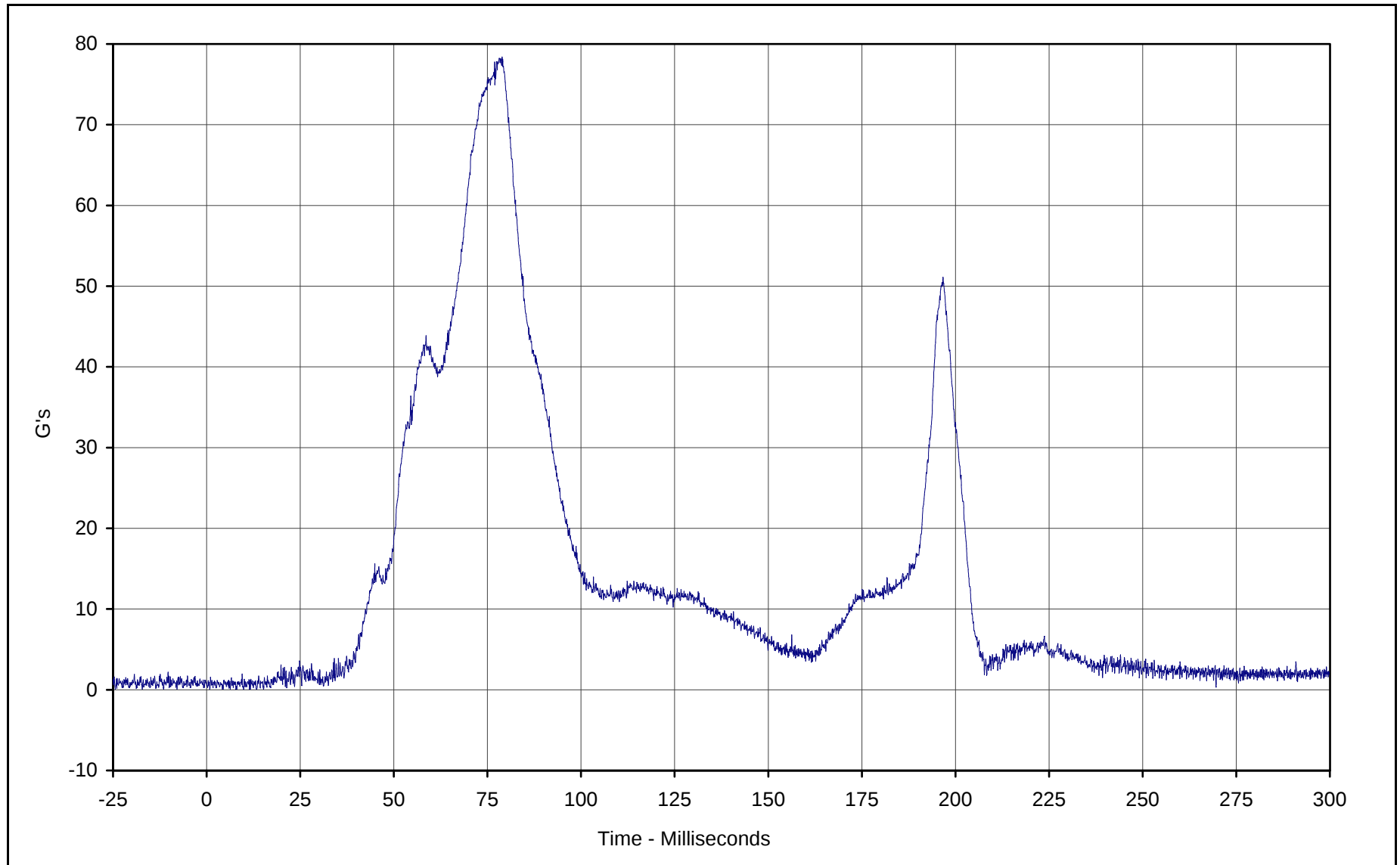




Curve Description: Driver Head Primary Z
Maximum Value: 25.7 at 58.6 Milliseconds
Minimum Value: -7.5 at 103.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-003

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

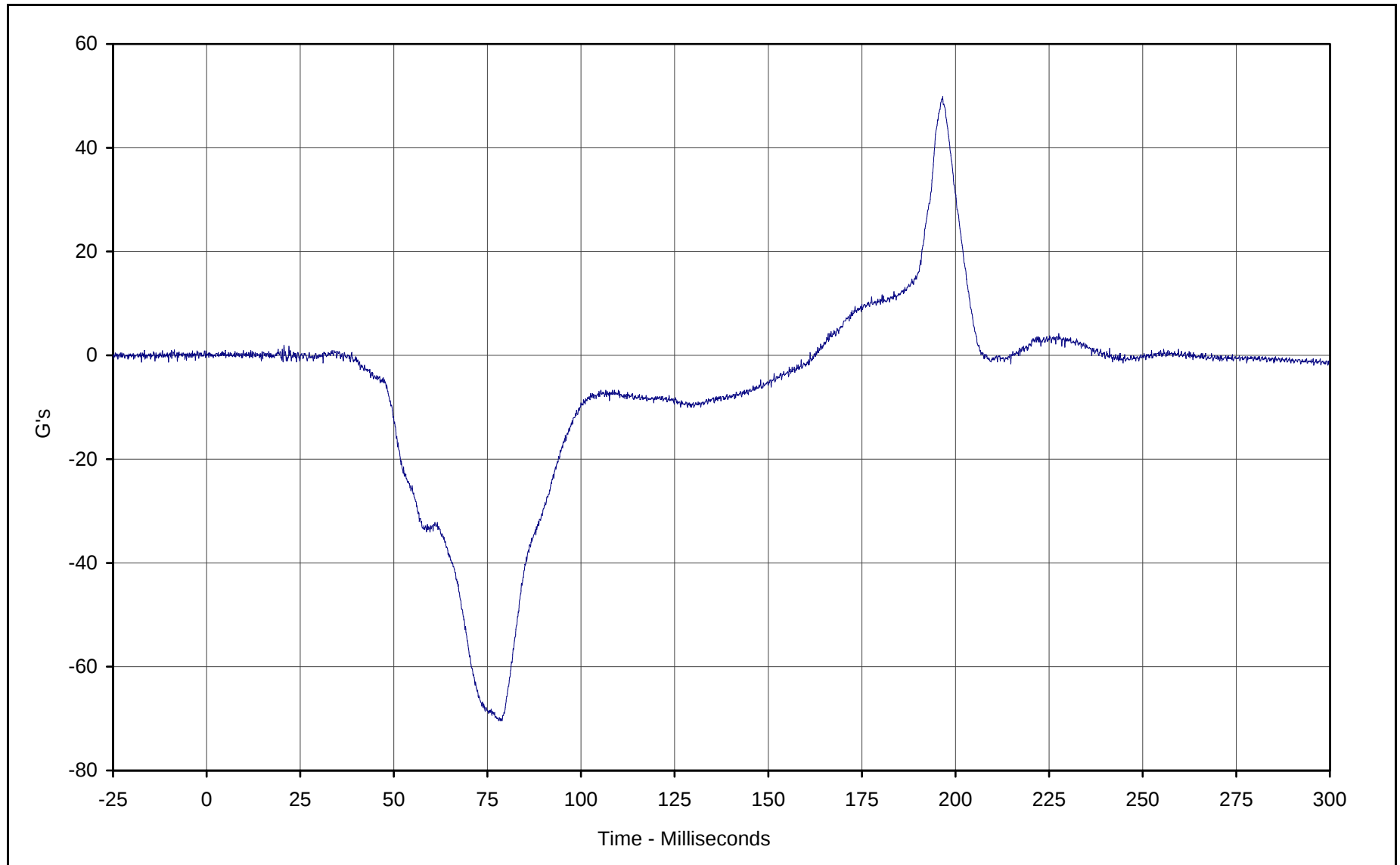




Curve Description: Driver Head Resultant Primary
Maximum Value: 78.4 at 78.9 Milliseconds
Minimum Value: 0.1 at 0.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

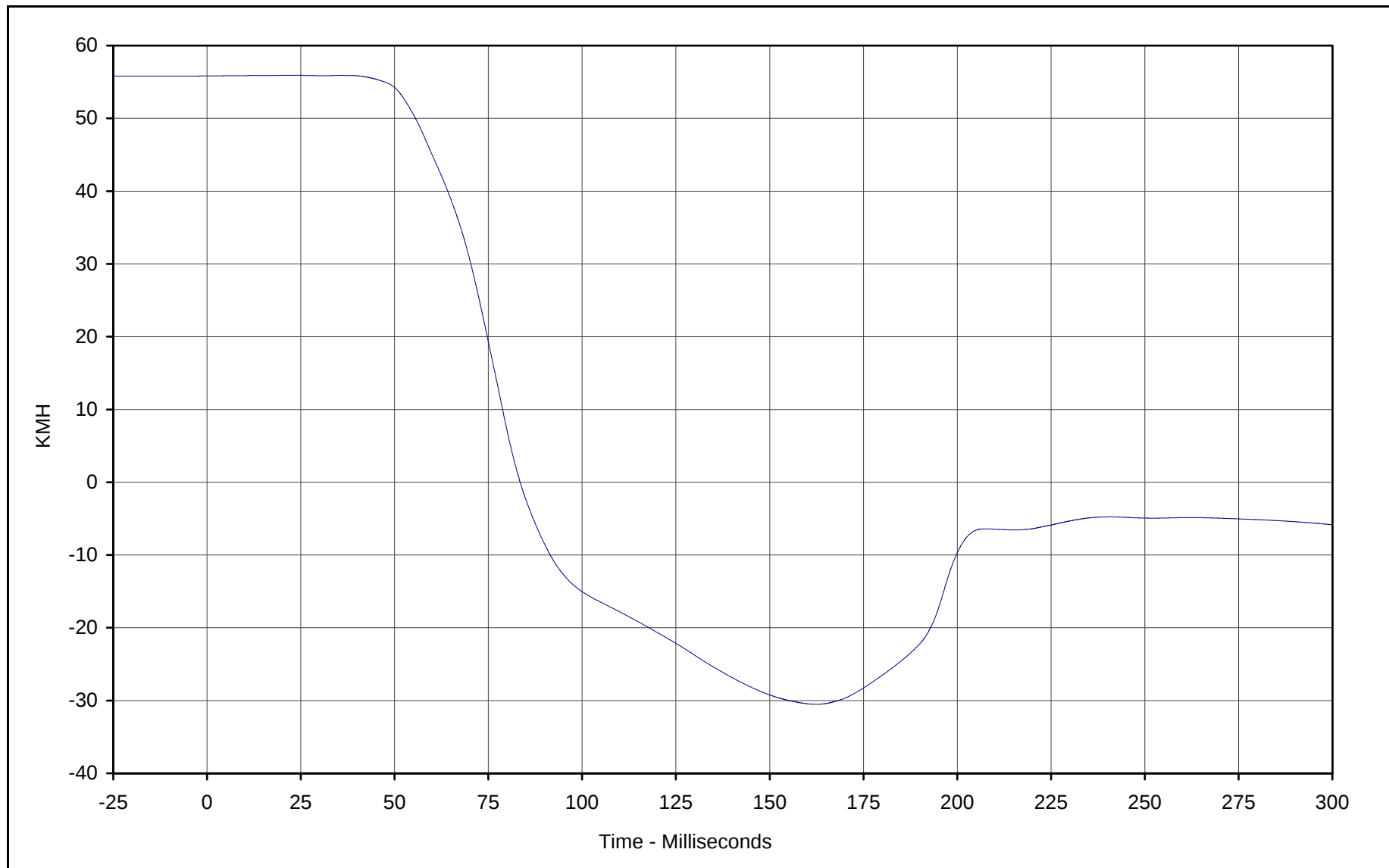




Curve Description: Driver Head Redundant X
Maximum Value: 49.9 at 196.6 Milliseconds
Minimum Value: -70.4 at 78.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-004

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

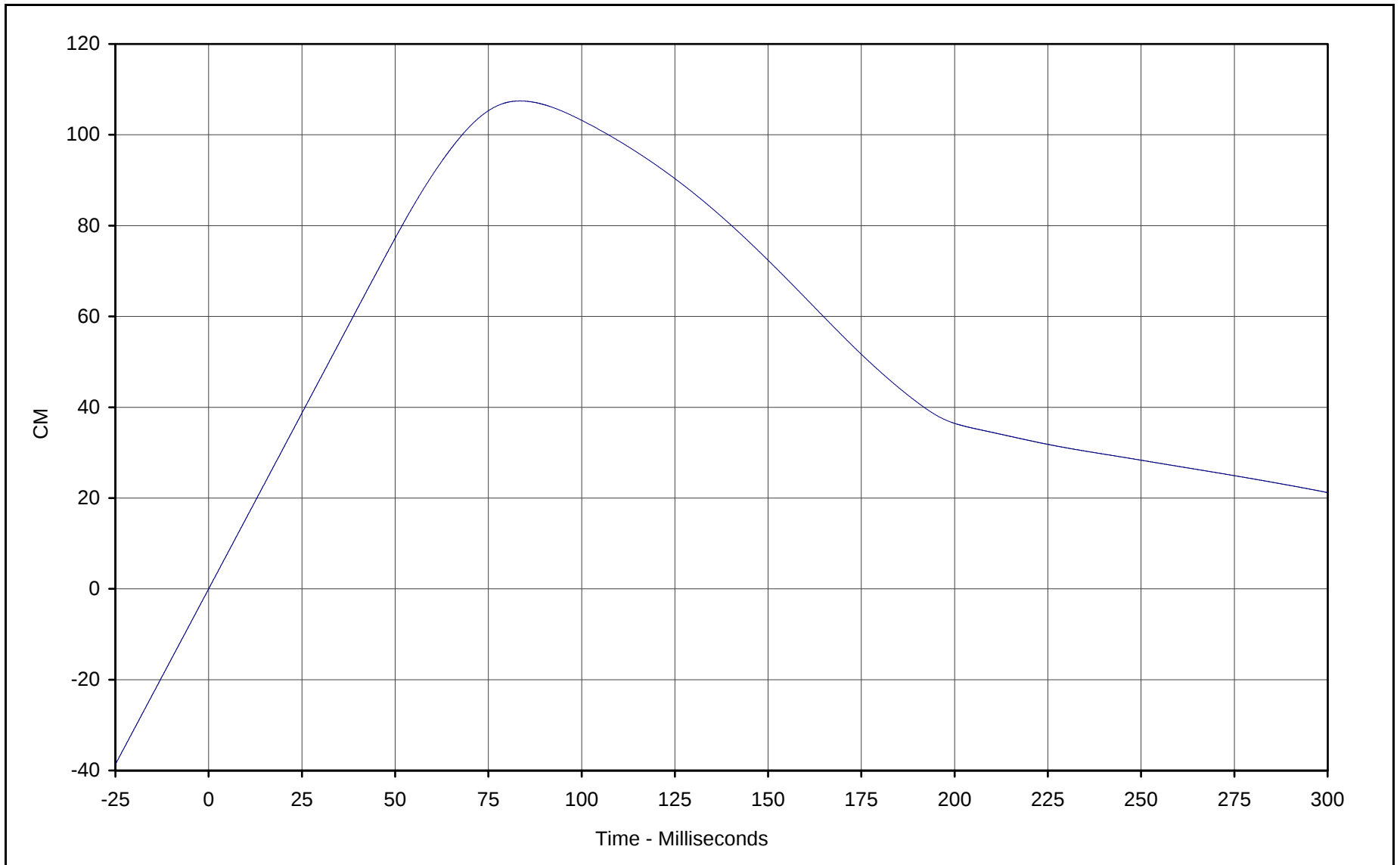




Curve Description: Driver Head Redundant X Velocity
Maximum Value: 55.9 at 23.3 Milliseconds
Minimum Value: -30.5 at 162.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-004

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

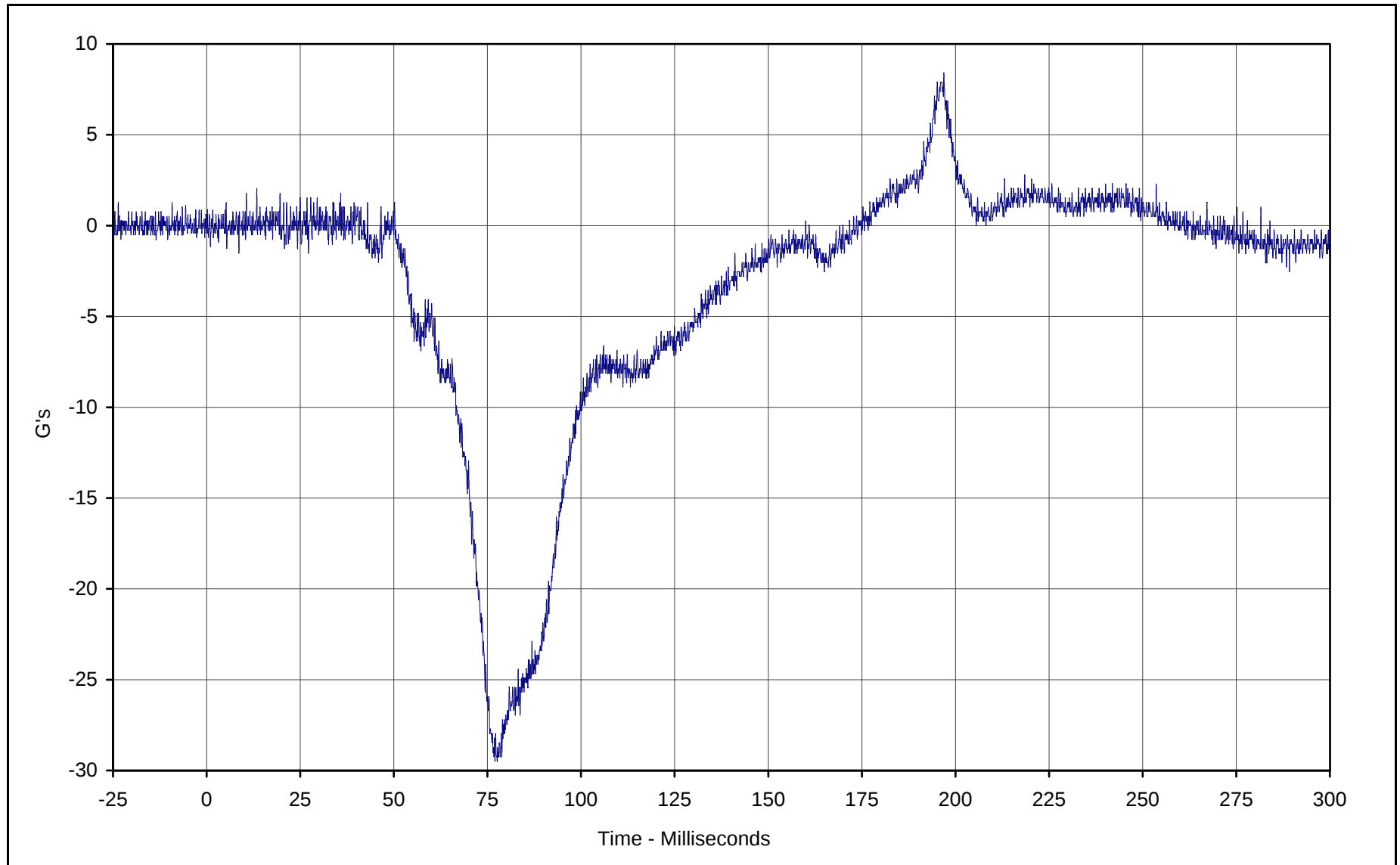




Curve Description: Driver Head Redundant X Displ.
Maximum Value: 107.5 at 83.5 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-004

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

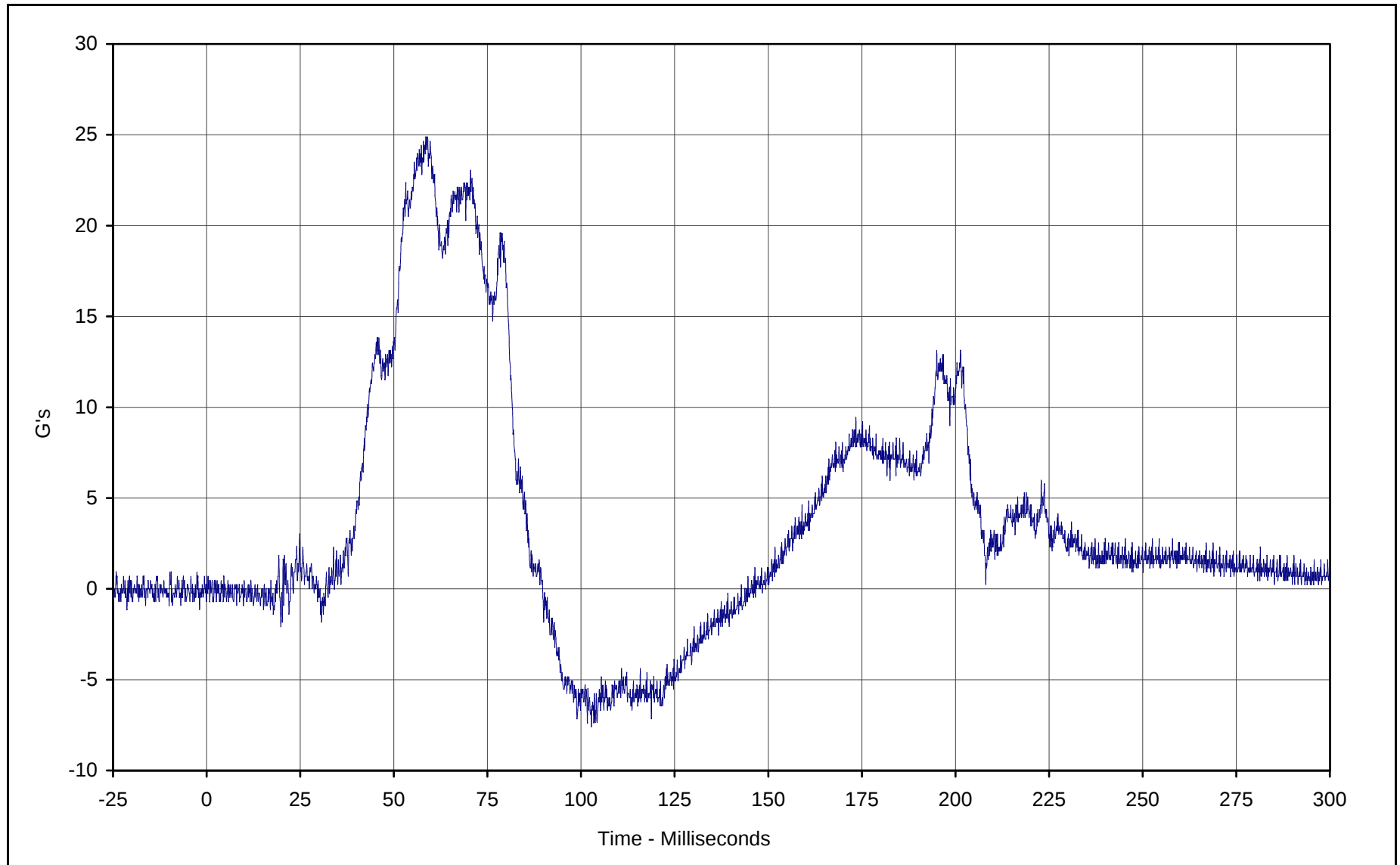




Curve Description: Driver Head Redundant Y
Maximum Value: 8.4 at 196.9 Milliseconds
Minimum Value: -29.5 at 77.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-005

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



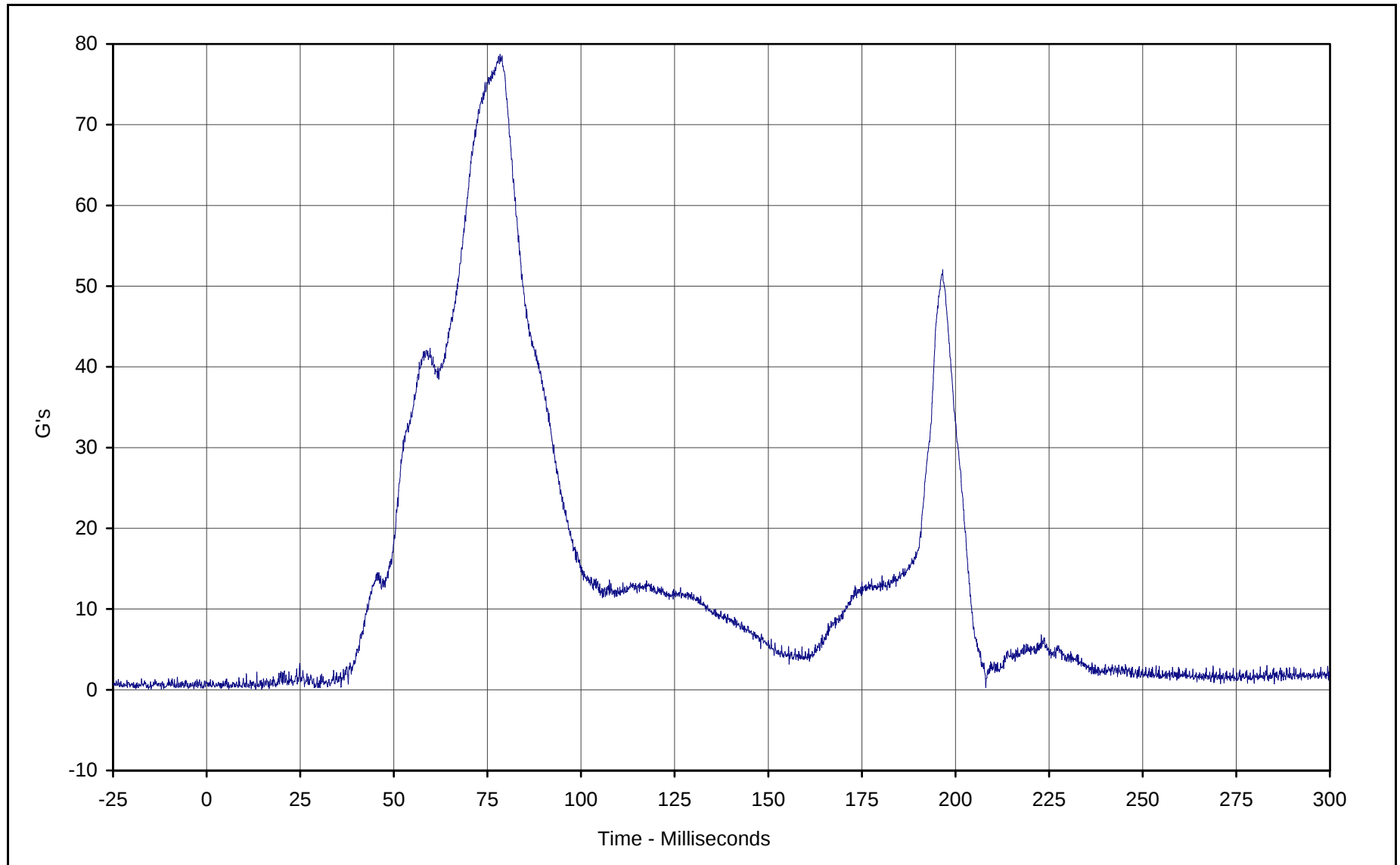


Curve Description: Driver Head Redundant Z
Maximum Value: 24.9 at 58.5 Milliseconds
Minimum Value: -7.6 at 102.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-006

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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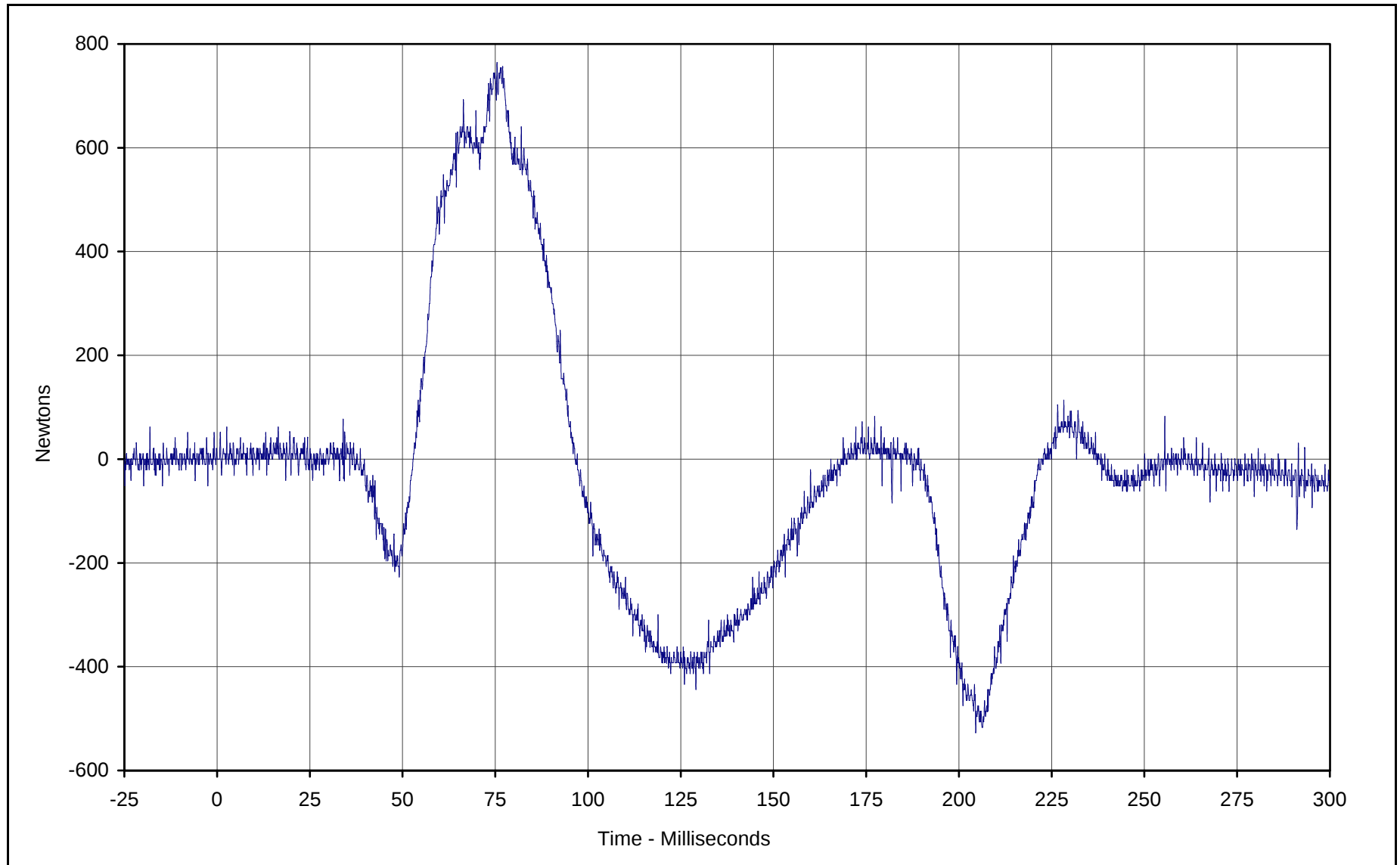


Curve Description: Driver Head Resultant Redundant
Maximum Value: 78.7 at 78.4 Milliseconds
Minimum Value: 0.1 at 5.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-004

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



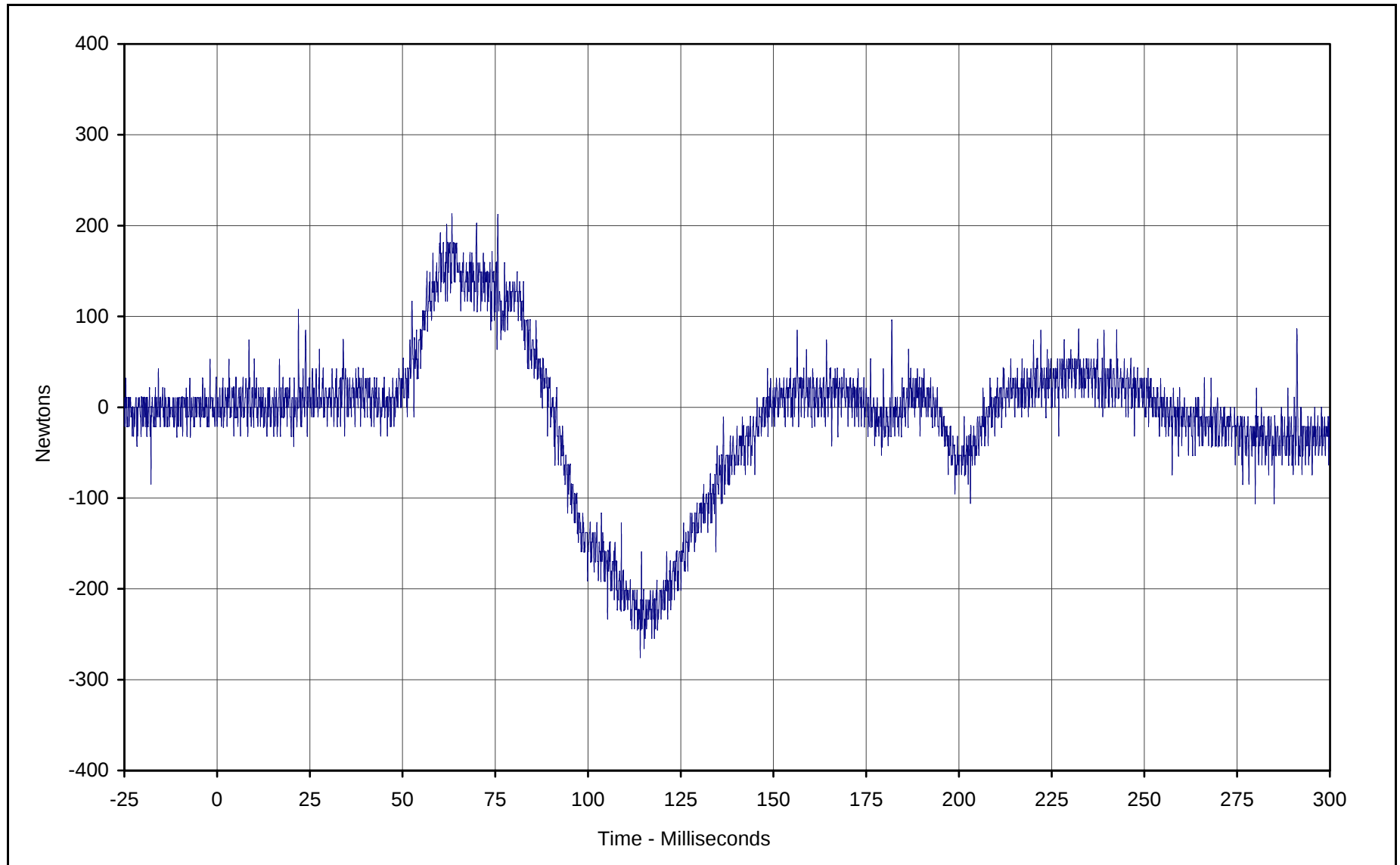
KAR22001-02



Curve Description: Driver Neck Force X
Maximum Value: 764.7 at 75.5 Milliseconds
Minimum Value: -527.0 at 204.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-007

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

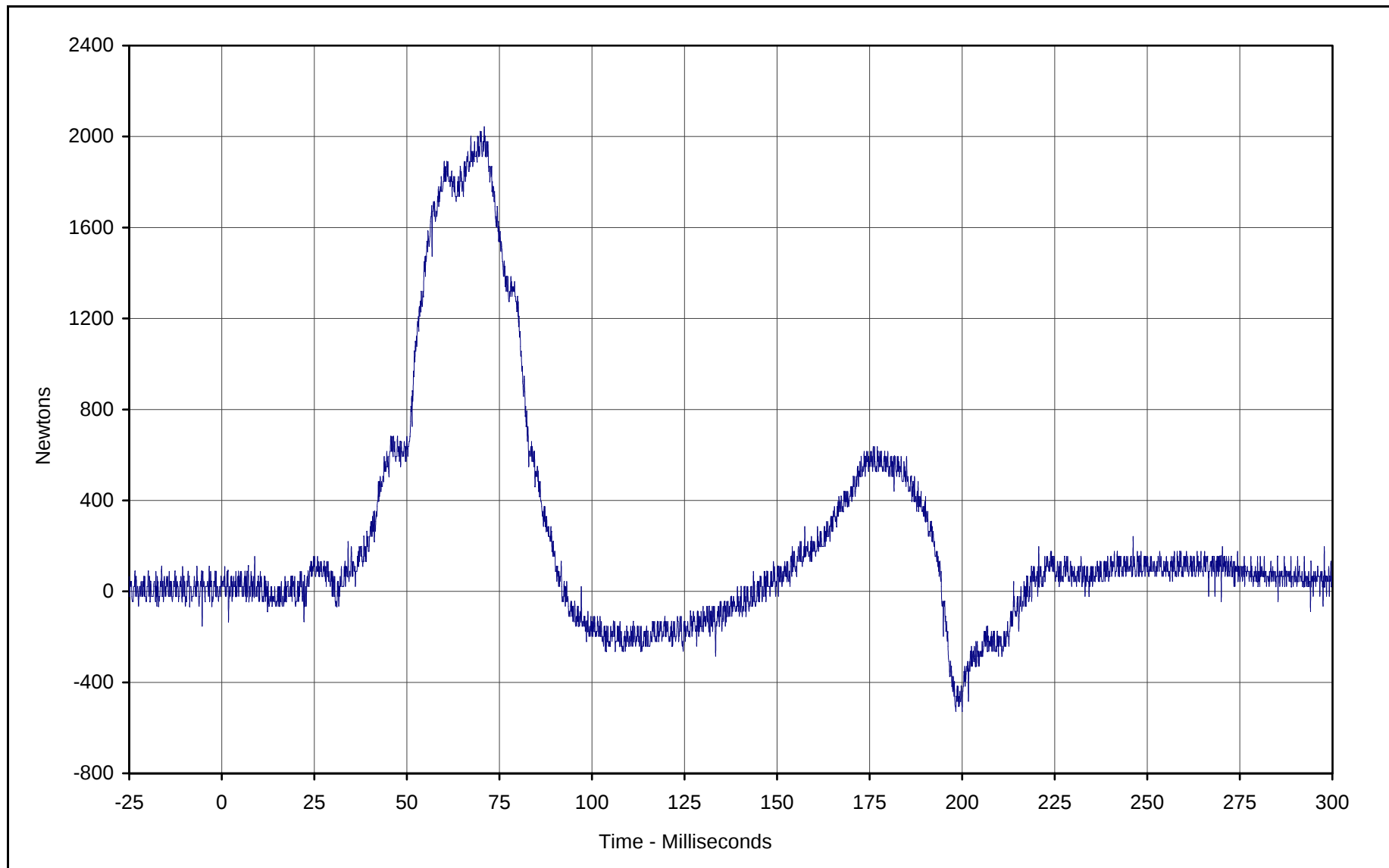




Curve Description: Driver Neck Force Y
Maximum Value: 212.3 at 63.3 Milliseconds
Minimum Value: -275.9 at 114.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-008

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

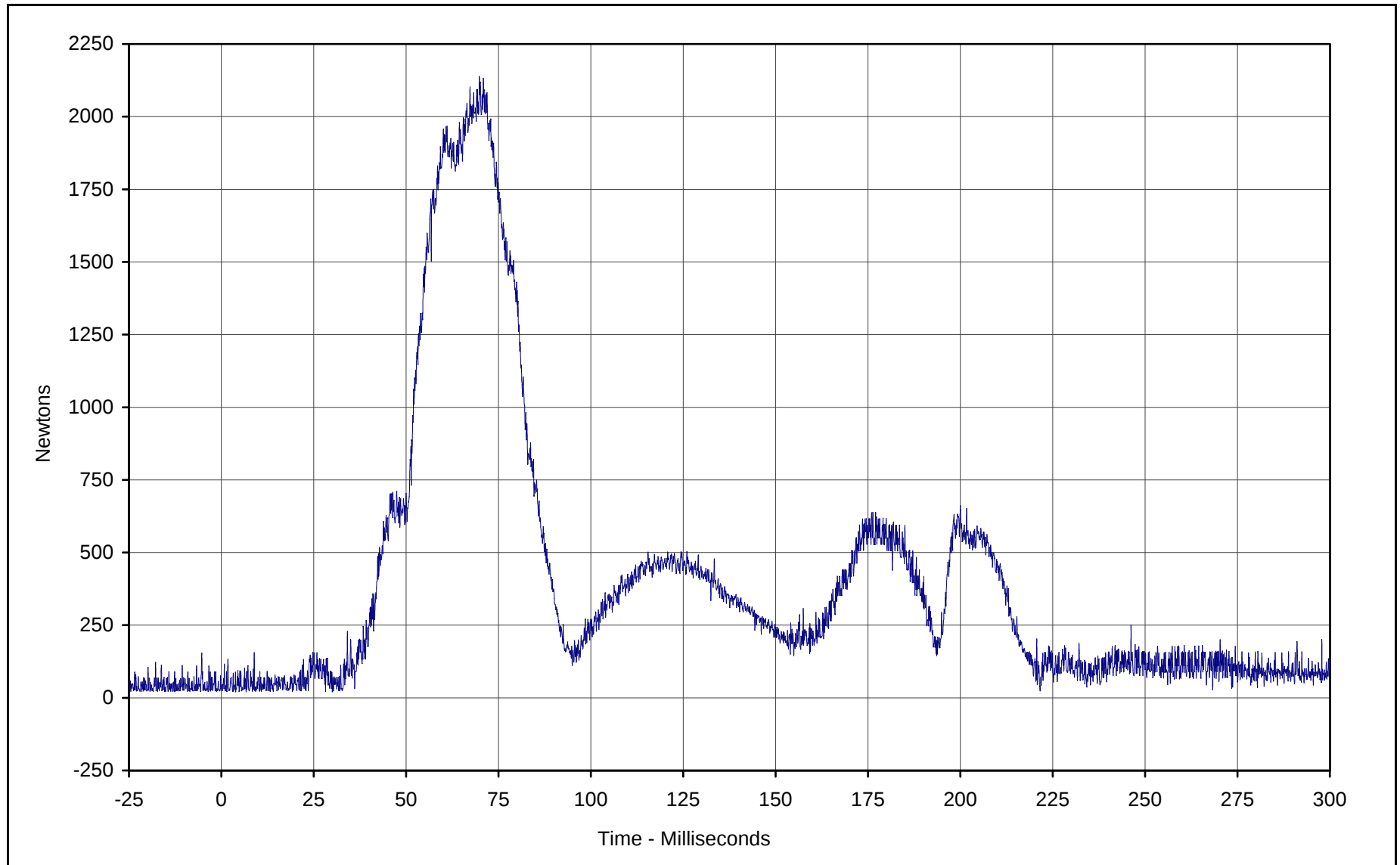




Curve Description: Driver Neck Force Z
Maximum Value: 2044.3 at 70.9 Milliseconds
Minimum Value: -527.6 at 198.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-009

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

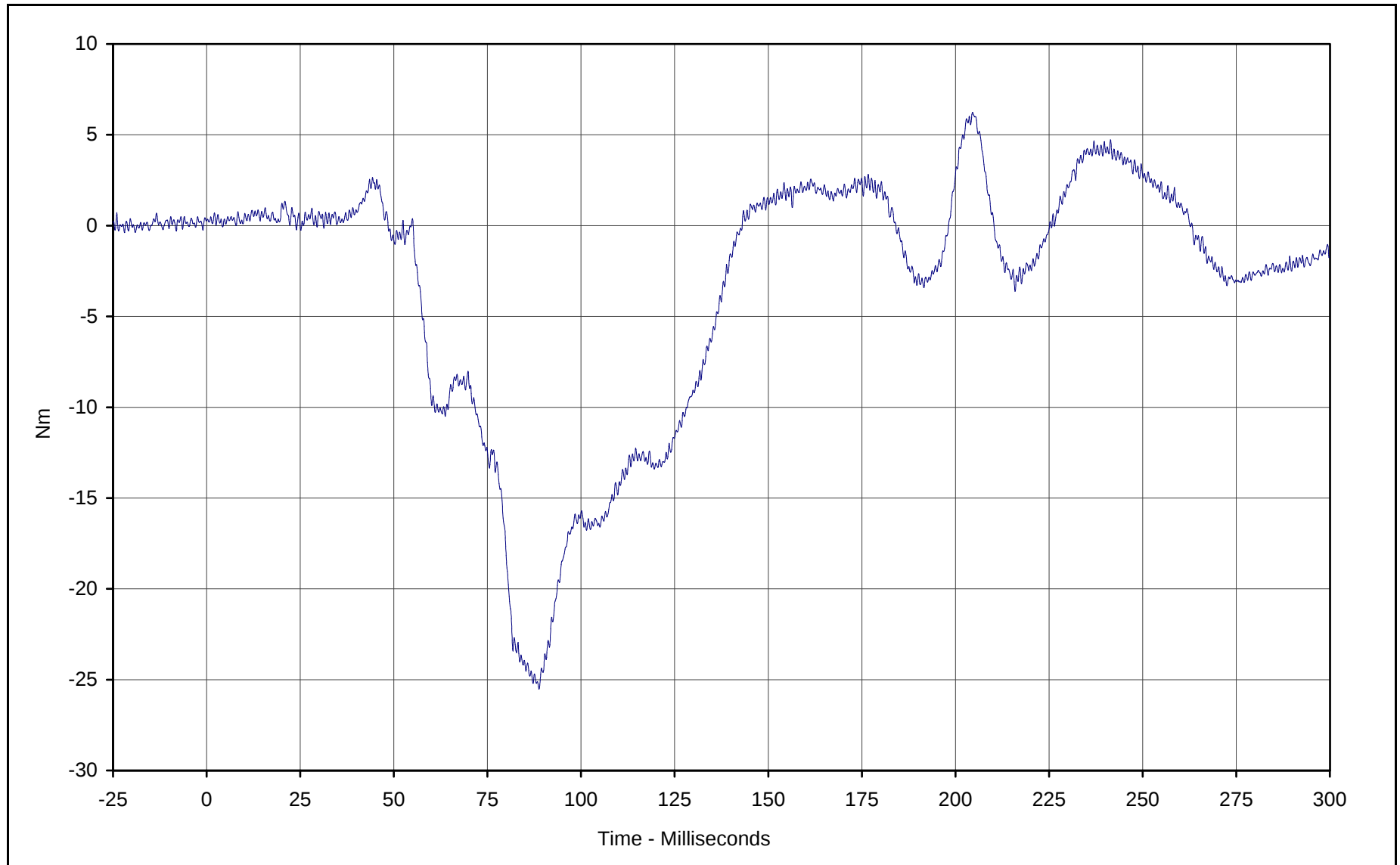




Curve Description: Driver Neck Force Resultant
Maximum Value: 2137.7 at 69.8 Milliseconds
Minimum Value: 22.0 at 1.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-007

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

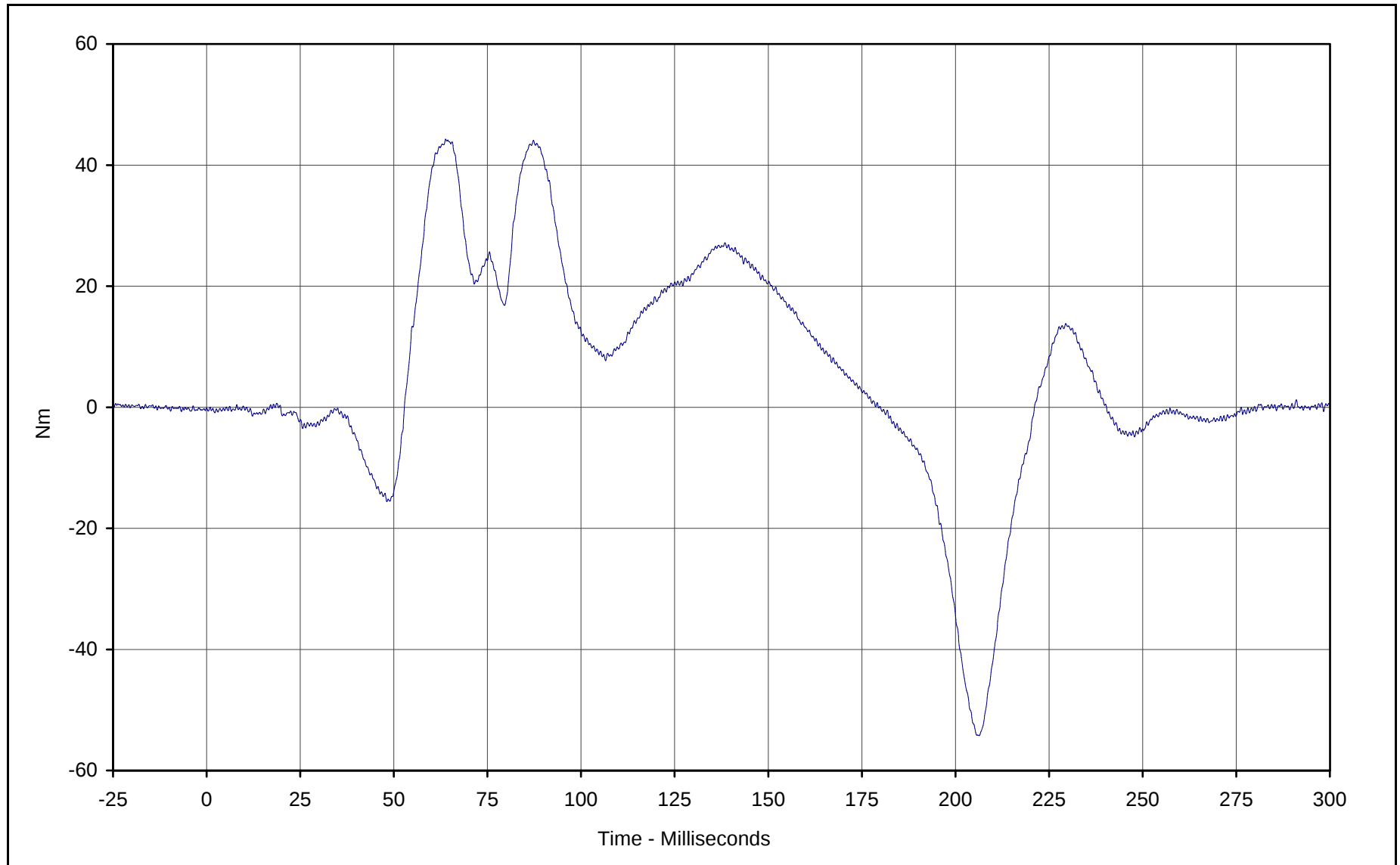




Curve Description: Driver Neck Moment X
Maximum Value: 6.2 at 204.6 Milliseconds
Minimum Value: -25.5 at 88.8 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-010

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

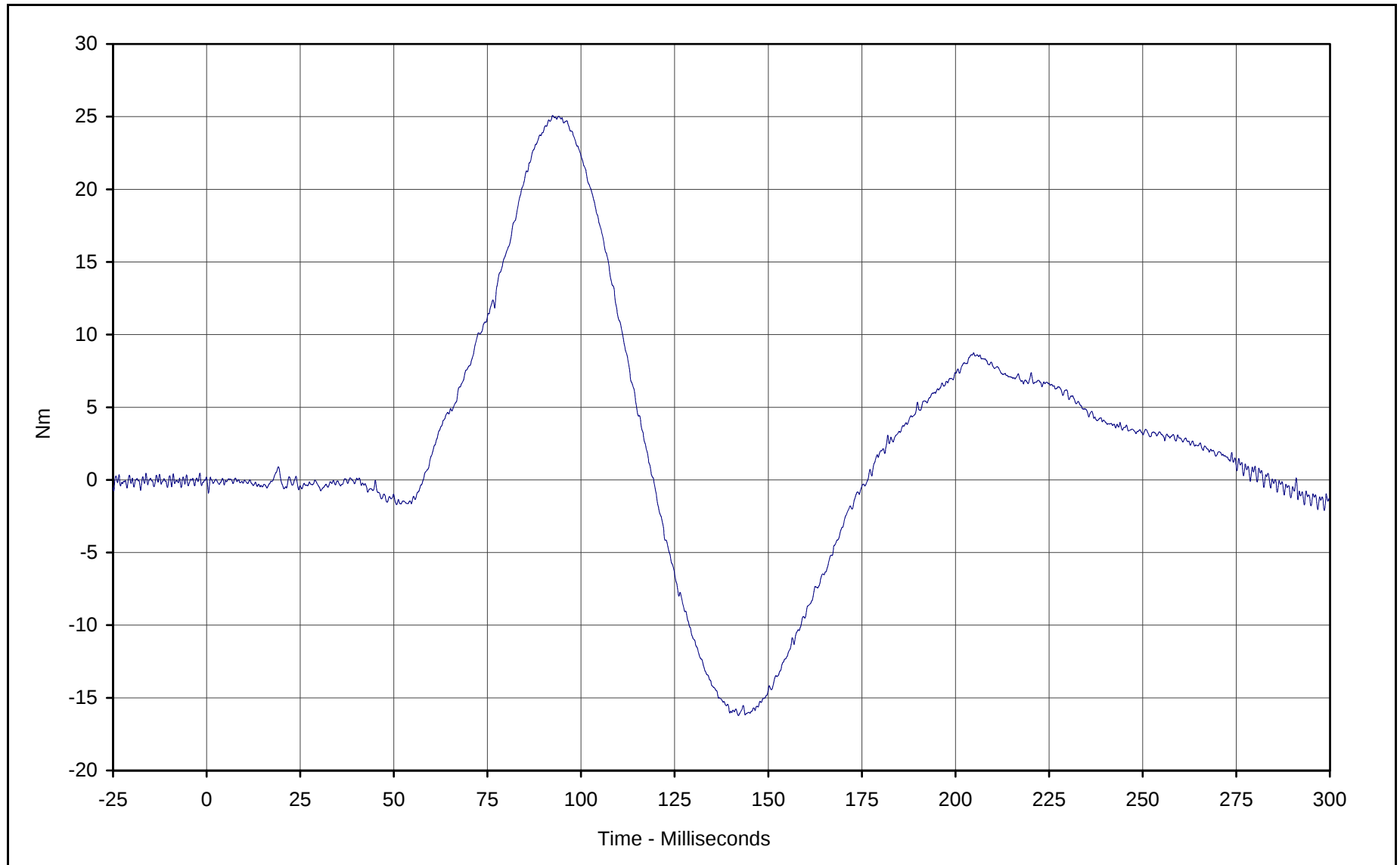




Curve Description: Driver Neck Moment Y
Maximum Value: 44.3 at 63.8 Milliseconds
Minimum Value: -54.2 at 206.4 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-011

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

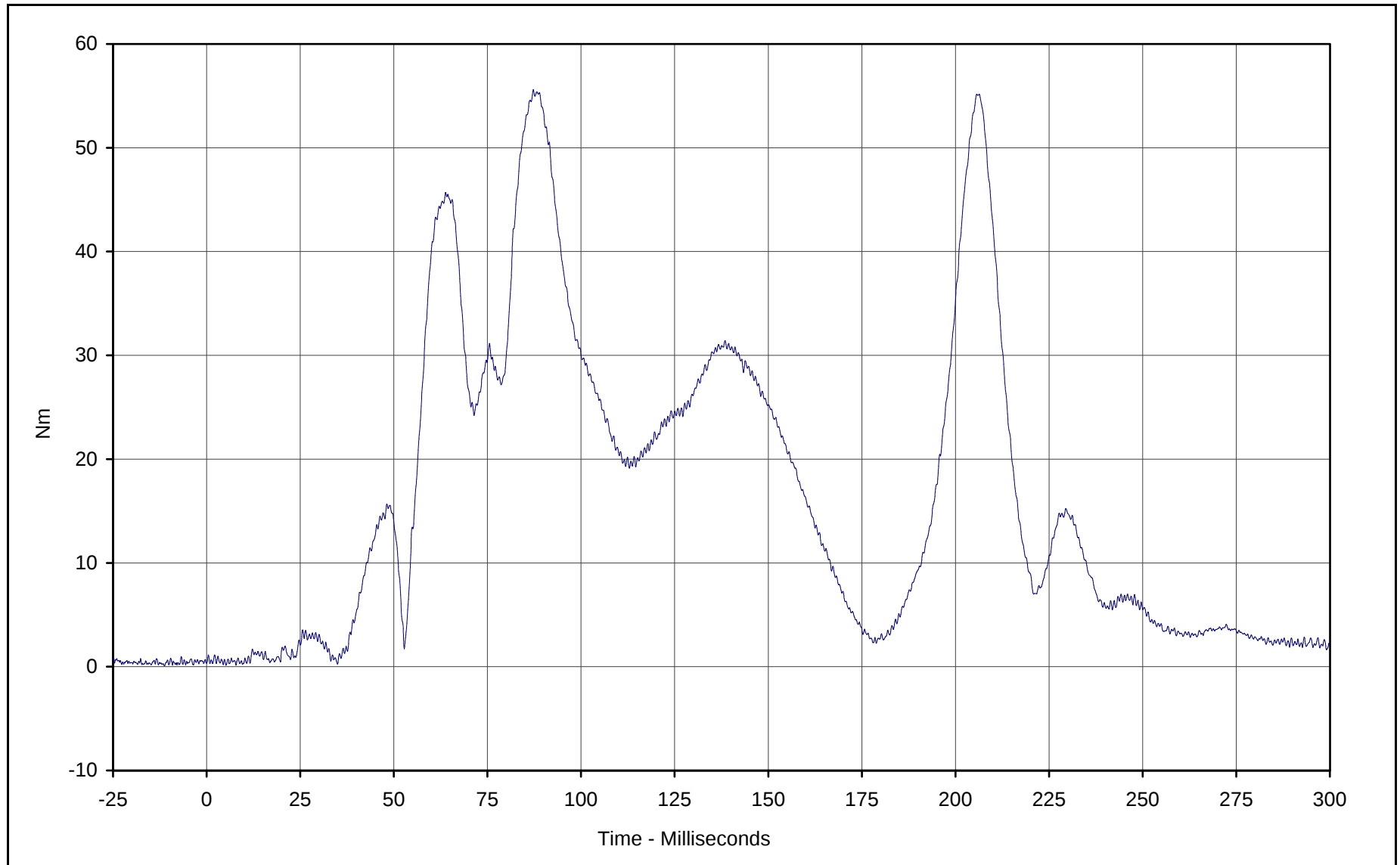




Curve Description: Driver Neck Moment Z
Maximum Value: 25.1 at 92.4 Milliseconds
Minimum Value: -16.2 at 142.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-012

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

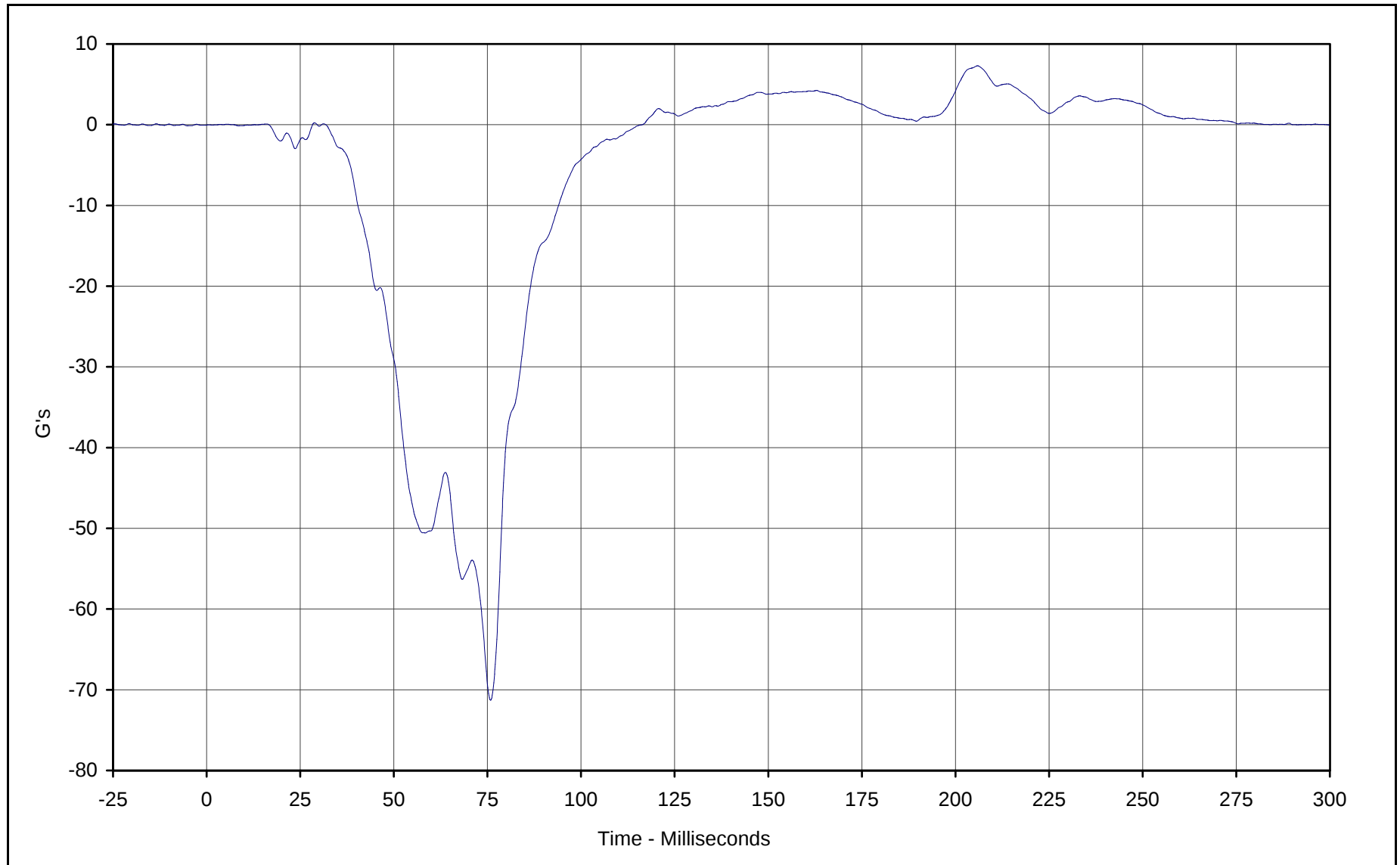




Curve Description: Driver Neck Moment Resultant
Maximum Value: 55.6 at 87.3 Milliseconds
Minimum Value: 0.1 at 5.1 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: RES-010

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



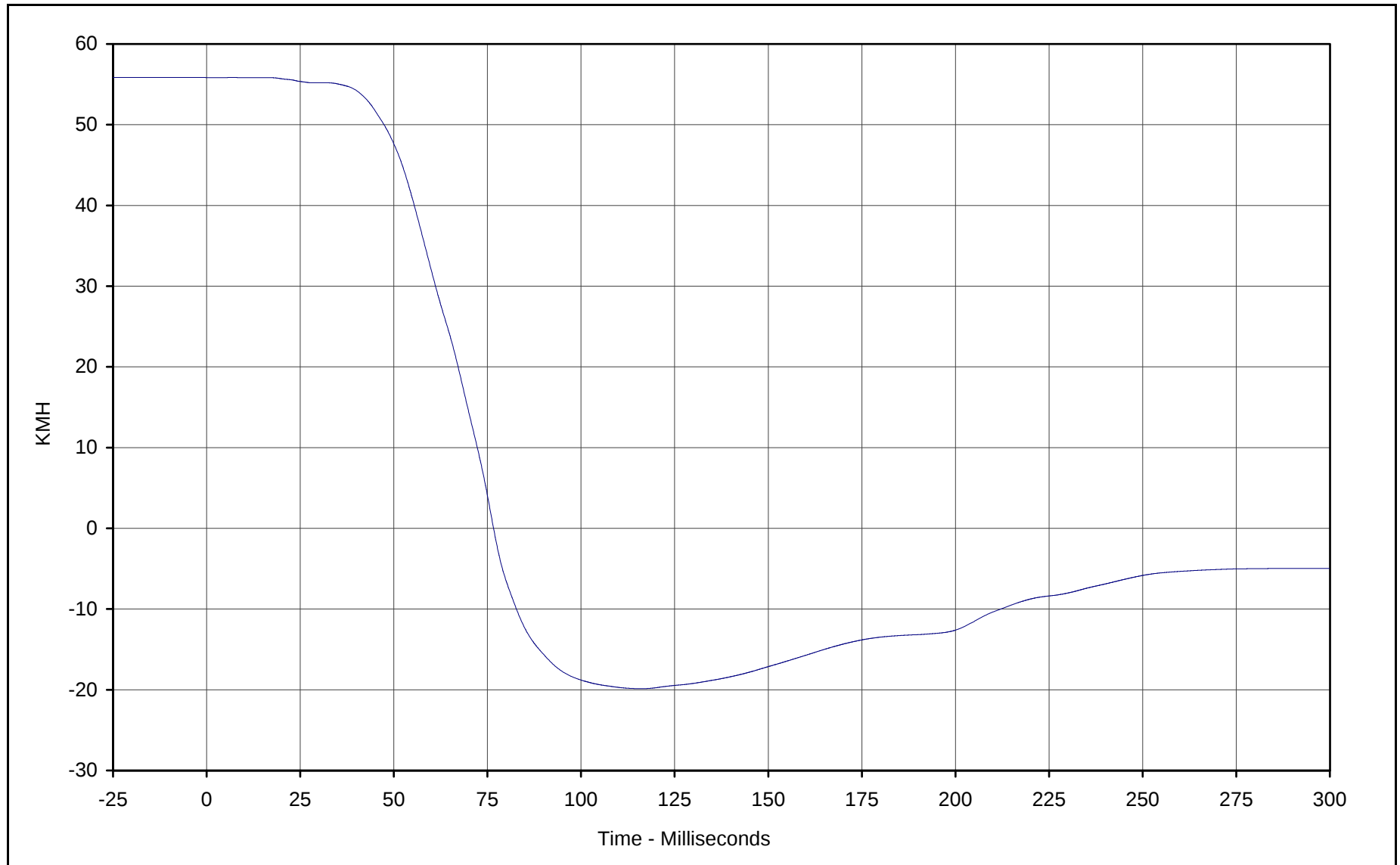


Curve Description: Driver Chest Primary X
Maximum Value: 7.3 at 205.9 Milliseconds
Minimum Value: -71.3 at 75.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-013

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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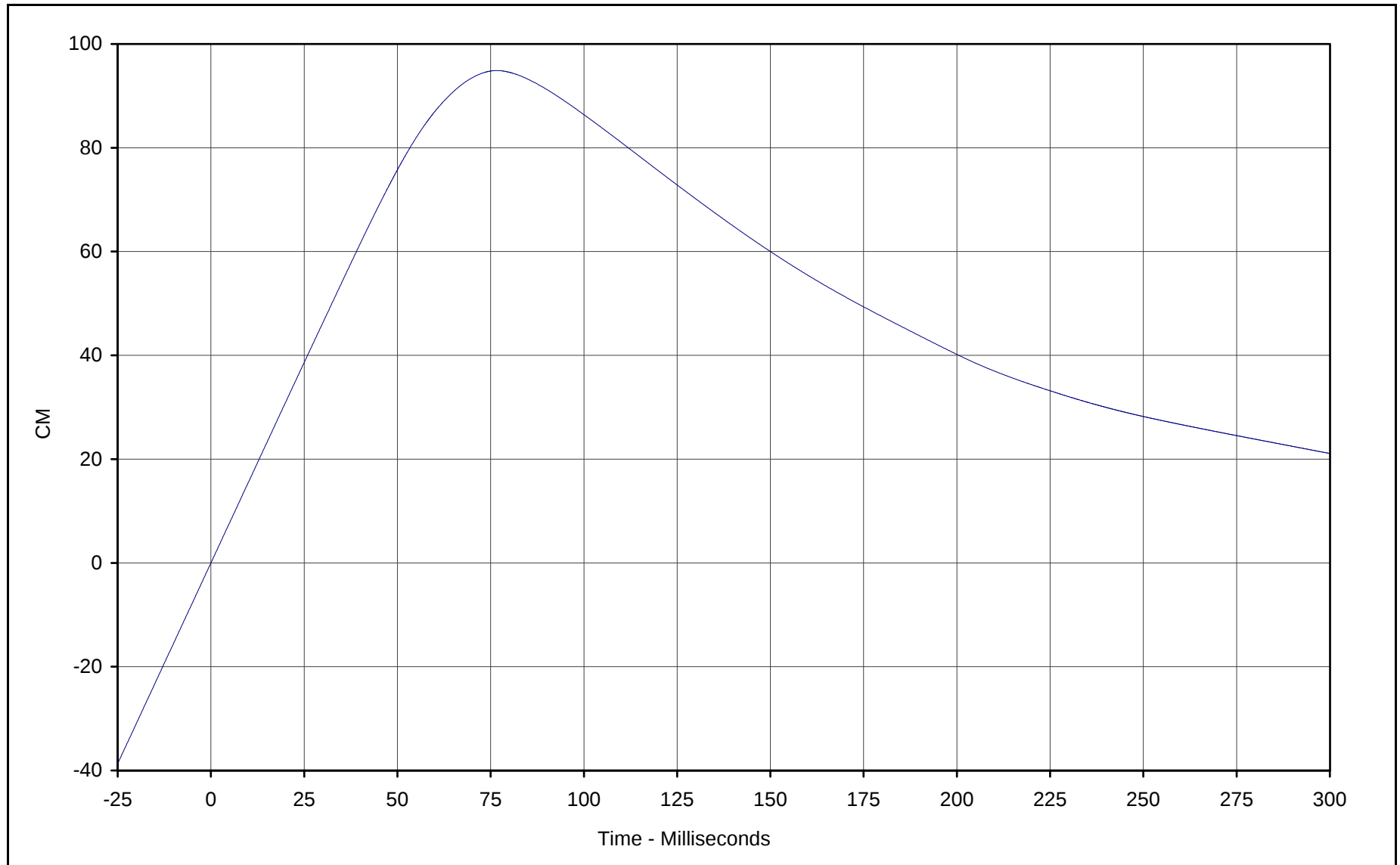


Curve Description: Driver Chest Primary X Velocity
Maximum Value: 55.8 at 7.3 Milliseconds
Minimum Value: -19.9 at 116.3 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-013

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



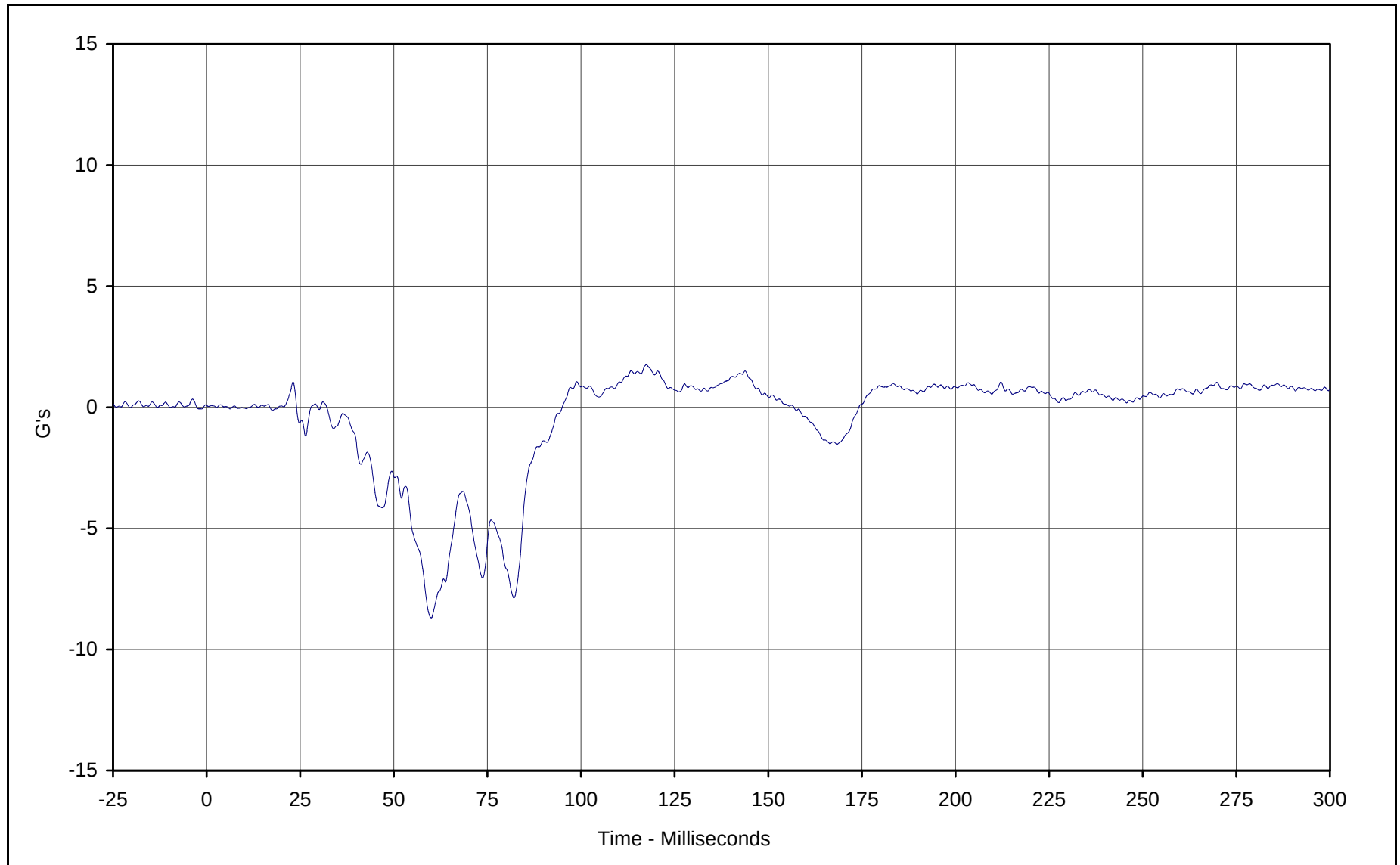
KAR22001-02



Curve Description: Driver Chest Primary X Displ.
Maximum Value: 94.9 at 76.6 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-013

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



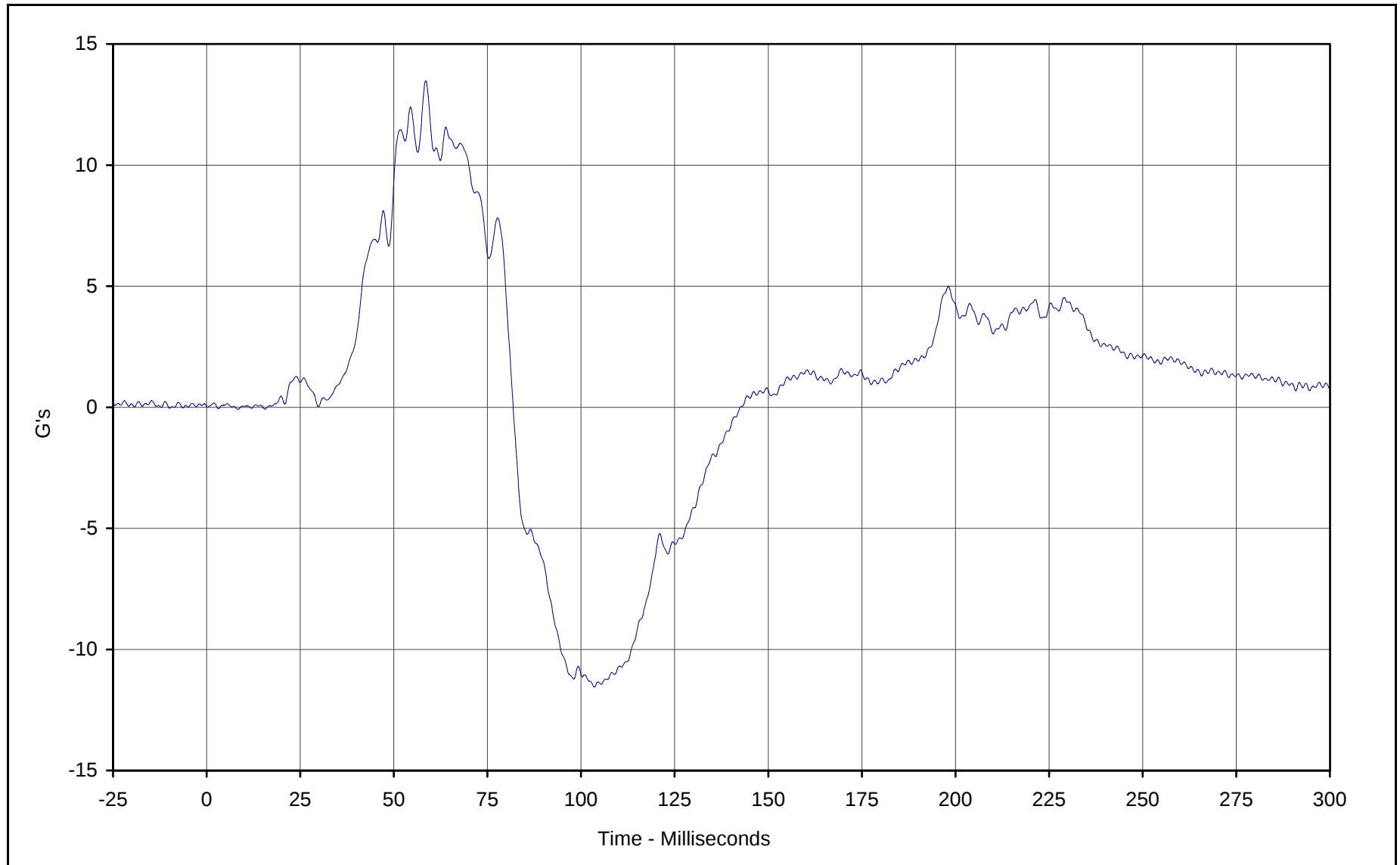


Curve Description: Driver Chest Primary Y
Maximum Value: 1.8 at 117.4 Milliseconds
Minimum Value: -8.7 at 60.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-014

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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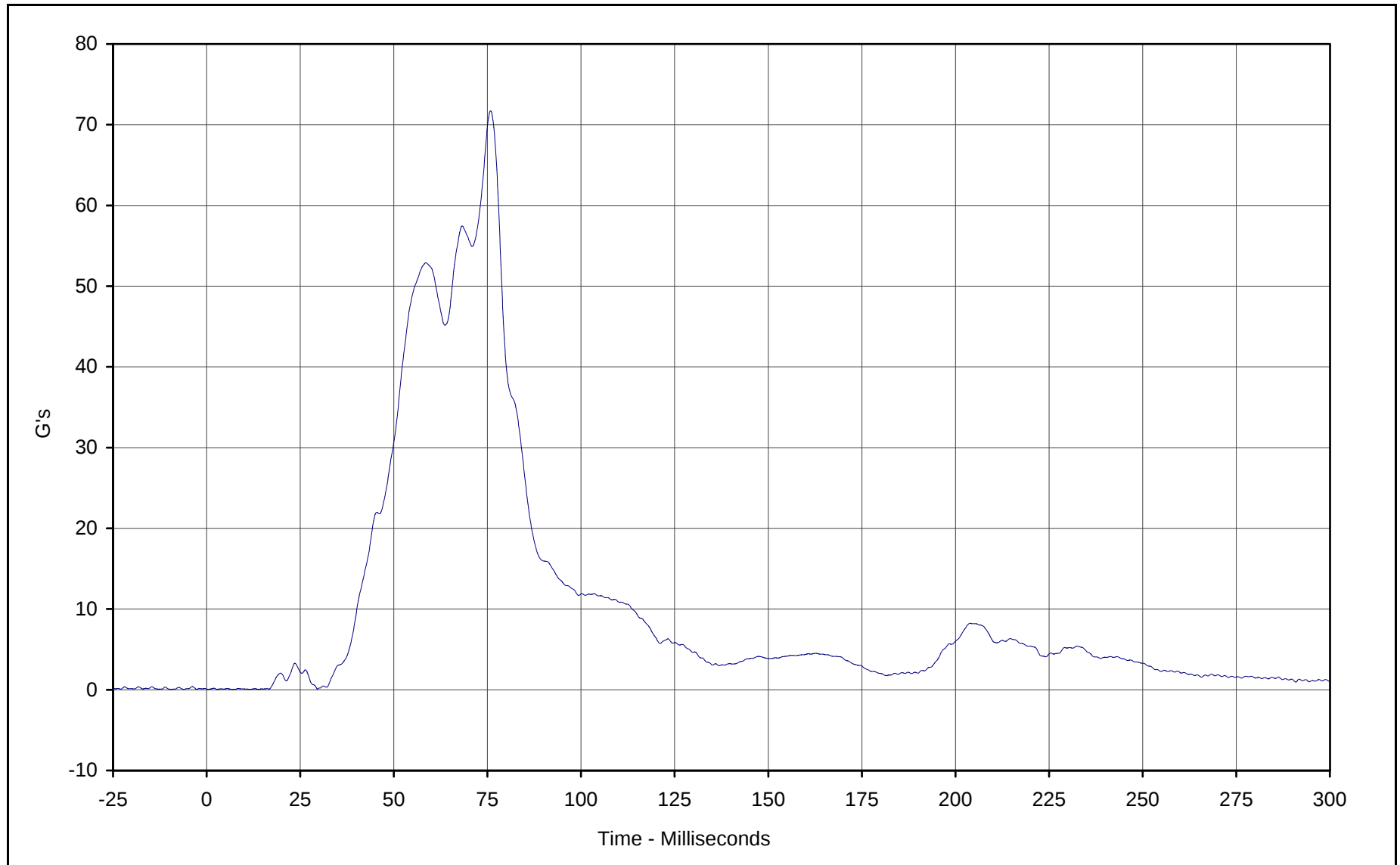


Curve Description: Driver Chest Primary Z
Maximum Value: 13.5 at 58.5 Milliseconds
Minimum Value: -11.6 at 103.6 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-015

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



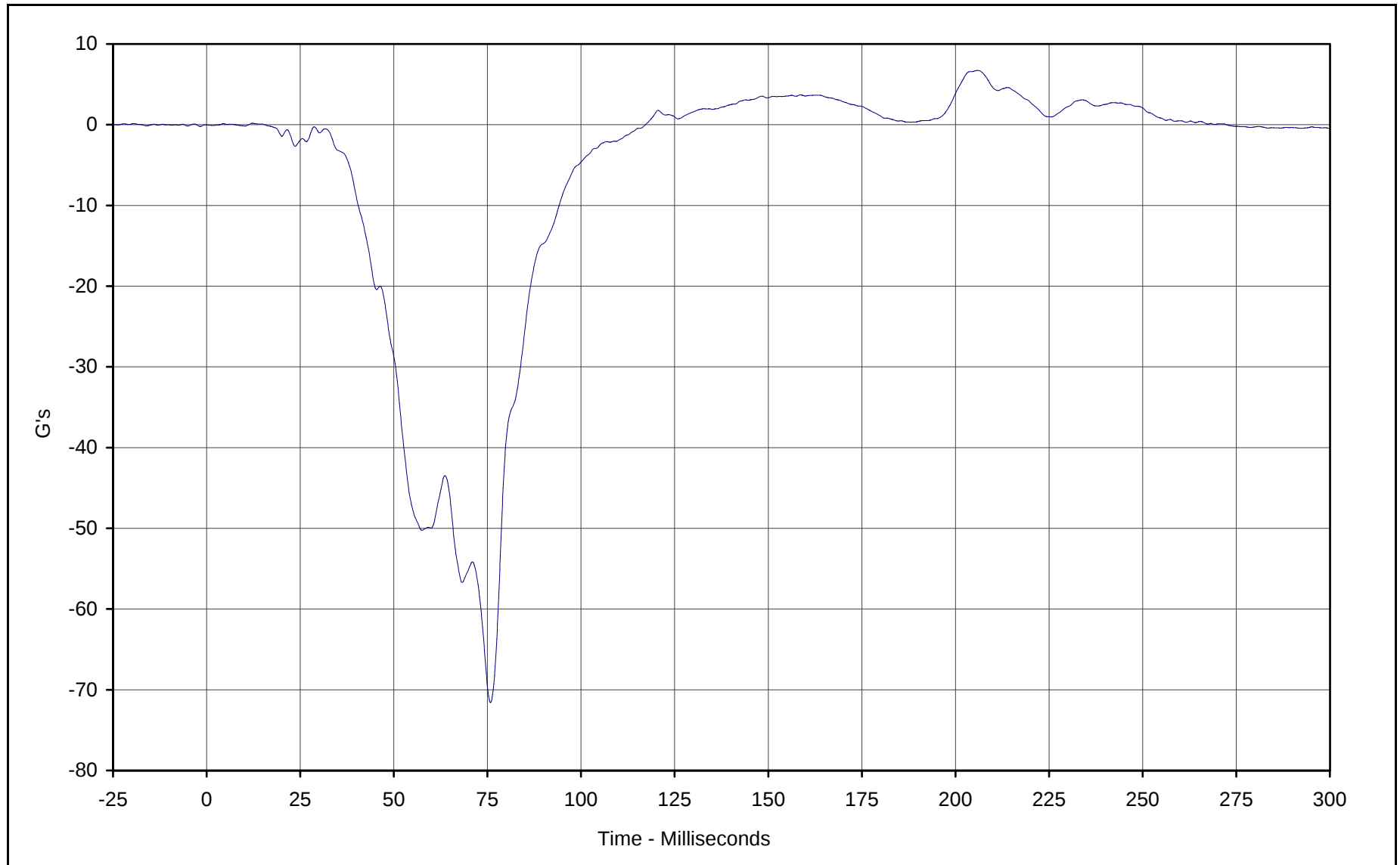
KAR22001-02



Curve Description: Driver Chest Resultant Primary
Maximum Value: 71.7 at 75.8 Milliseconds
Minimum Value: 0.0 at 2.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: RES-013

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

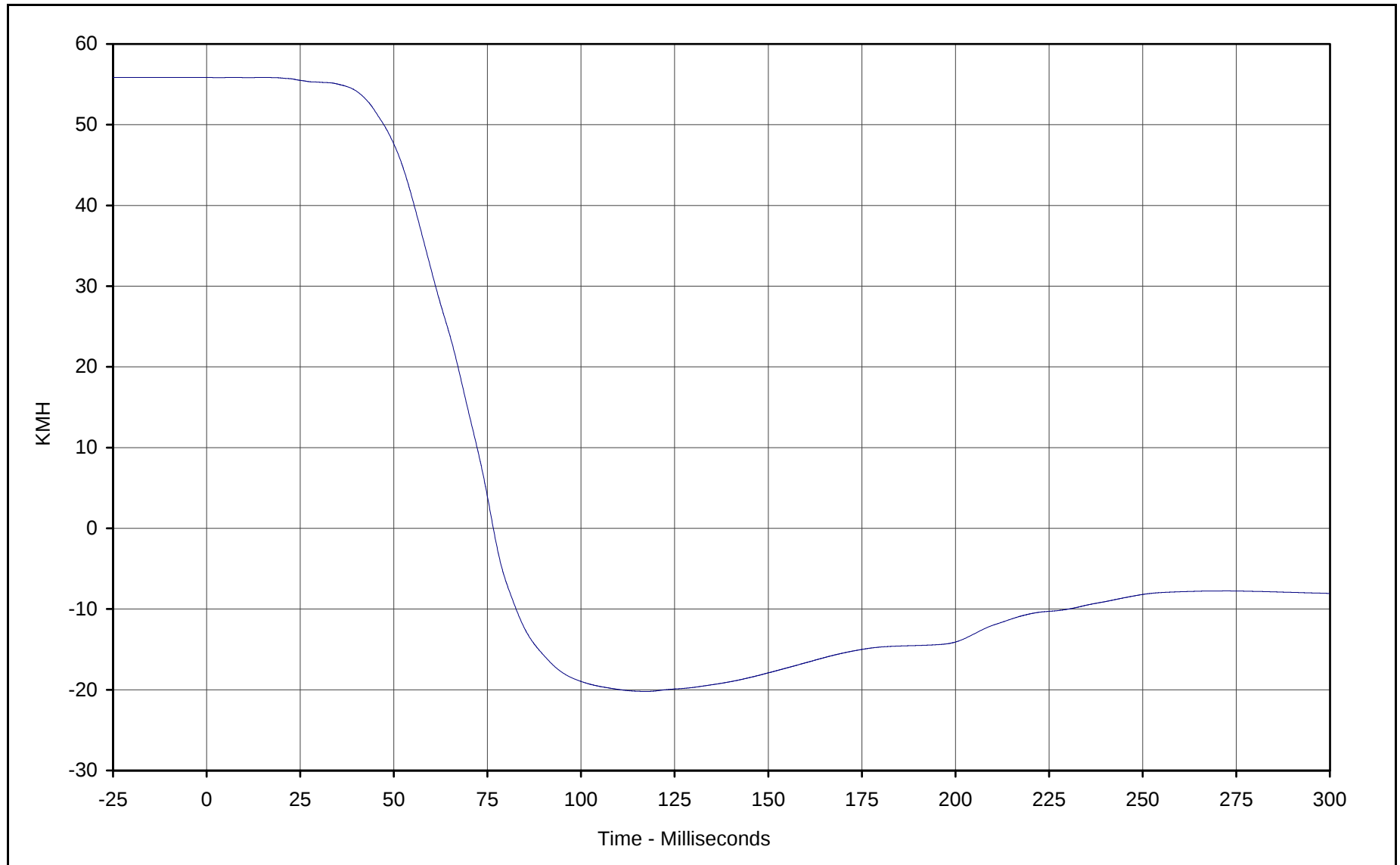




Curve Description: Driver Chest Redundant X
Maximum Value: 6.7 at 206.0 Milliseconds
Minimum Value: -71.6 at 75.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-016

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



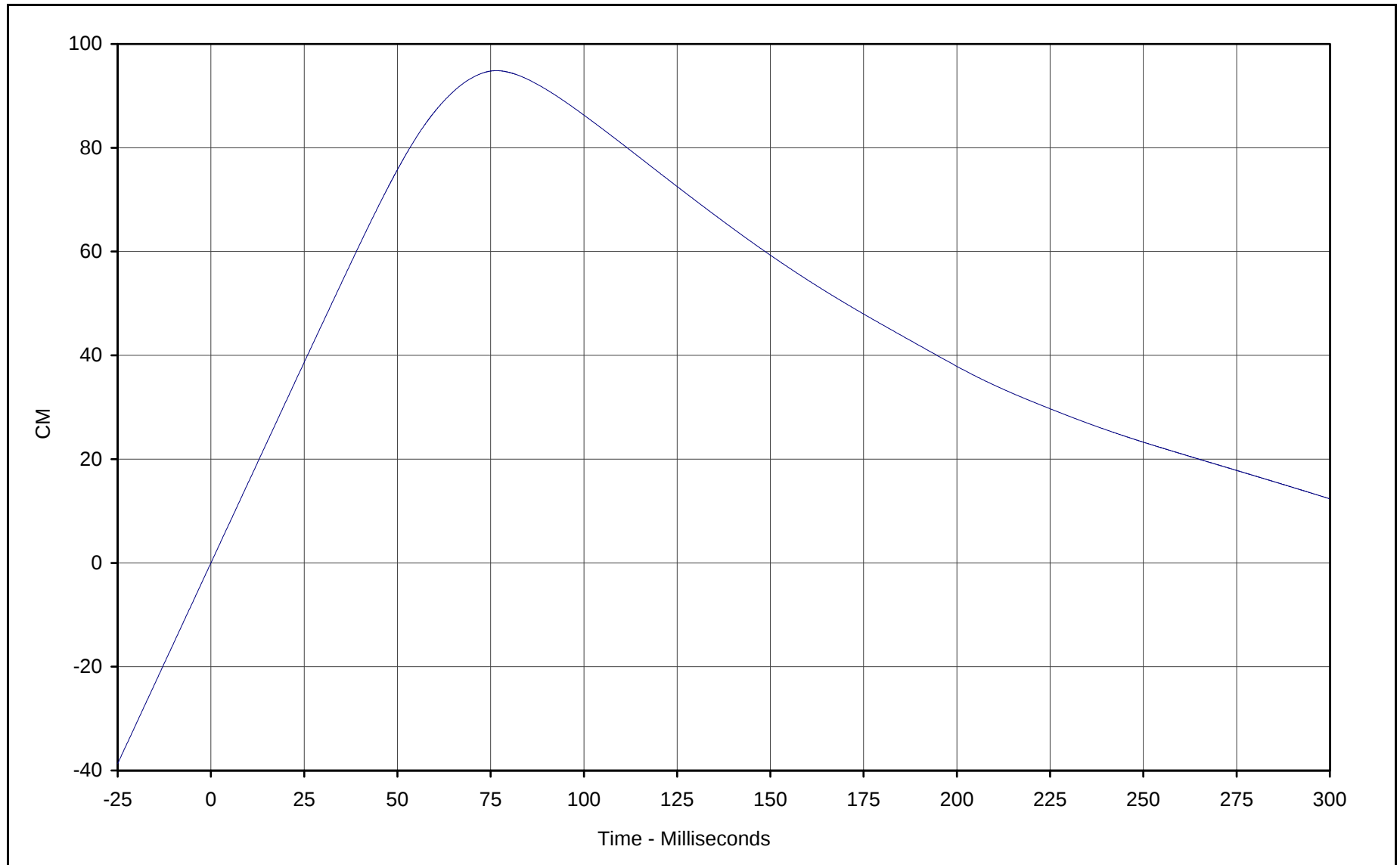


Curve Description: Driver Chest Redundant X Velocity
Maximum Value: 55.8 at 15.5 Milliseconds
Minimum Value: -20.2 at 117.2 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-016

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



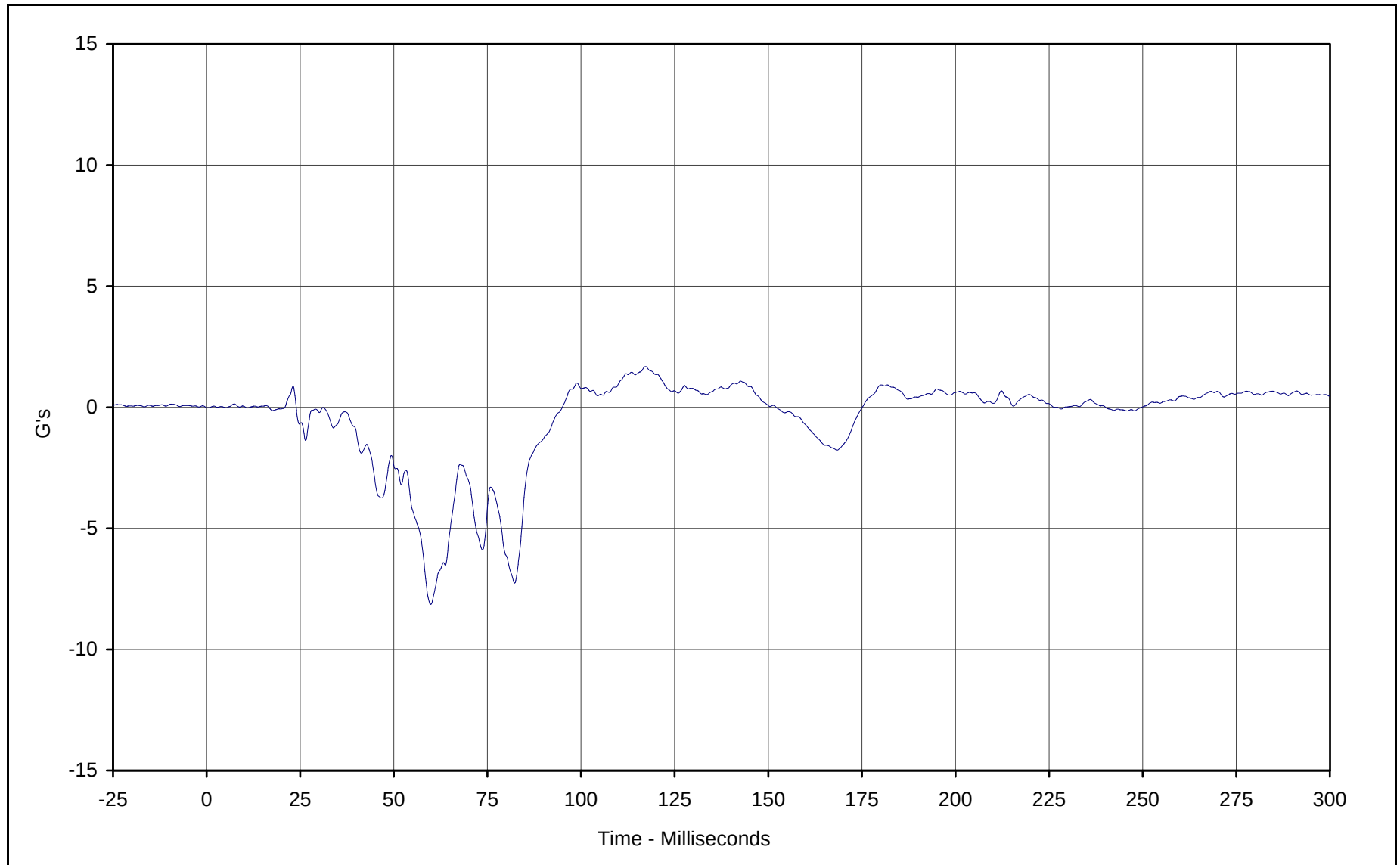


Curve Description: Driver Chest Redundant X Displ.
Maximum Value: 94.9 at 76.6 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-016

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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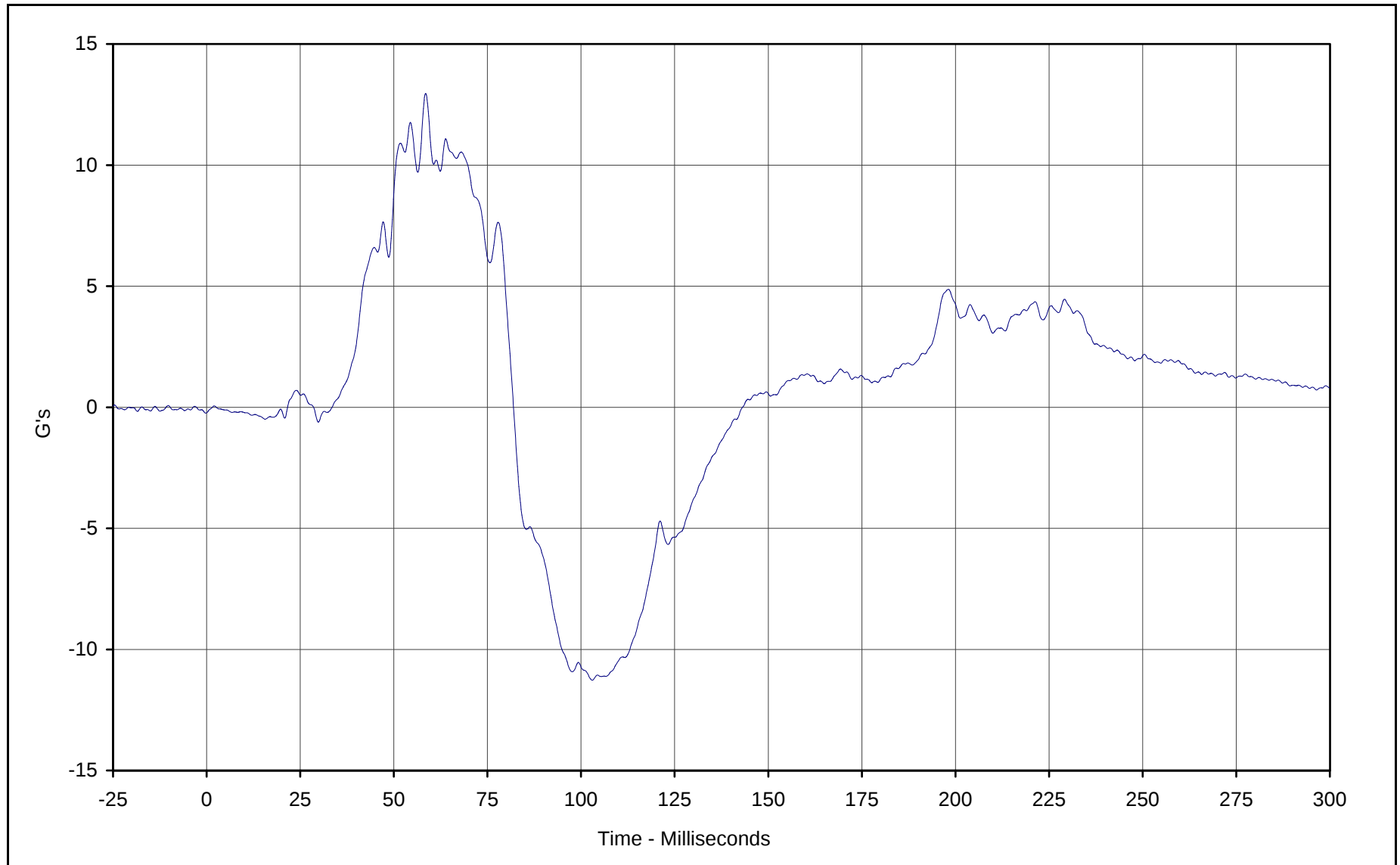


Curve Description: Driver Chest Redundant Y
Maximum Value: 1.7 at 117.2 Milliseconds
Minimum Value: -8.1 at 59.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-017

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



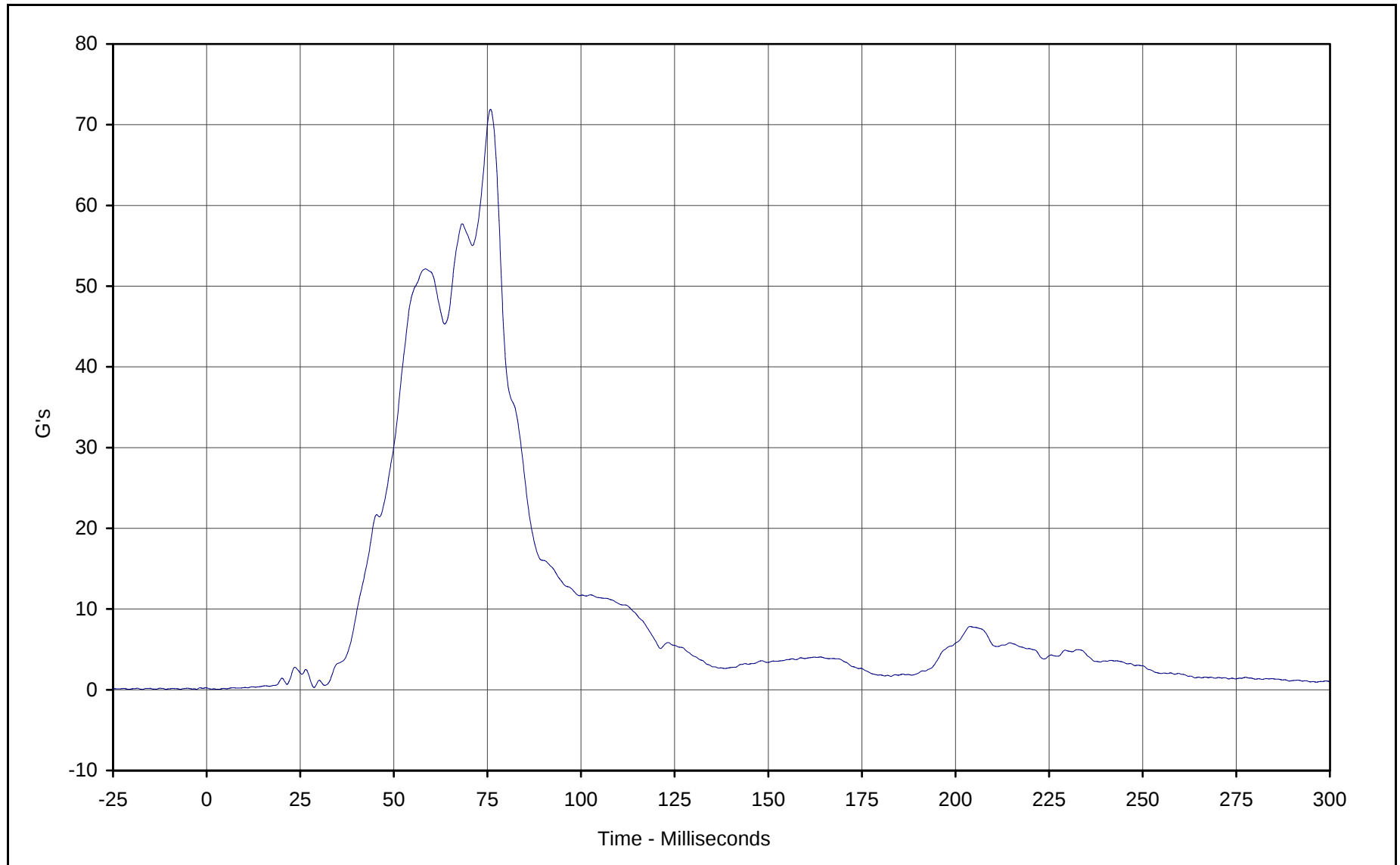
KAR22001-02



Curve Description: Driver Chest Redundant Z
Maximum Value: 13.0 at 58.5 Milliseconds
Minimum Value: -11.3 at 103.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-018

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

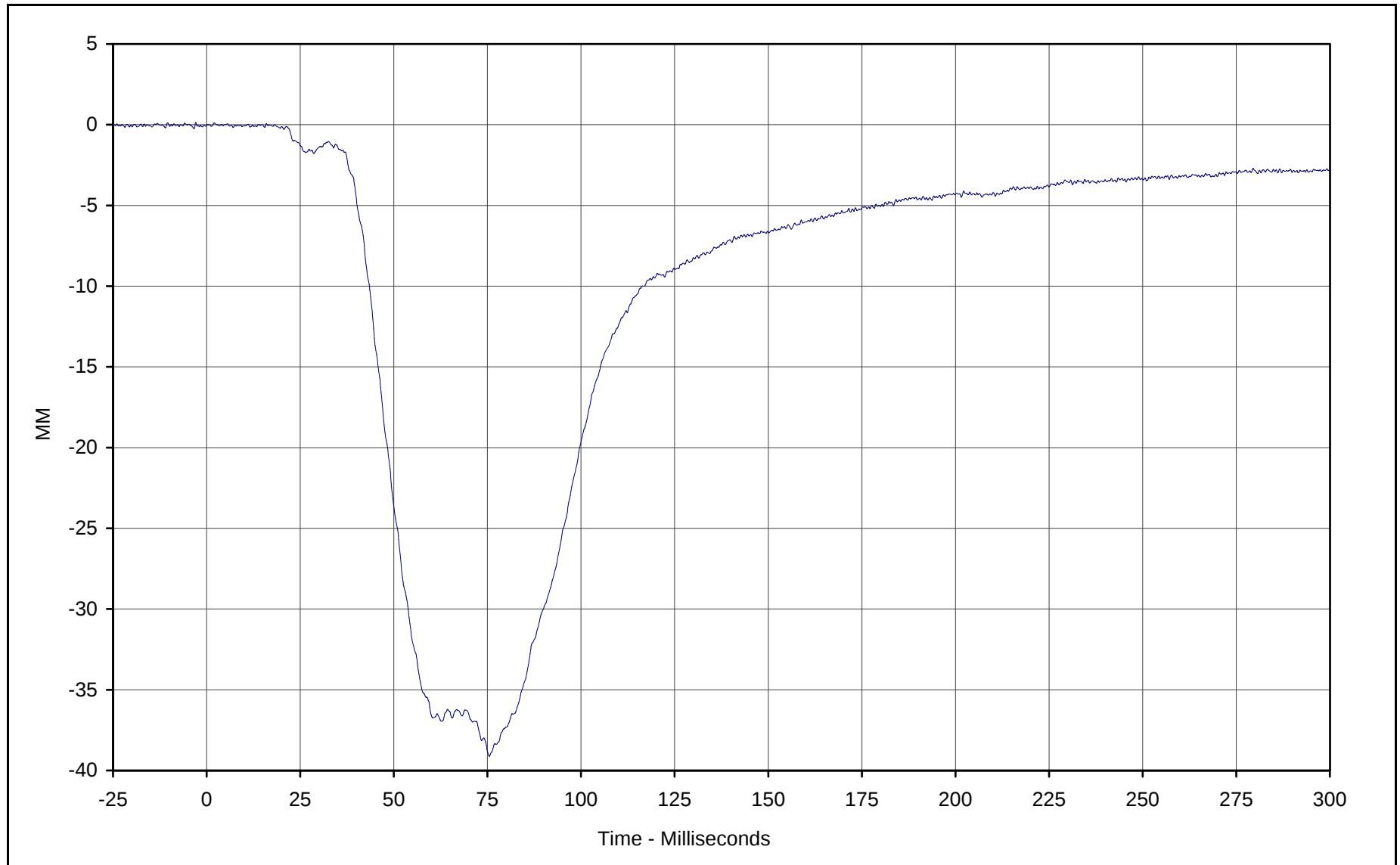




Curve Description: Driver Chest Resultant Redundant
Maximum Value: 71.9 at 75.8 Milliseconds
Minimum Value: 0.1 at 2.7 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: RES-016

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

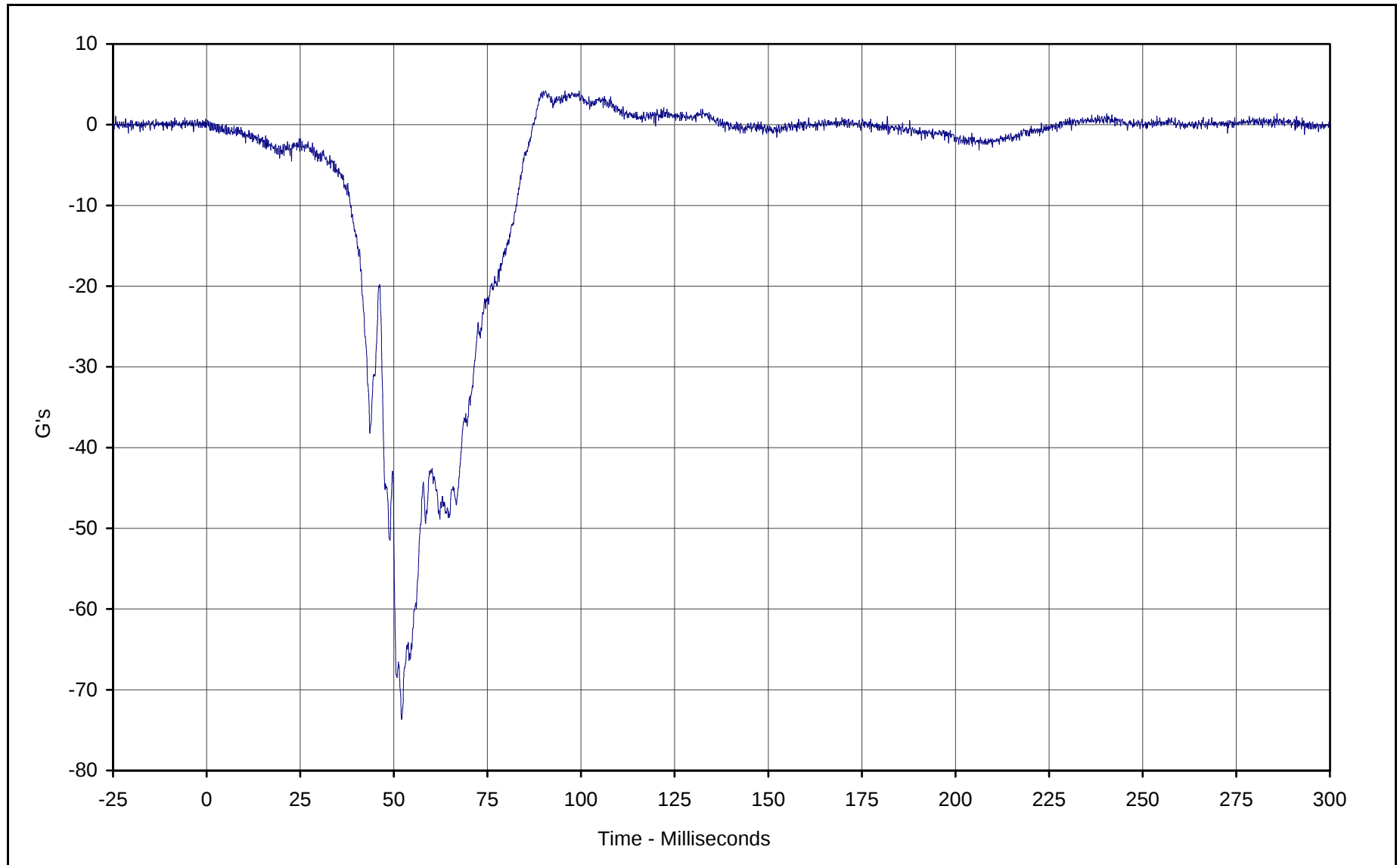




Curve Description: Driver Chest Displacement X
Maximum Value: 0.1 at 2.1 Milliseconds
Minimum Value: -39.1 at 75.5 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-019

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



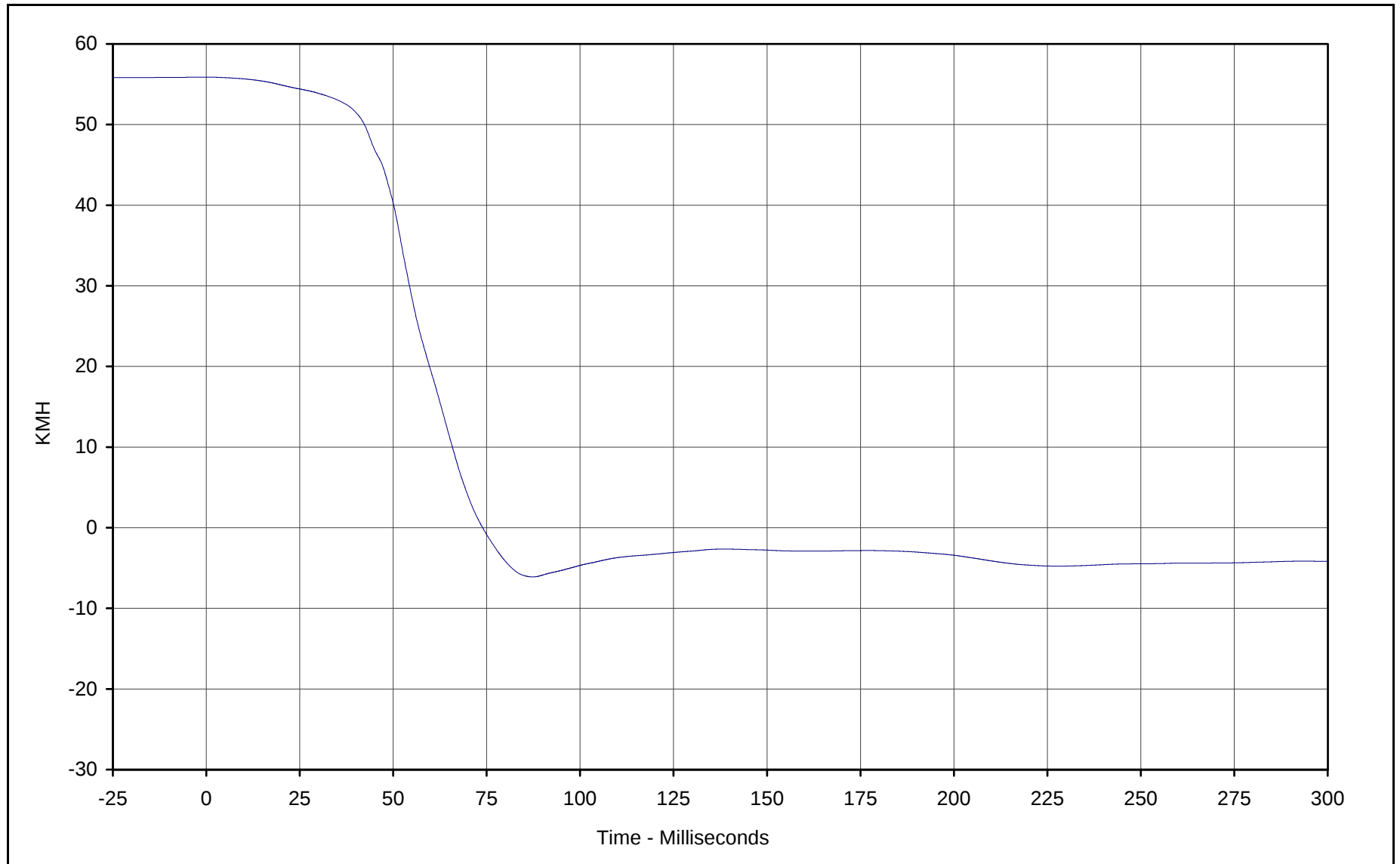


Curve Description: Driver Pelvis X
Maximum Value: 4.2 at 89.9 Milliseconds
Minimum Value: -73.7 at 52.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-020

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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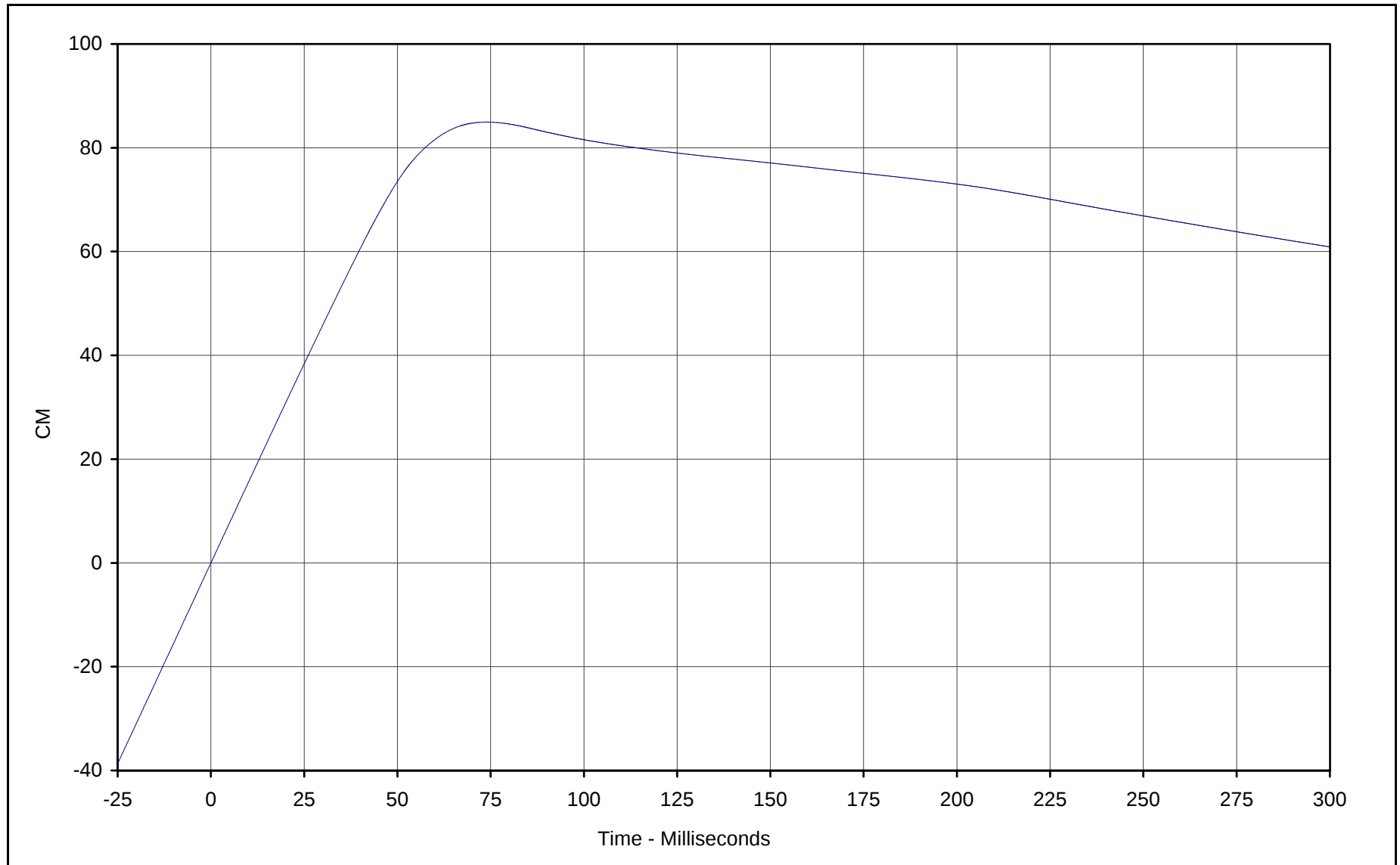


Curve Description: Driver Pelvis X Velocity
Maximum Value: 55.9 at 0.5 Milliseconds
Minimum Value: -6.1 at 87.3 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-020

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



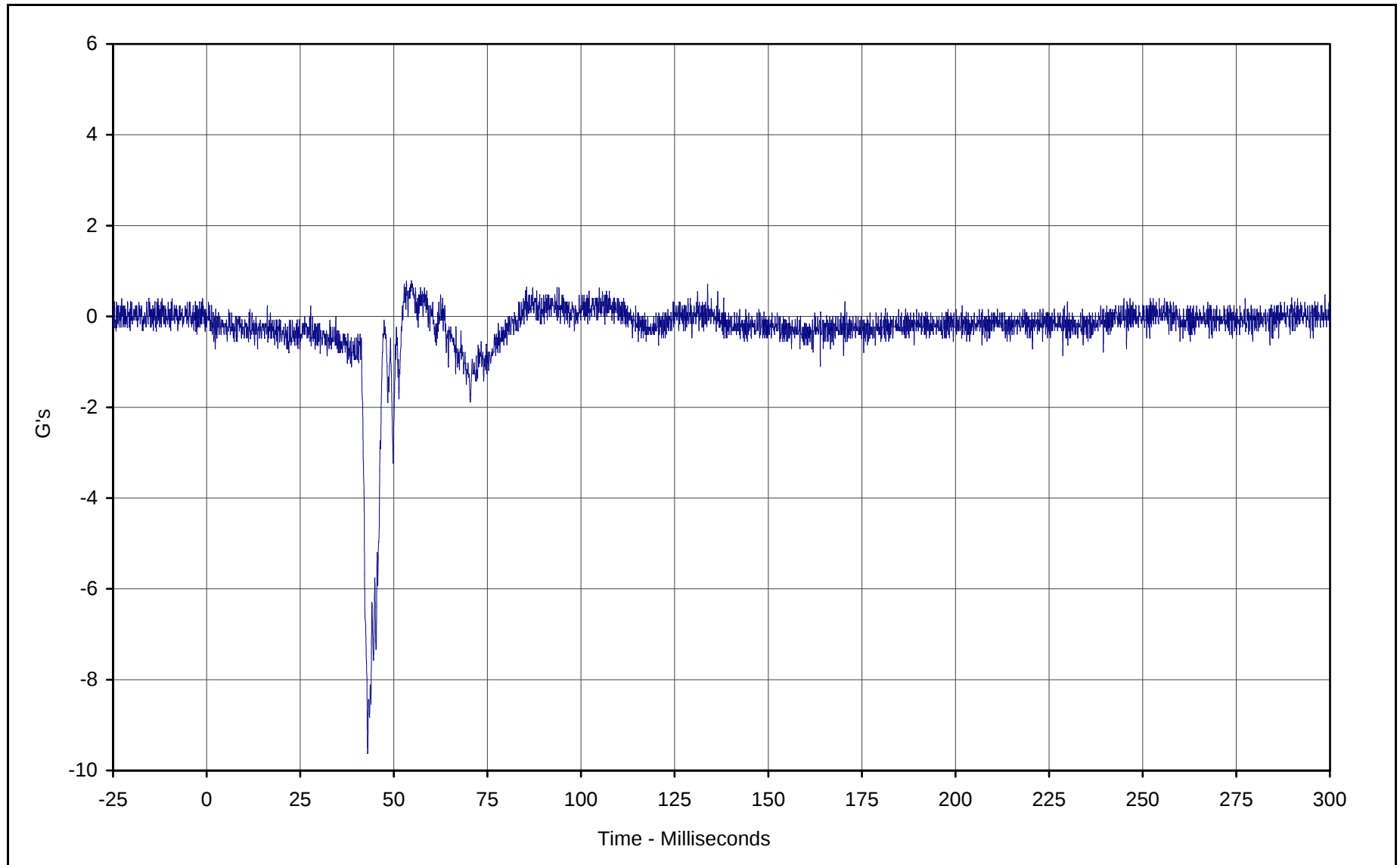
KAR22001-02



Curve Description: Driver Pelvis X Displ.
Maximum Value: 84.9 at 73.9 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-020

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

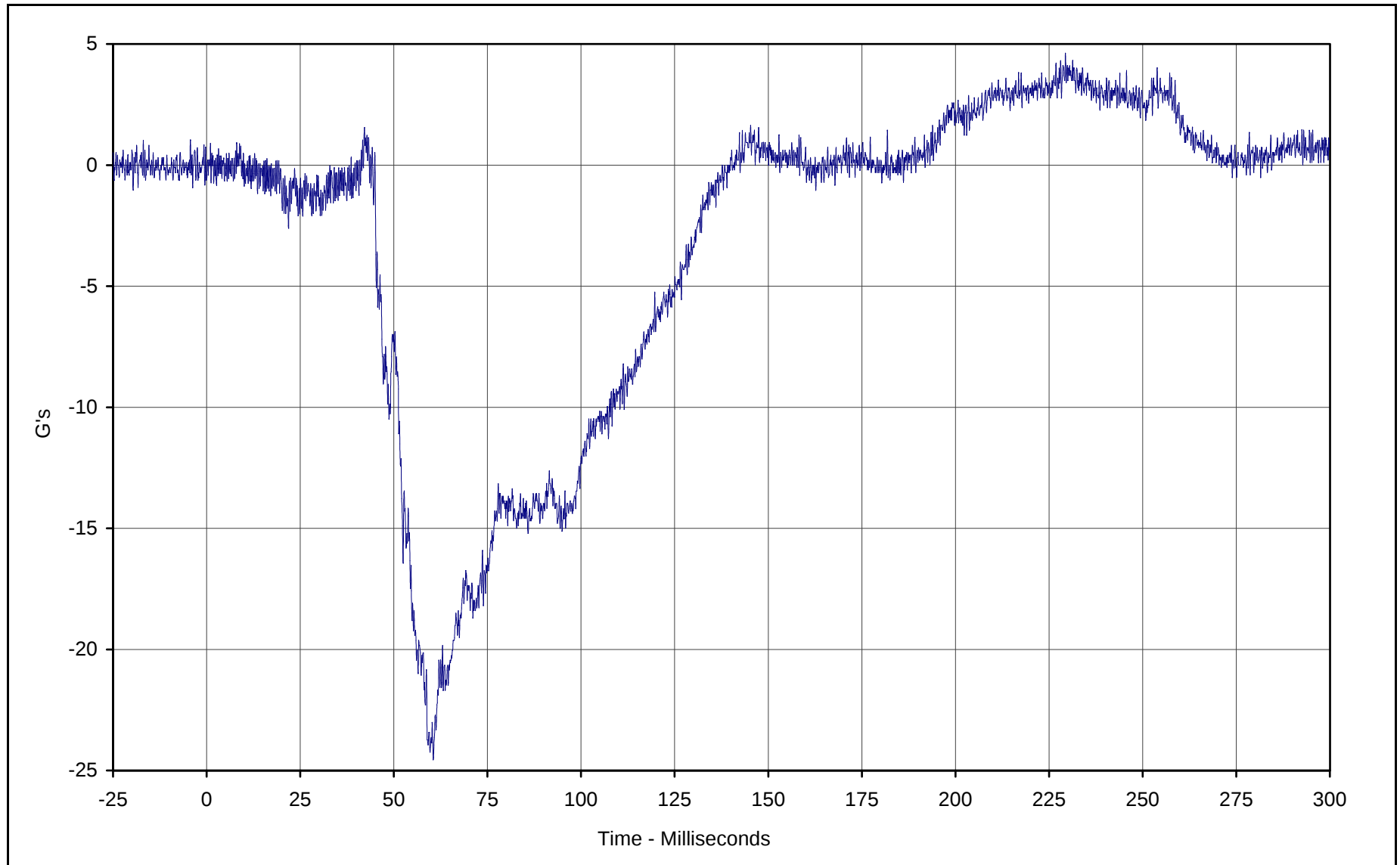




Curve Description: Driver Pelvis Y
Maximum Value: 0.8 at 53.4 Milliseconds
Minimum Value: -9.6 at 43.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-021

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

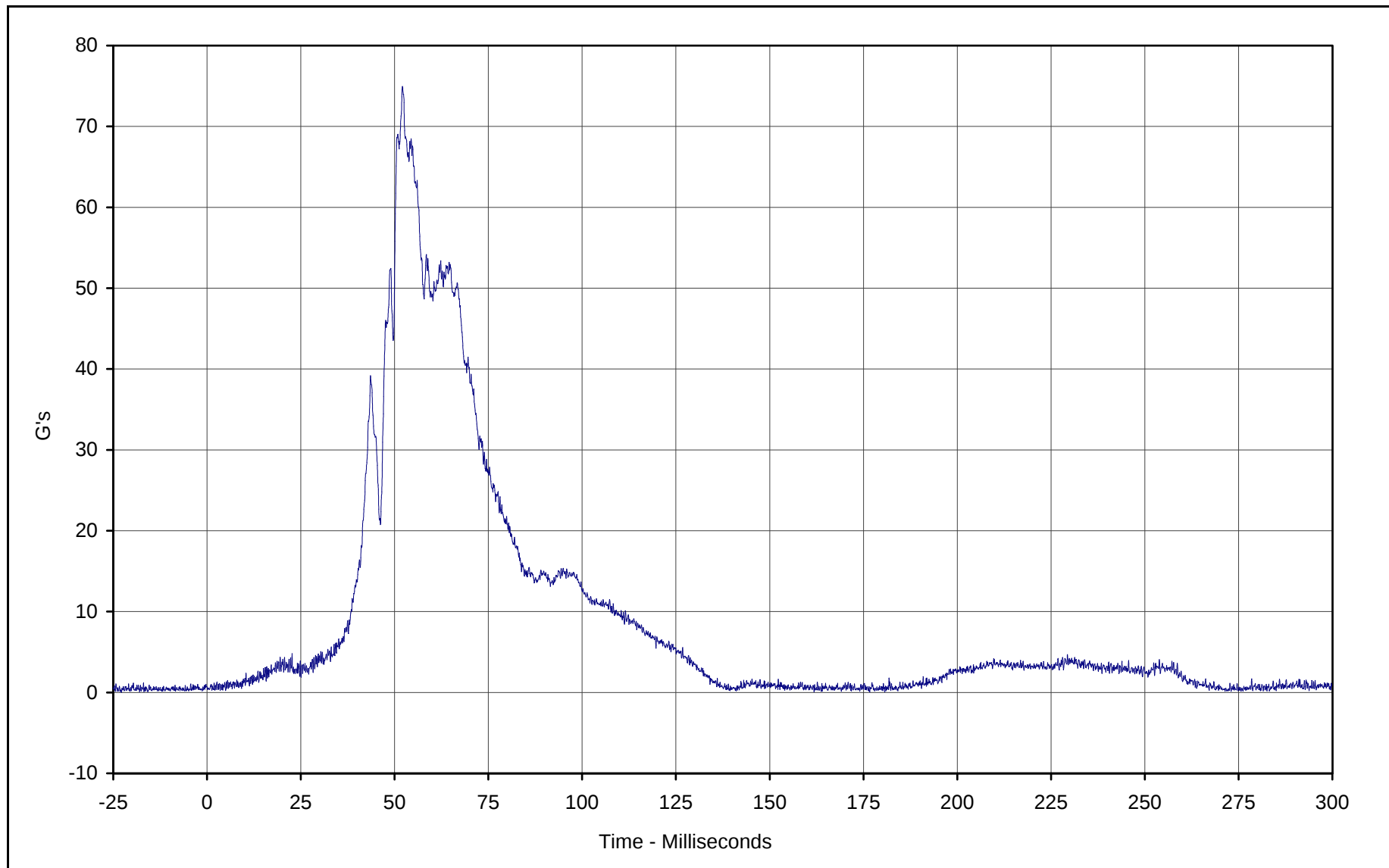




Curve Description: Driver Pelvis Z
Maximum Value: 4.6 at 229.4 Milliseconds
Minimum Value: -24.6 at 60.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-022

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



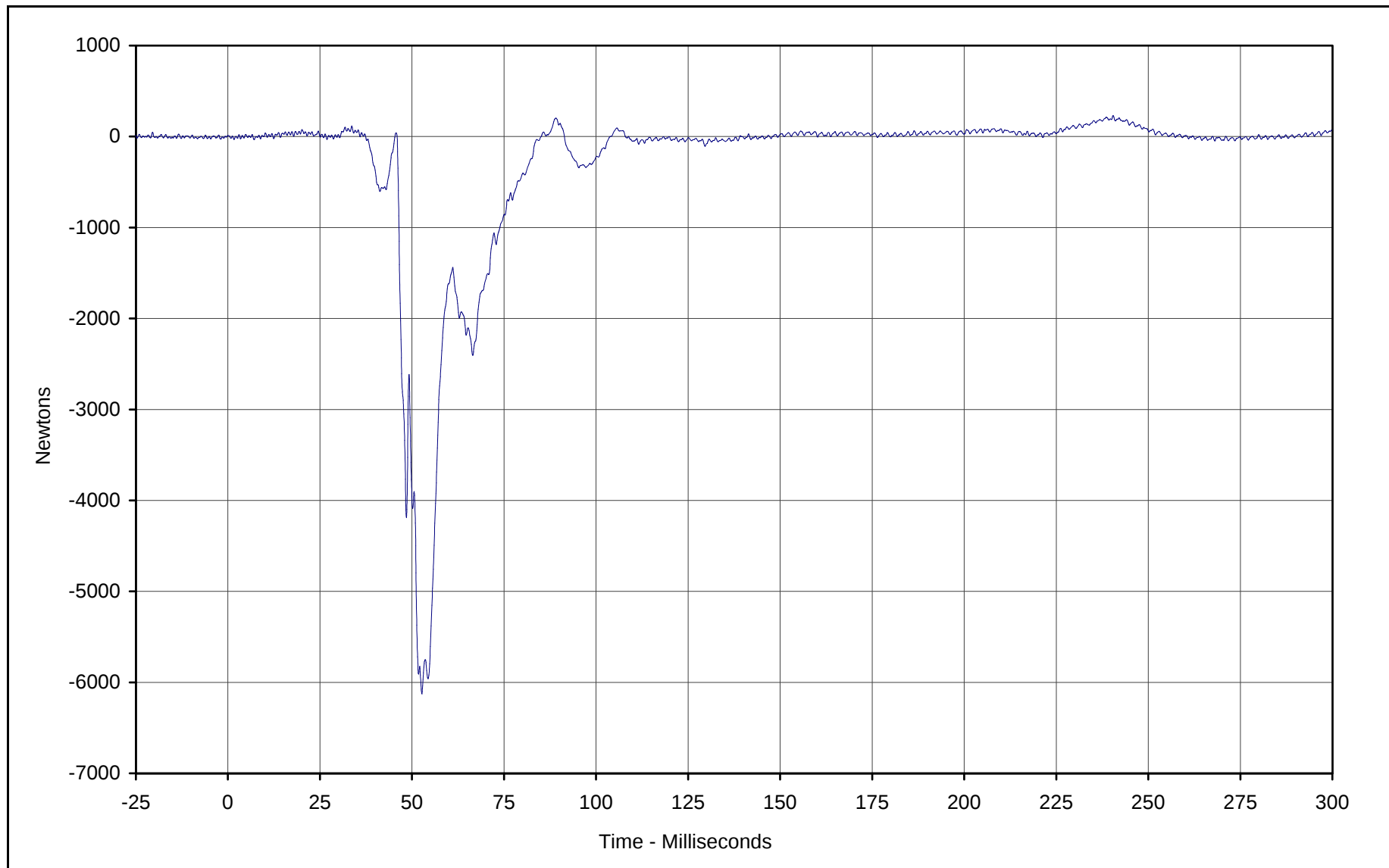


Curve Description: Driver Pelvis Resultant
Maximum Value: 75.0 at 52.1 Milliseconds
Minimum Value: 0.1 at 161.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-020

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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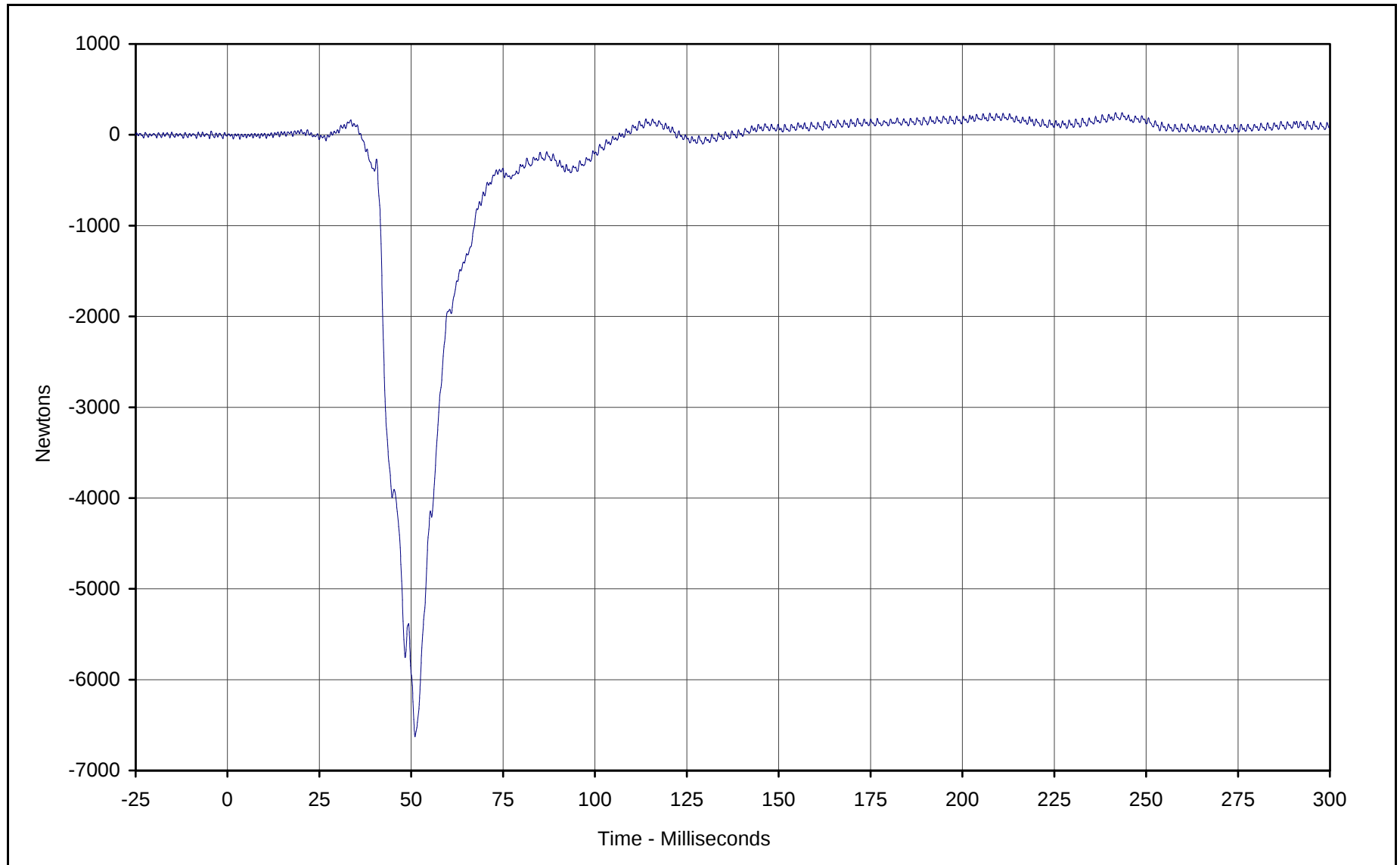


Curve Description: Driver Left Femur Force
Maximum Value: 230.5 at 240.4 Milliseconds
Minimum Value: -6127.1 at 52.7 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-023

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

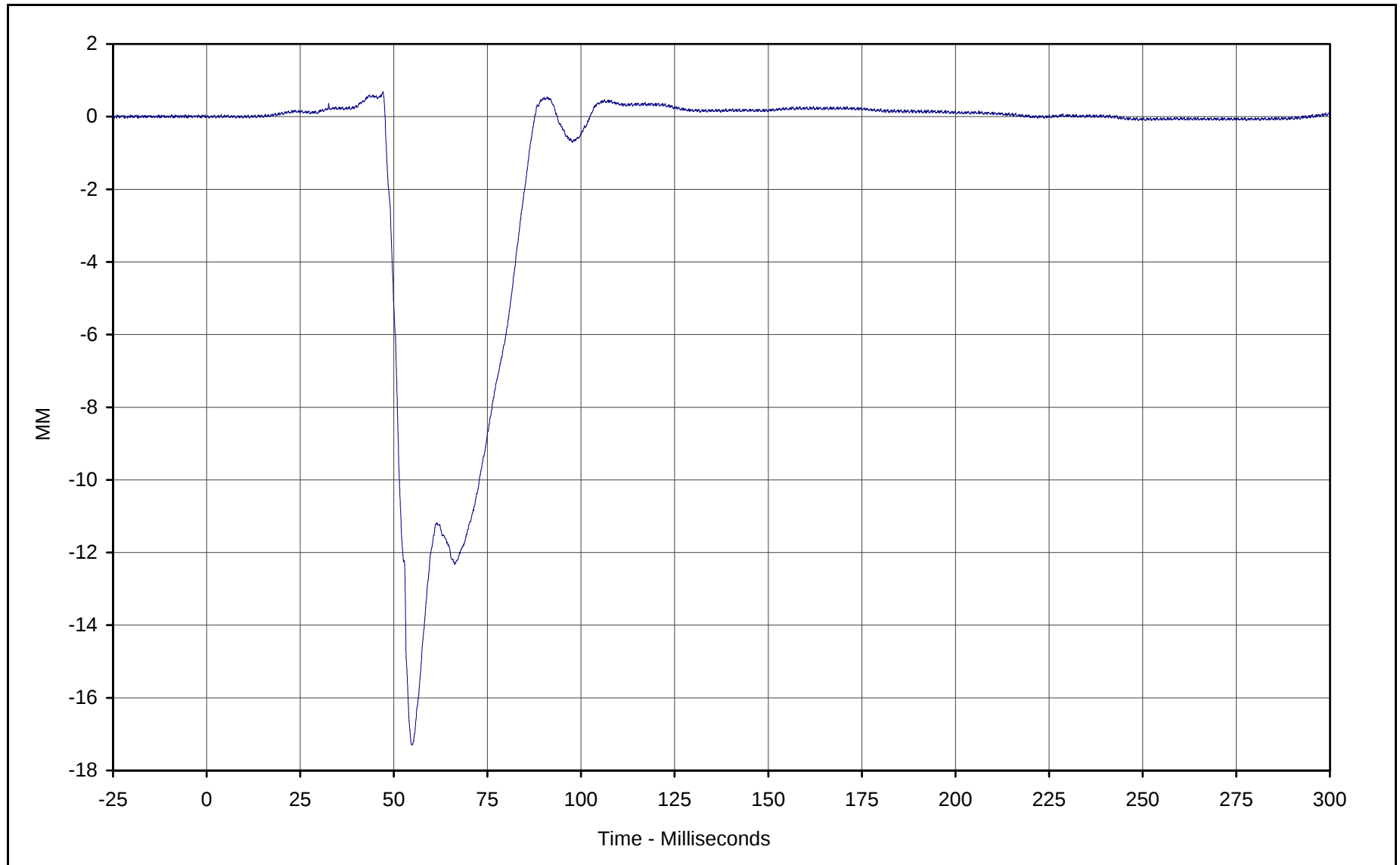


Curve Description: Driver Right Femur Force
Maximum Value: 243.4 at 241.7 Milliseconds
Minimum Value: -6628.6 at 51.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-024

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Driver Left Knee Slider

Maximum Value: 0.69 at 47.1 Milliseconds

Minimum Value: -17.30 at 54.8 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: FIL-025

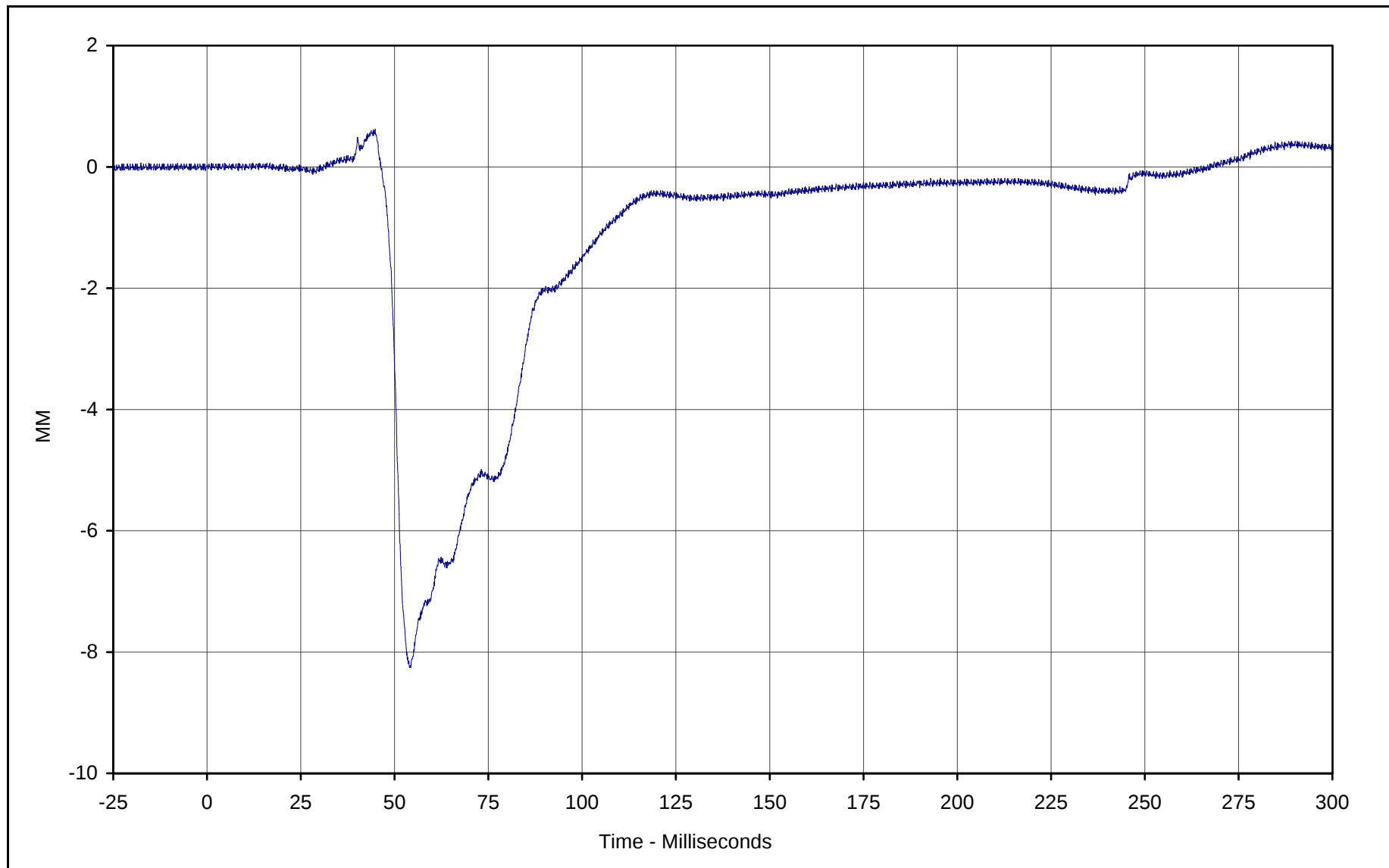
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

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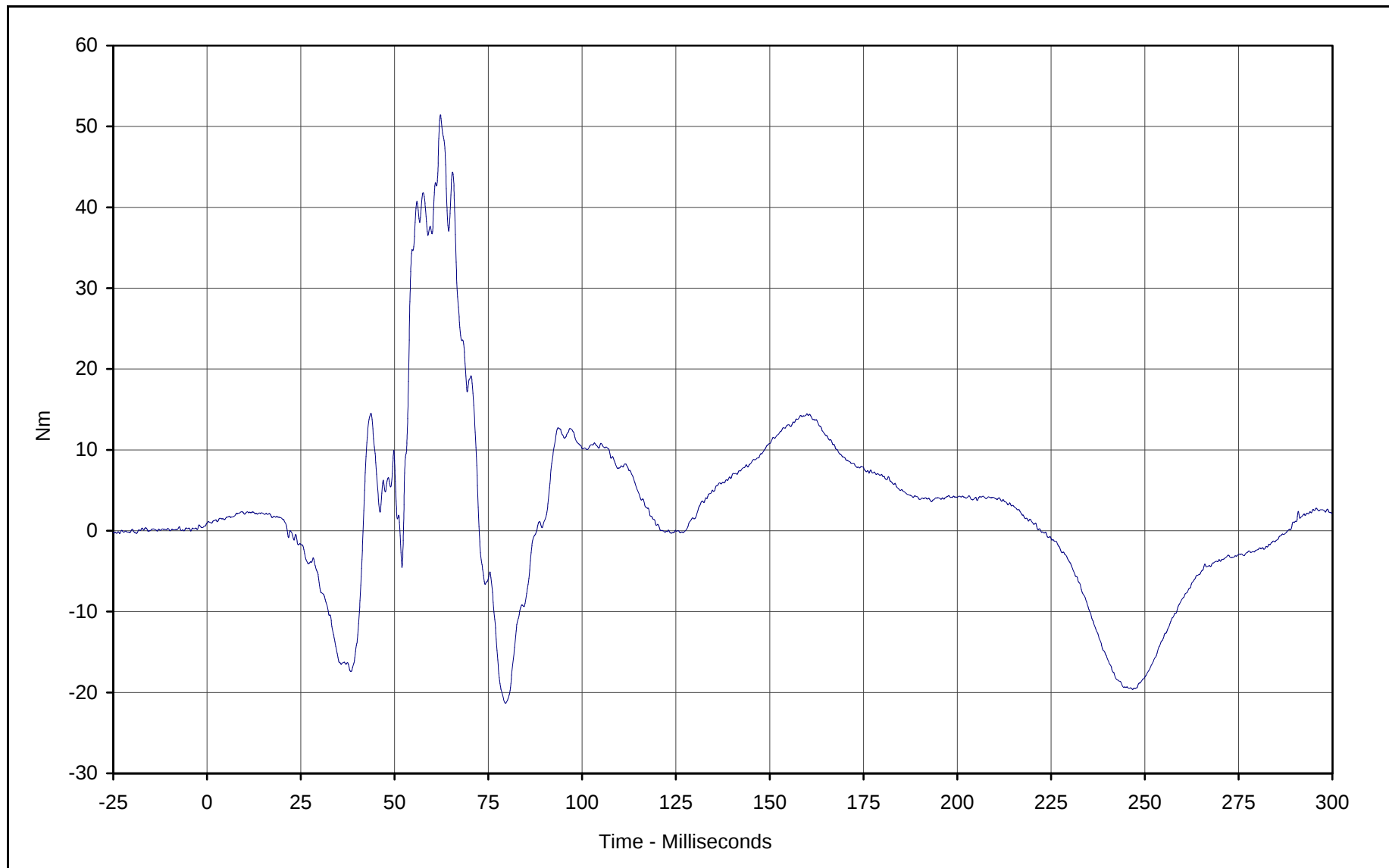


Curve Description: Driver Right Knee Slider
Maximum Value: 0.63 at 44.8 Milliseconds
Minimum Value: -8.25 at 54.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-026

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

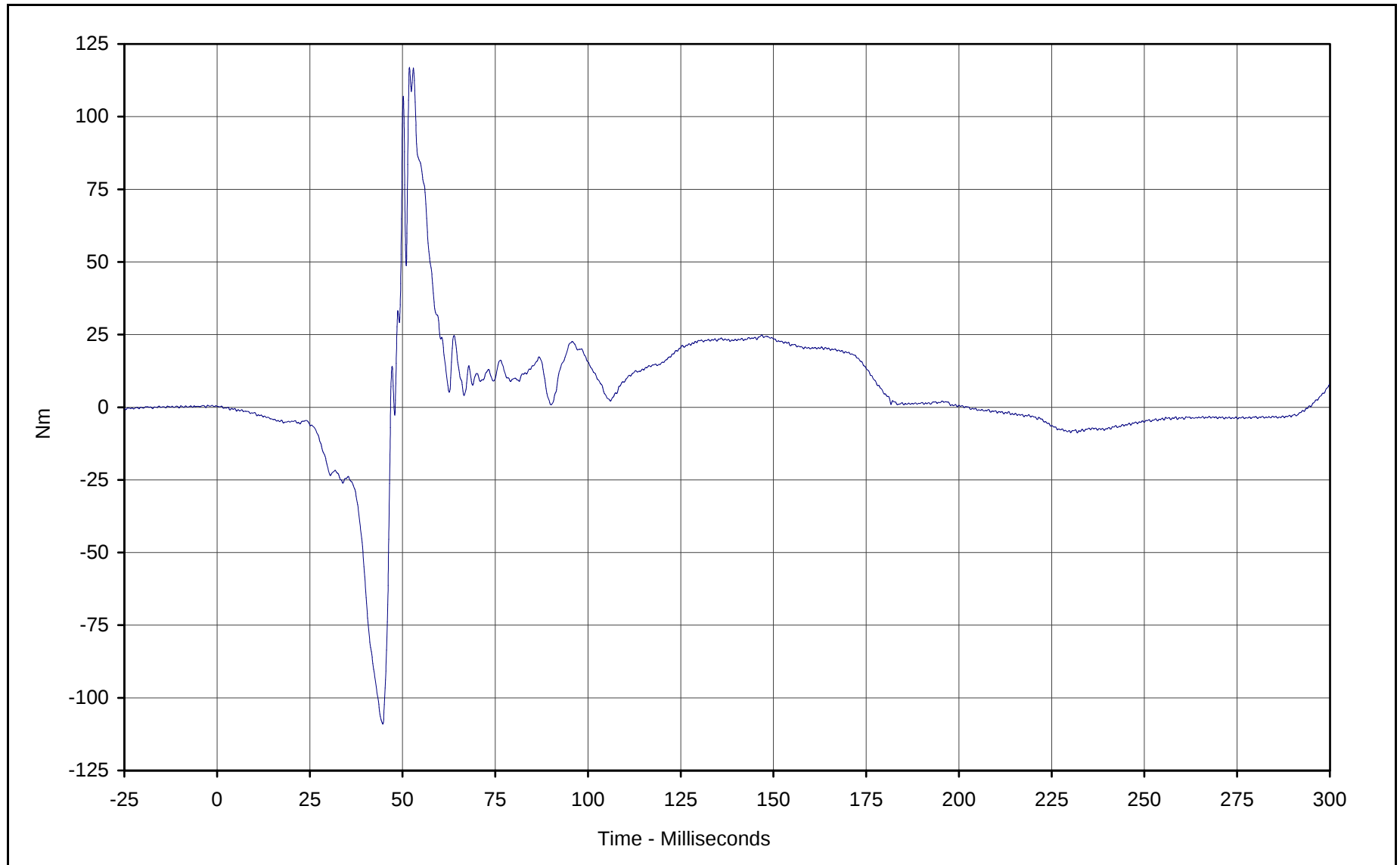


Curve Description: Driver Left Upper Tibia Moment X
Maximum Value: 51.4 at 62.2 Milliseconds
Minimum Value: -21.3 at 79.5 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-027

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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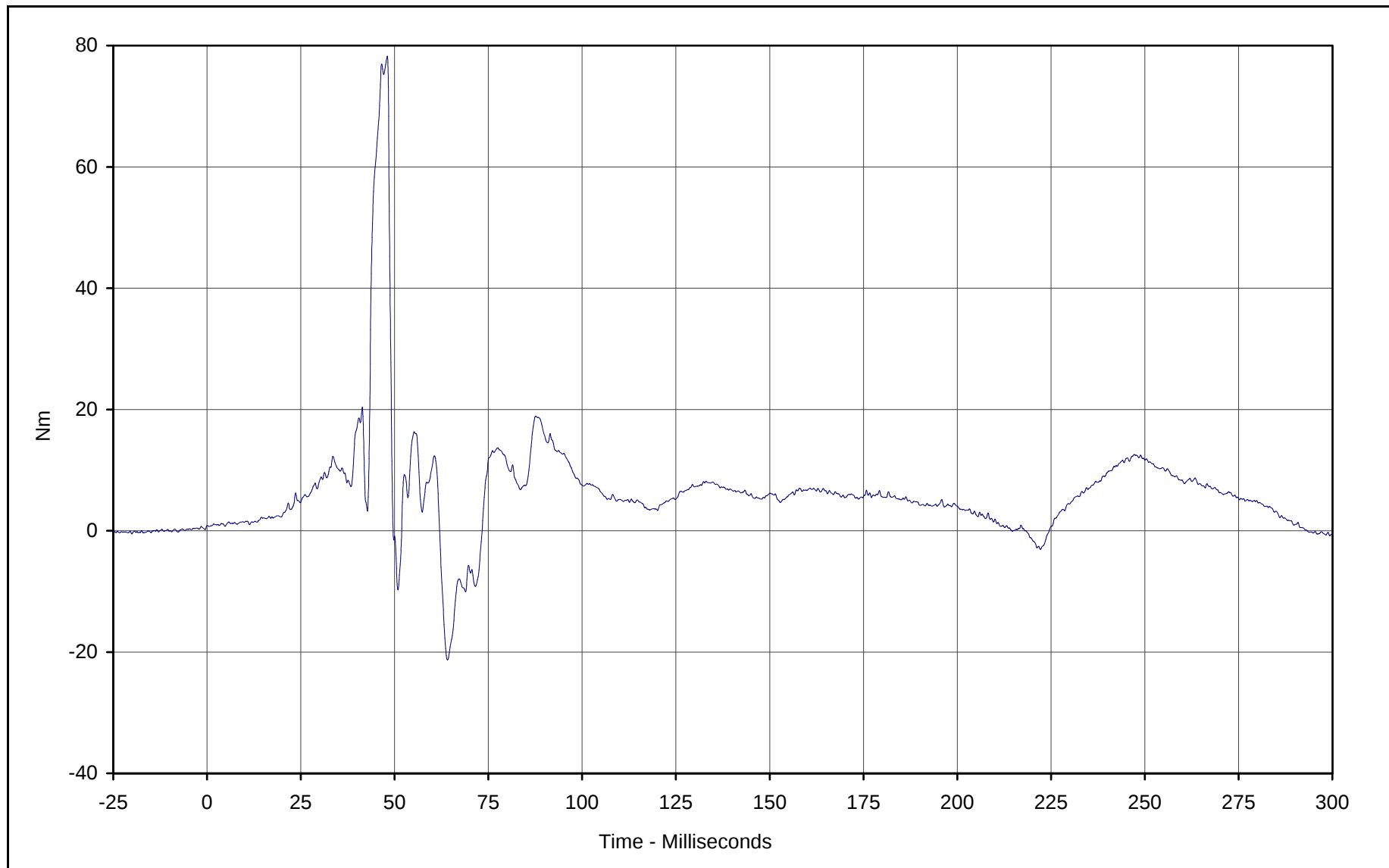


Curve Description: Driver Left Upper Tibia Moment Y
Maximum Value: 116.9 at 51.9 Milliseconds
Minimum Value: -109.0 at 44.7 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-028

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



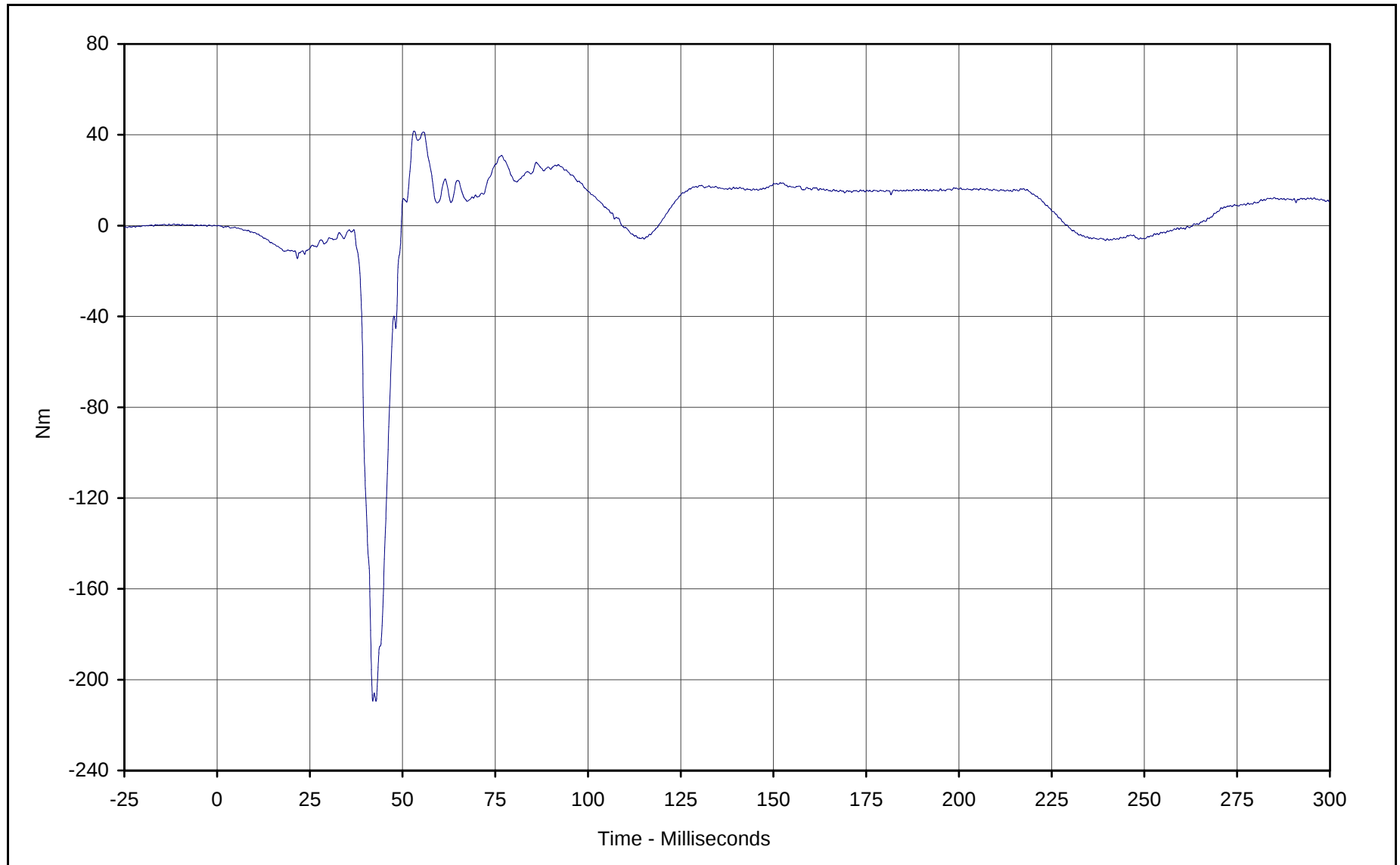
KAR22001-02



Curve Description: Driver Right Upper Tibia Moment X
Maximum Value: 78.3 at 48.1 Milliseconds
Minimum Value: -21.3 at 64.1 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-029

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



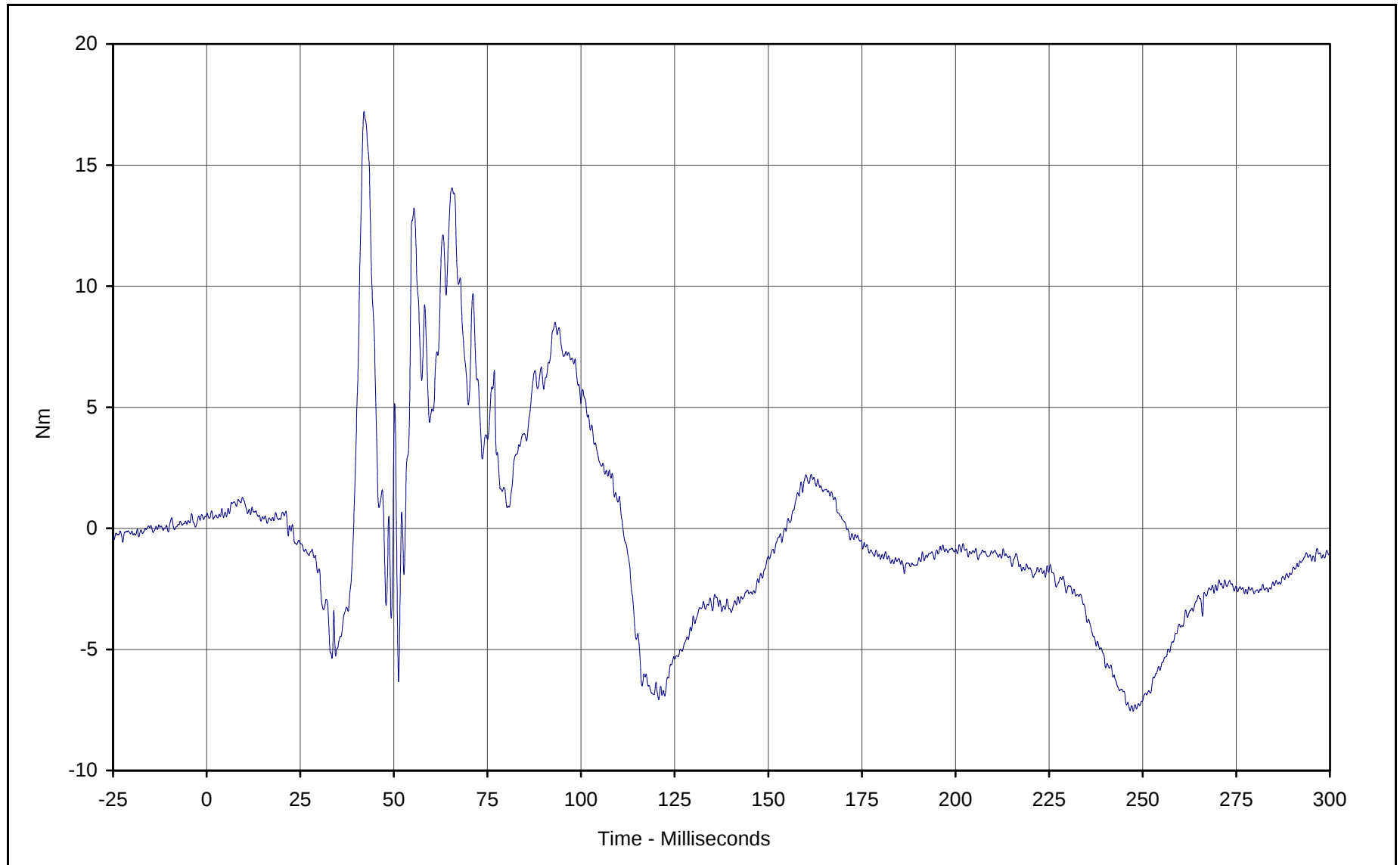


Curve Description: Driver Right Upper Tibia Moment Y
Maximum Value: 41.6 at 53.1 Milliseconds
Minimum Value: -209.4 at 42.8 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-030

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

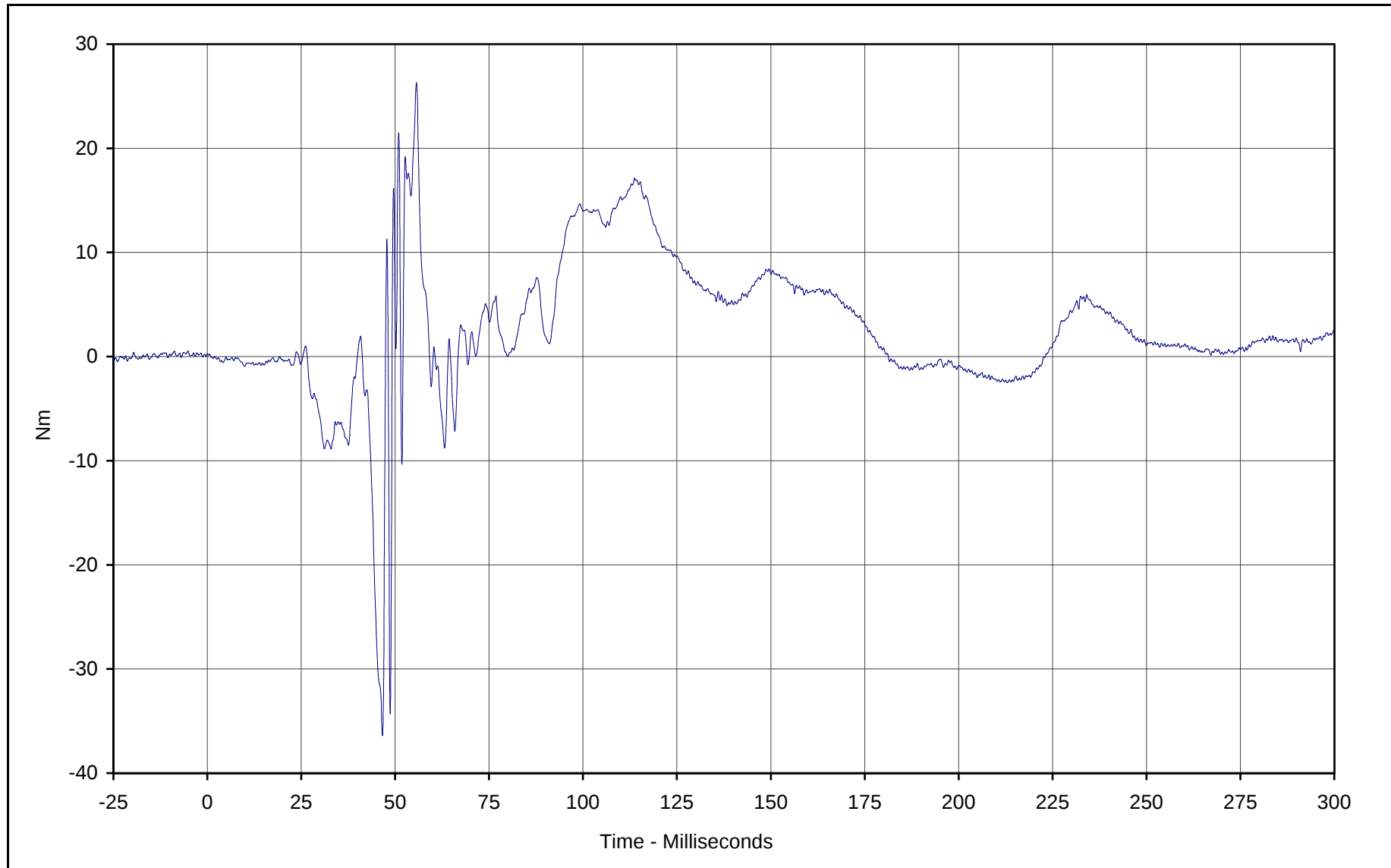




Curve Description: Driver Left Lower Tibia Moment X
Maximum Value: 17.2 at 42.0 Milliseconds
Minimum Value: -7.6 at 247.5 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-031

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



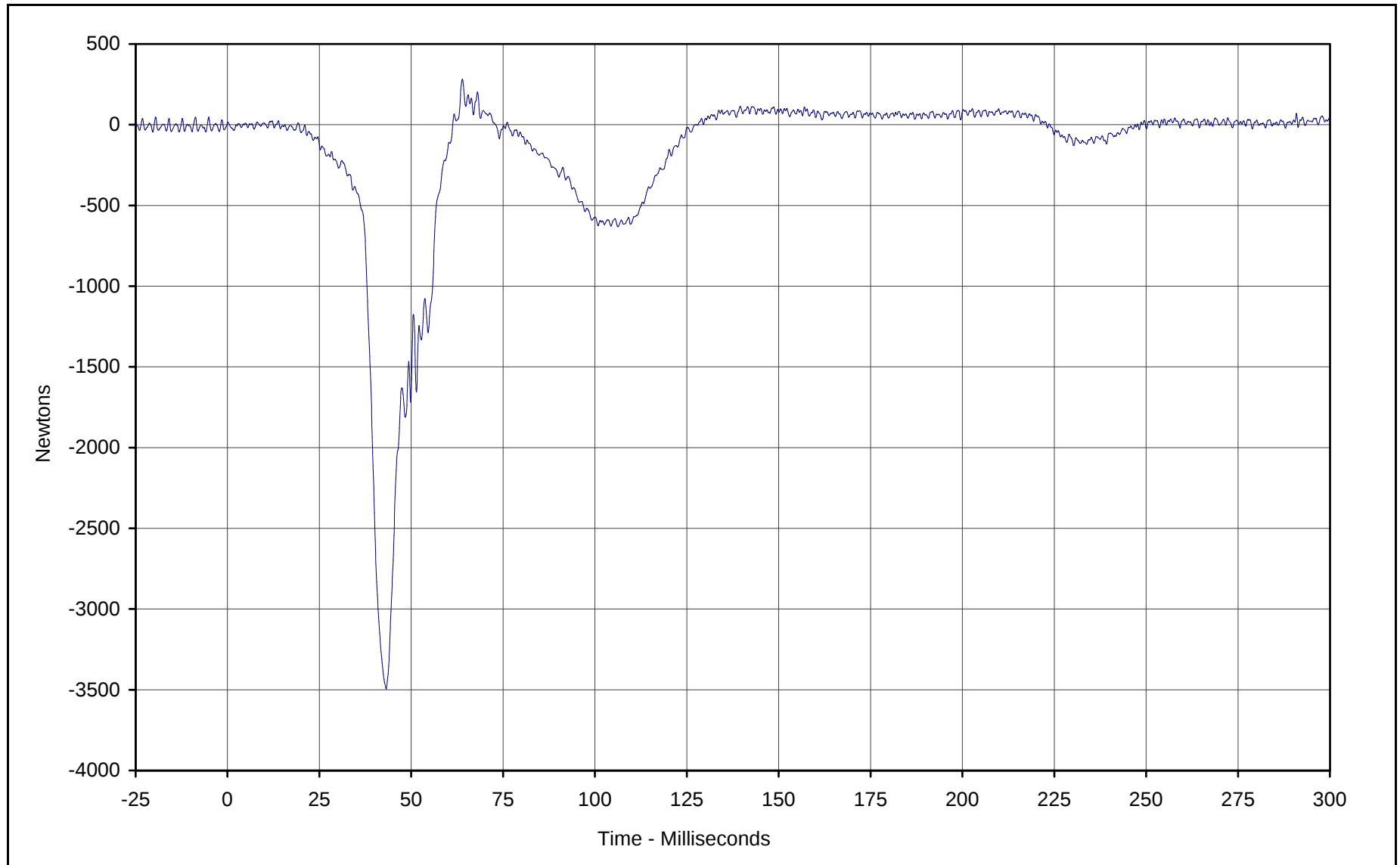


Curve Description: Driver Left Lower Tibia Moment Y
Maximum Value: 26.3 at 55.7 Milliseconds
Minimum Value: -36.4 at 46.6 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-032

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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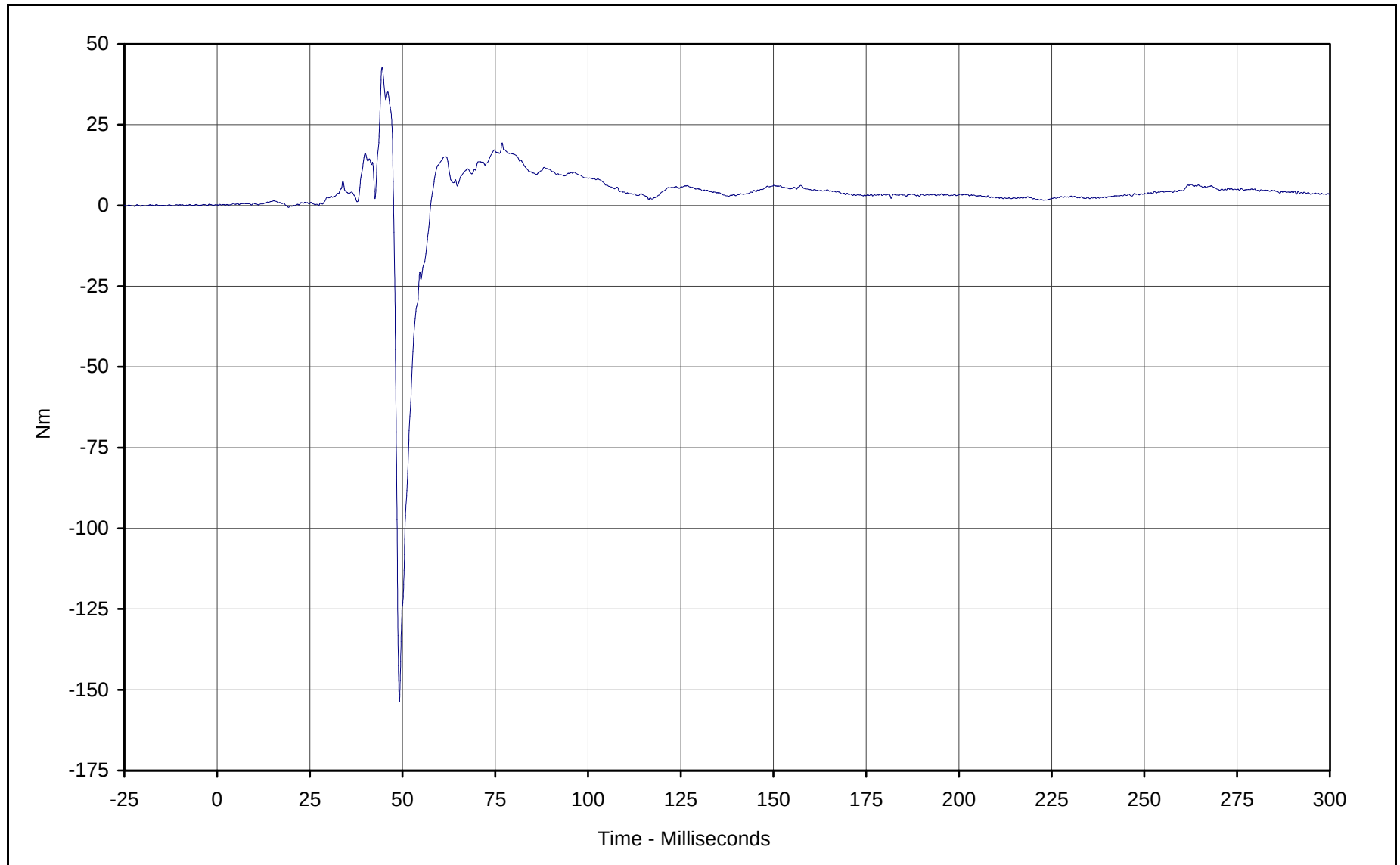
Curve Description: Driver Left Lower Tibia Force Z
Maximum Value: 282.8 at 63.9 Milliseconds
Minimum Value: -3495.7 at 43.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-033

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

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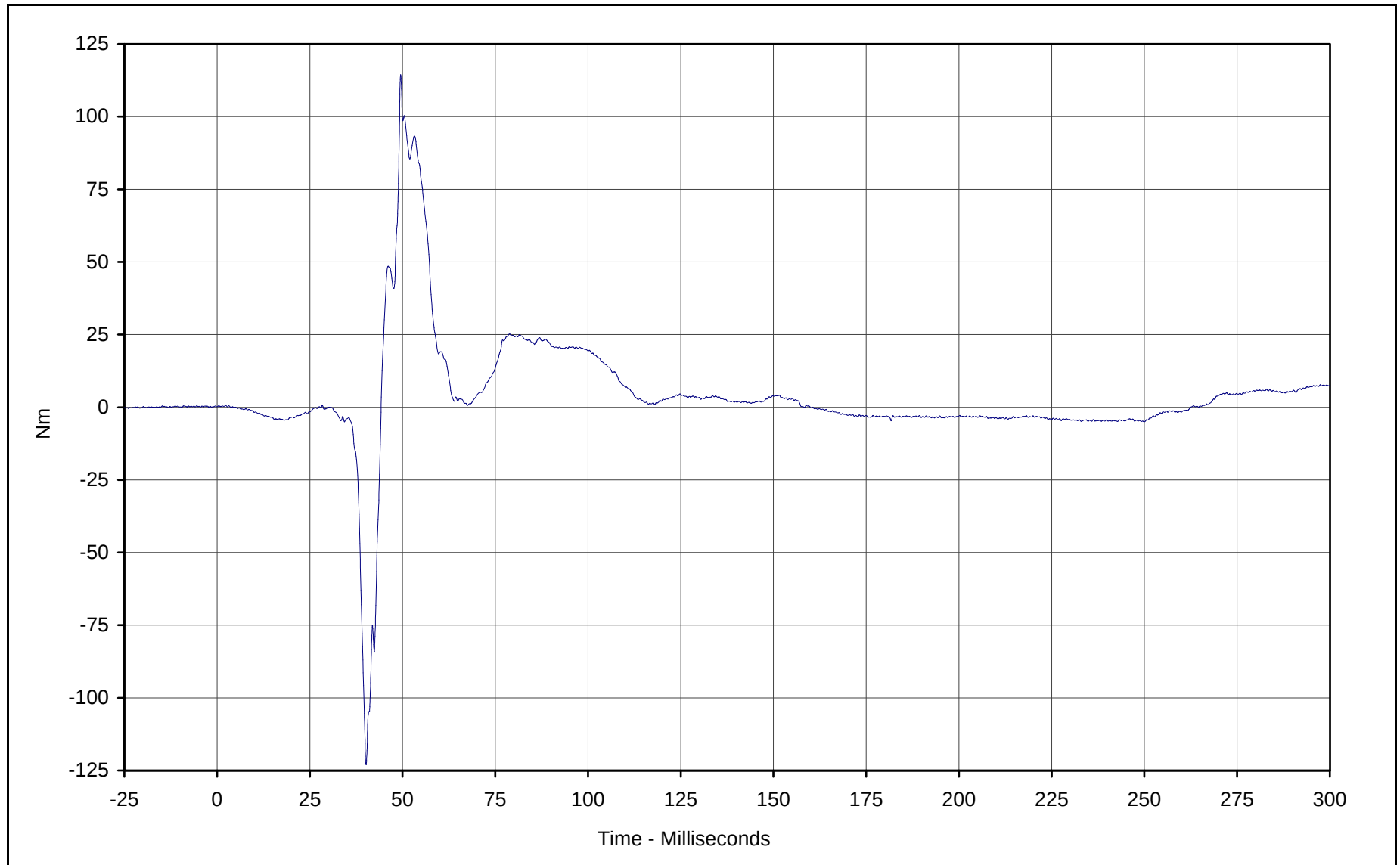


Curve Description: Driver Right Lower Tibia Moment X
Maximum Value: 42.8 at 44.5 Milliseconds
Minimum Value: -153.6 at 49.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-034

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



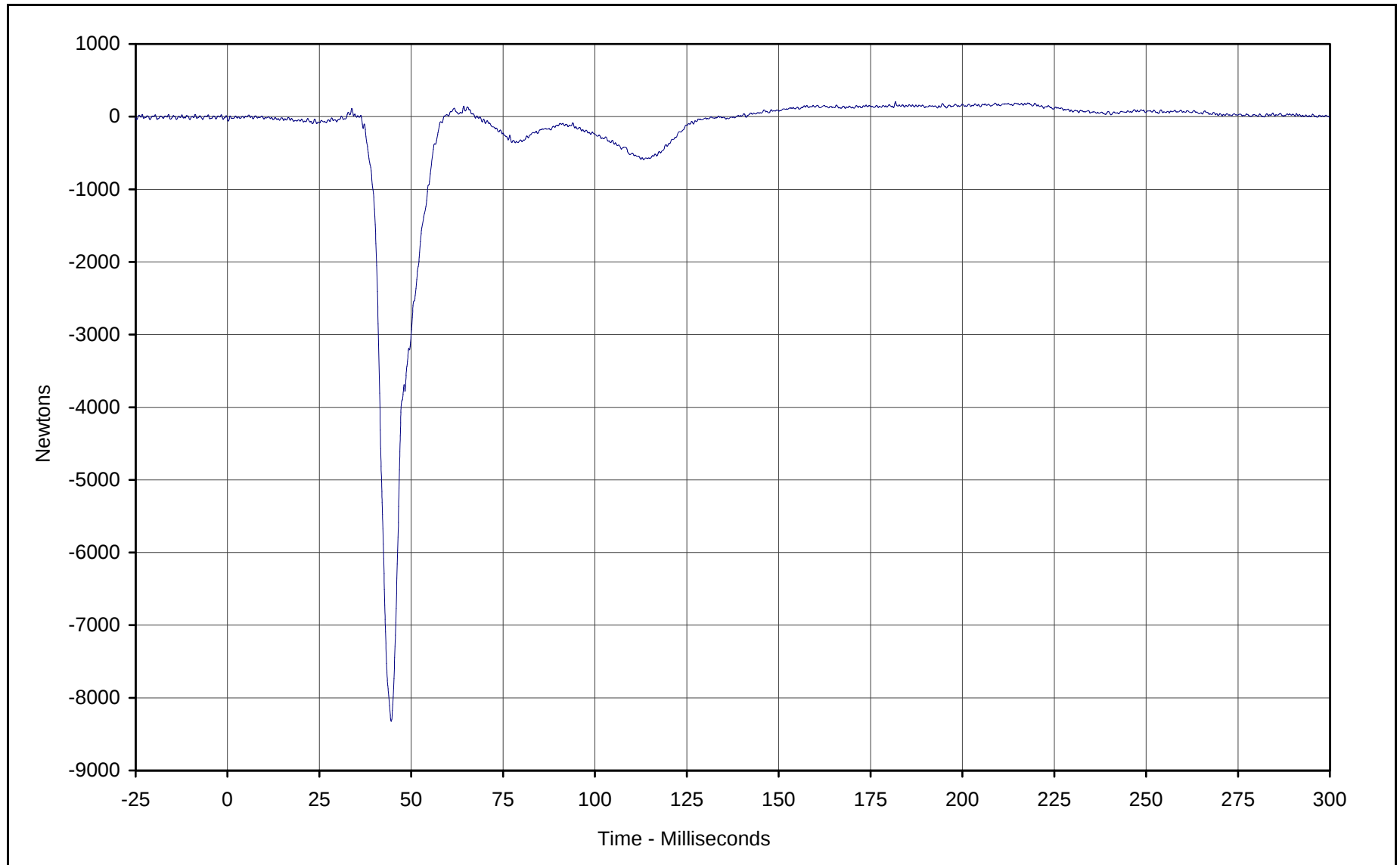
KAR22001-02



Curve Description: Driver Right Lower Tibia Moment Y
Maximum Value: 114.5 at 49.5 Milliseconds
Minimum Value: -123.1 at 40.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-035

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



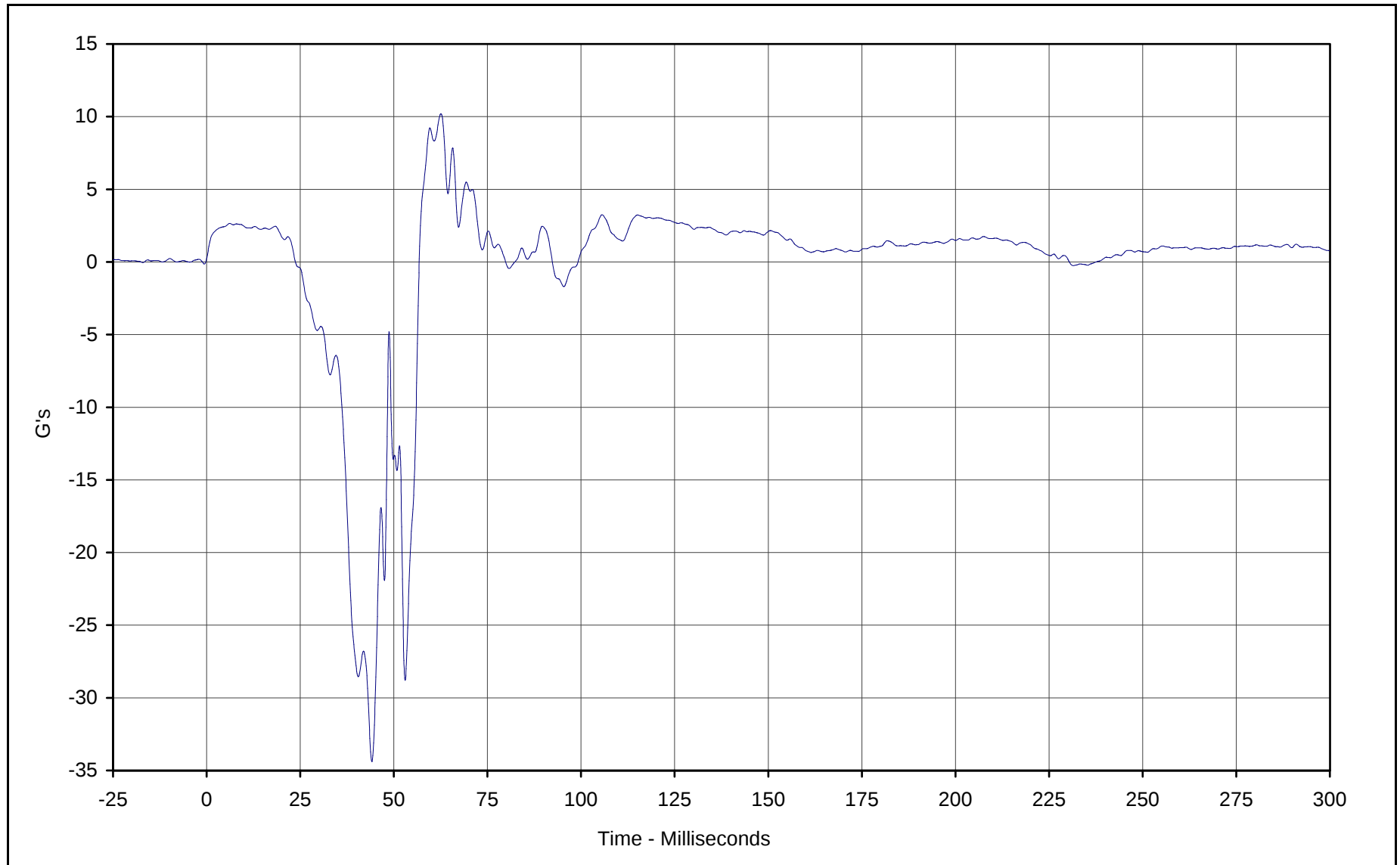


Curve Description: Driver Right Lower Tibia Force Z
Maximum Value: 206.6 at 181.8 Milliseconds
Minimum Value: -8322.3 at 44.6 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-036

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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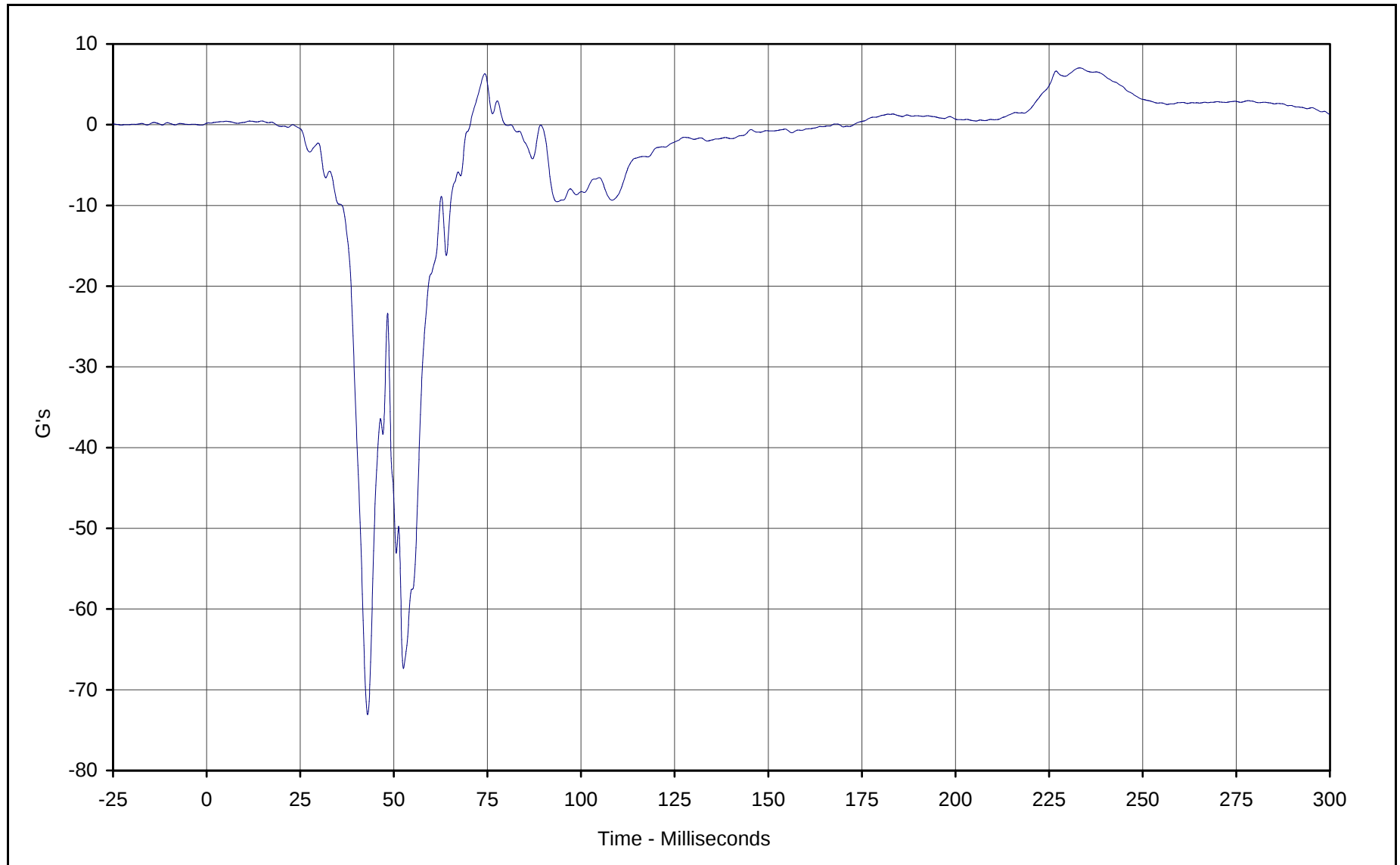
Curve Description: Driver Left Foot Aft X
Maximum Value: 10.2 at 62.6 Milliseconds
Minimum Value: -34.4 at 44.1 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-037

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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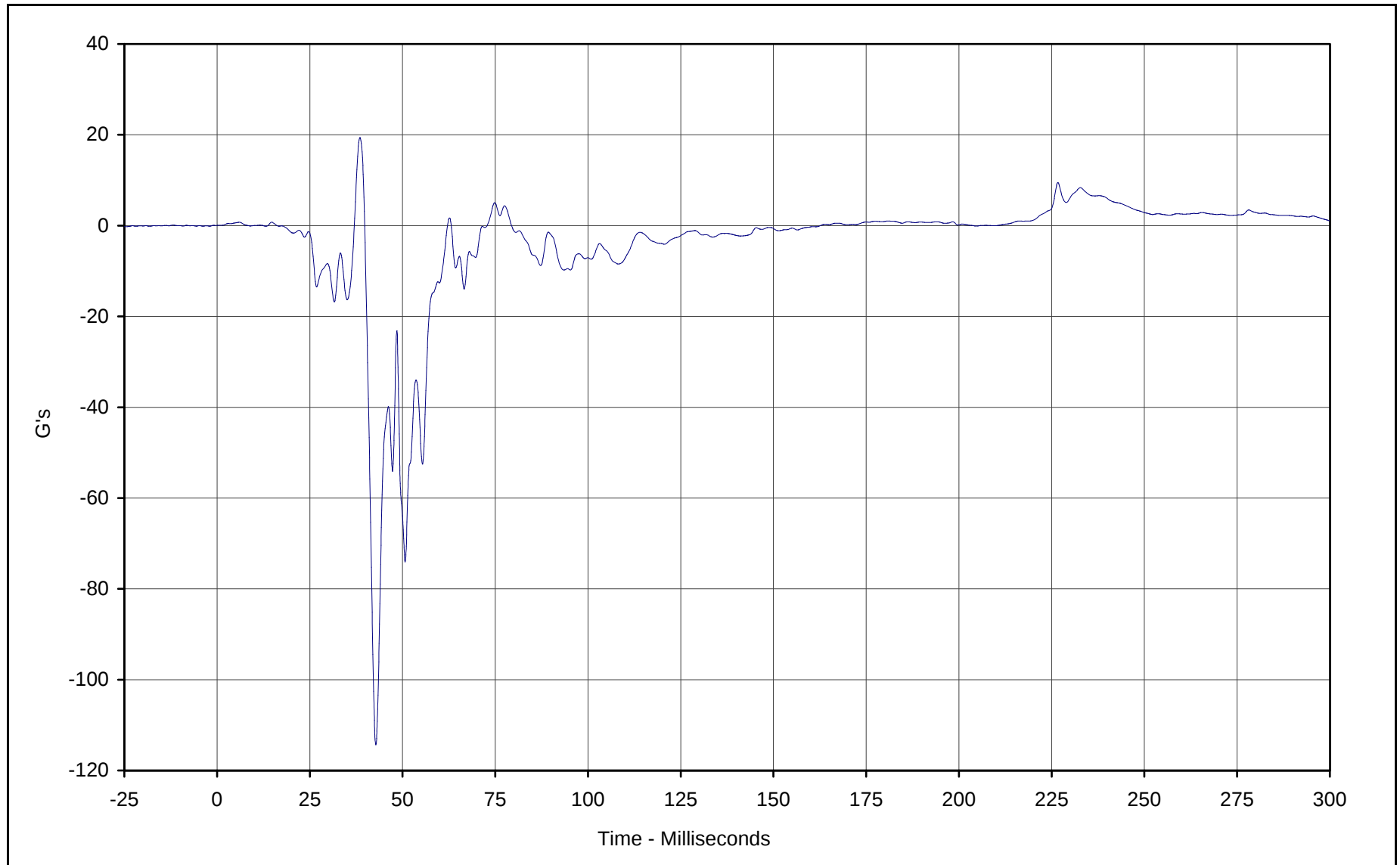


Curve Description: Driver Left Foot Aft Z
Maximum Value: 7.0 at 233.2 Milliseconds
Minimum Value: -73.1 at 43.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-038

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



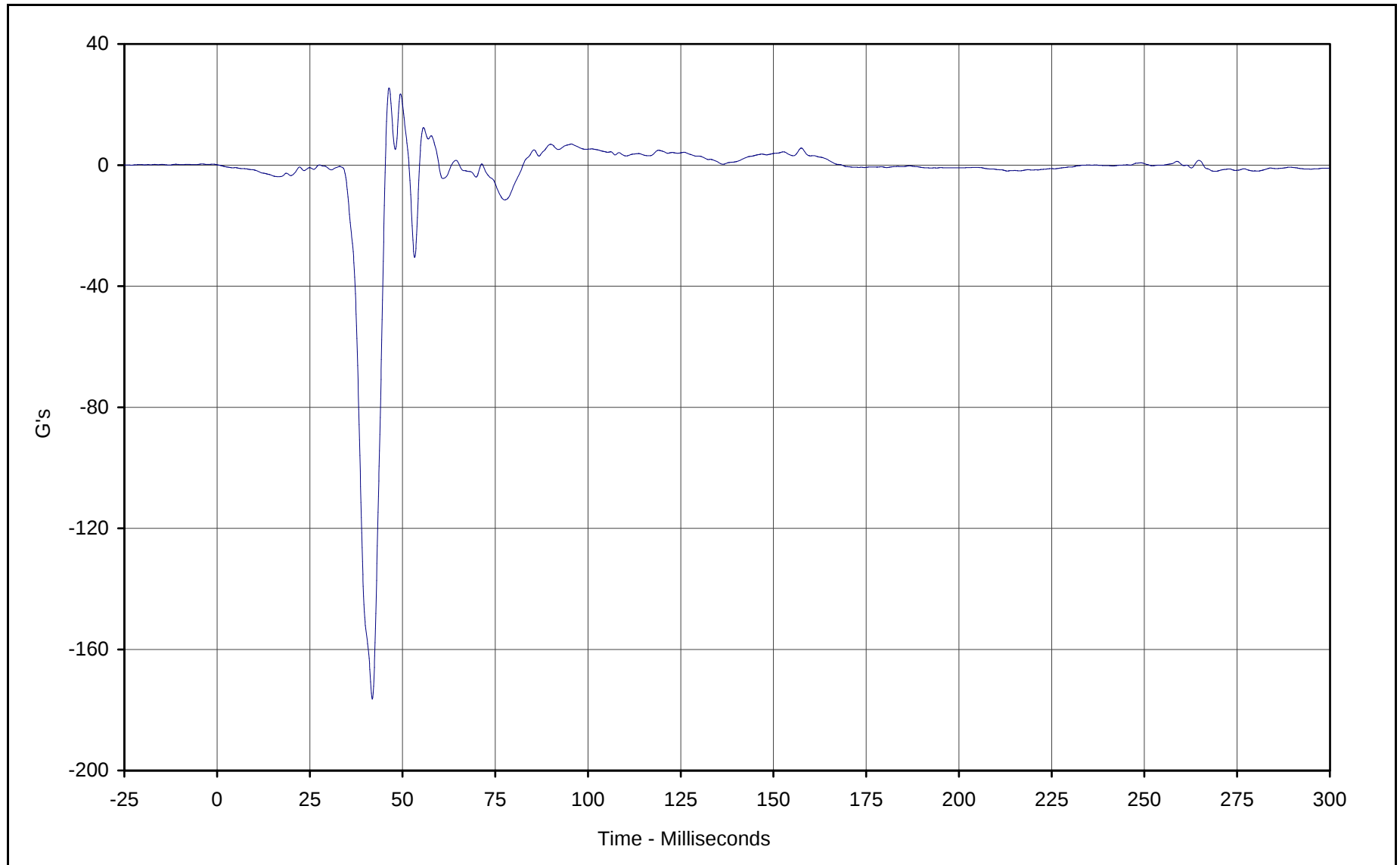
KAR22001-02



Curve Description: Driver Left Foot Fore Z
Maximum Value: 19.4 at 38.5 Milliseconds
Minimum Value: -114.4 at 42.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-039

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



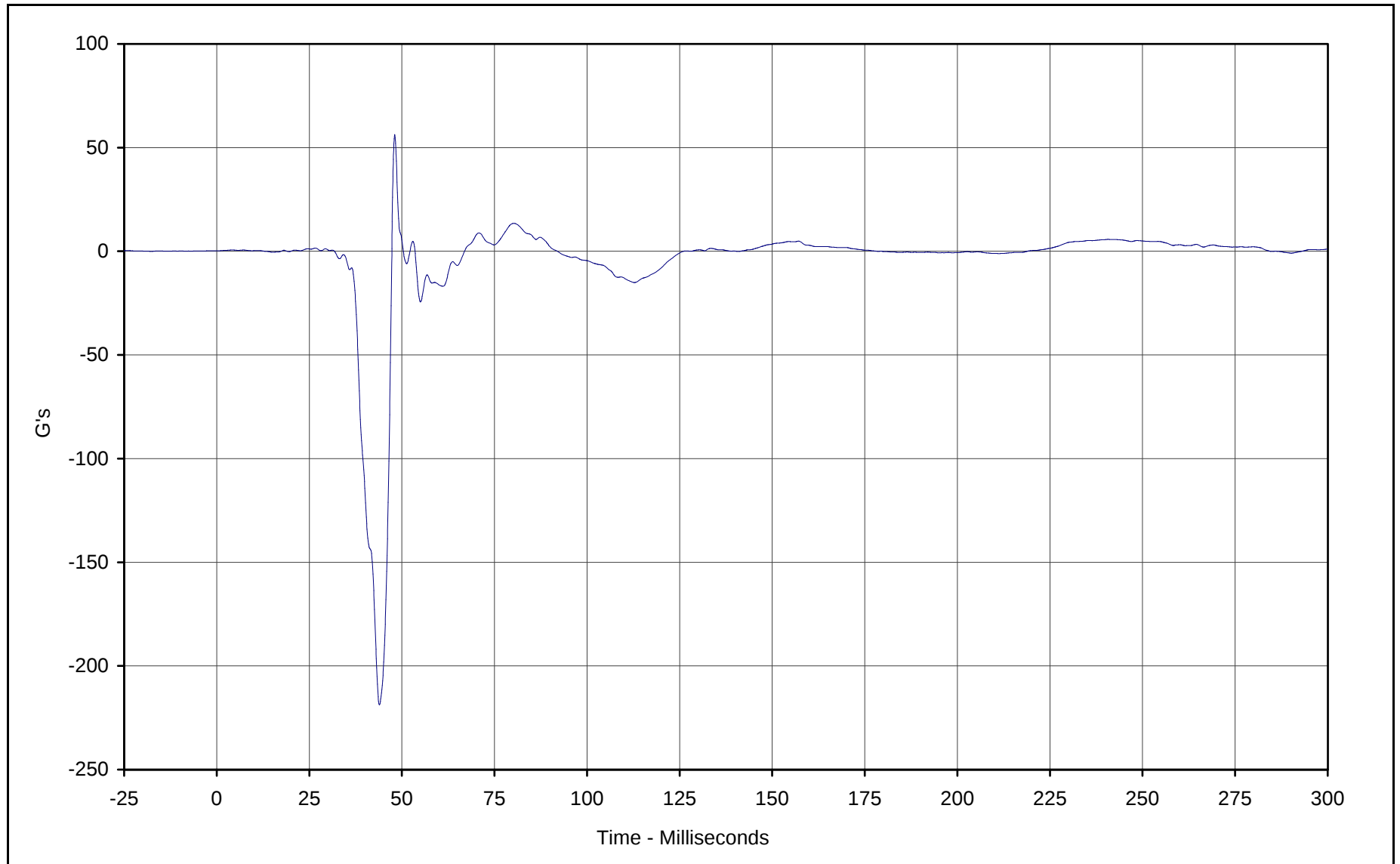


Curve Description: Driver Right Foot Aft X
Maximum Value: 25.5 at 46.4 Milliseconds
Minimum Value: -176.4 at 41.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-040

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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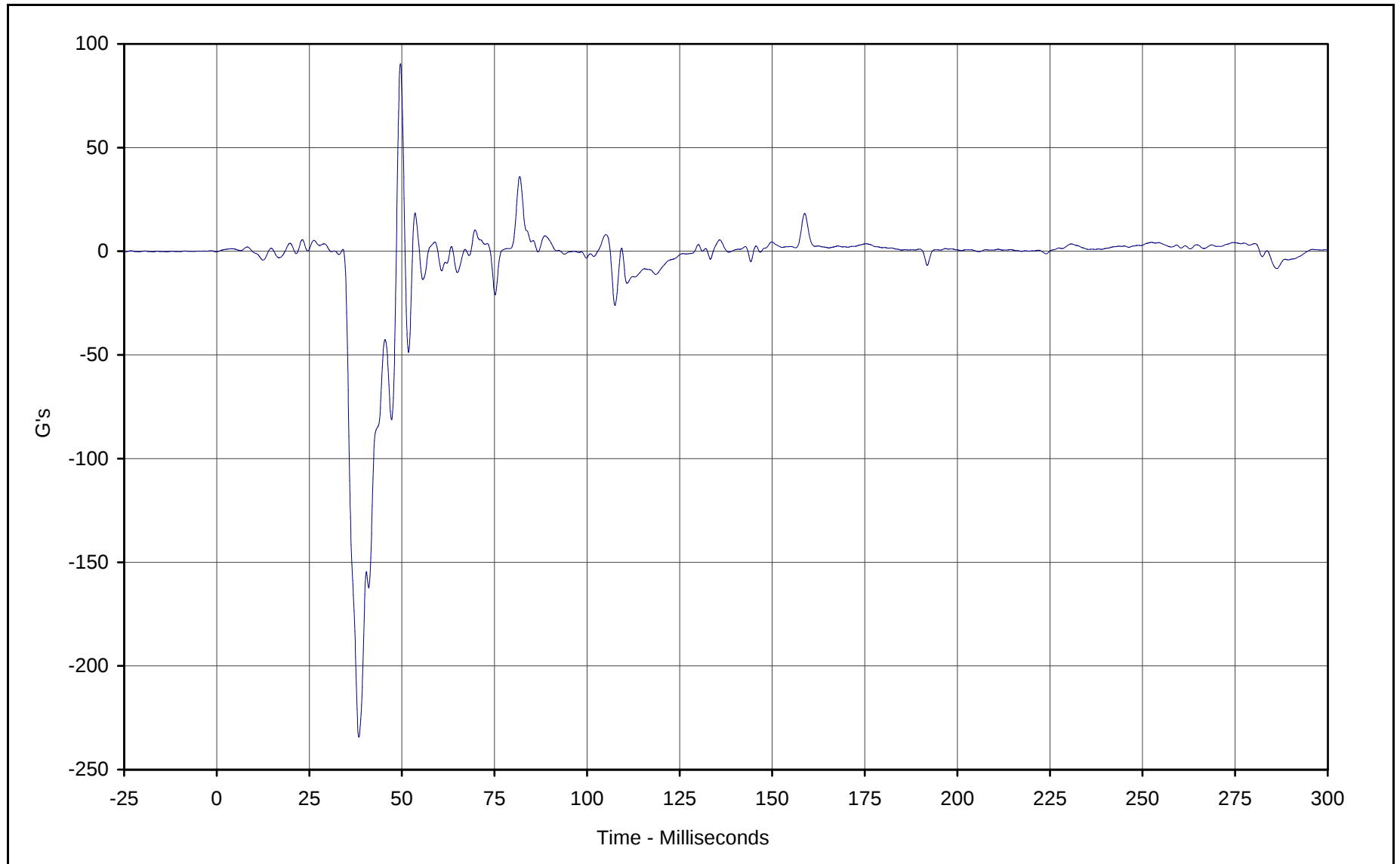
Curve Description: Driver Right Foot Aft Z
Maximum Value: 56.3 at 48.1 Milliseconds
Minimum Value: -218.7 at 43.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-041

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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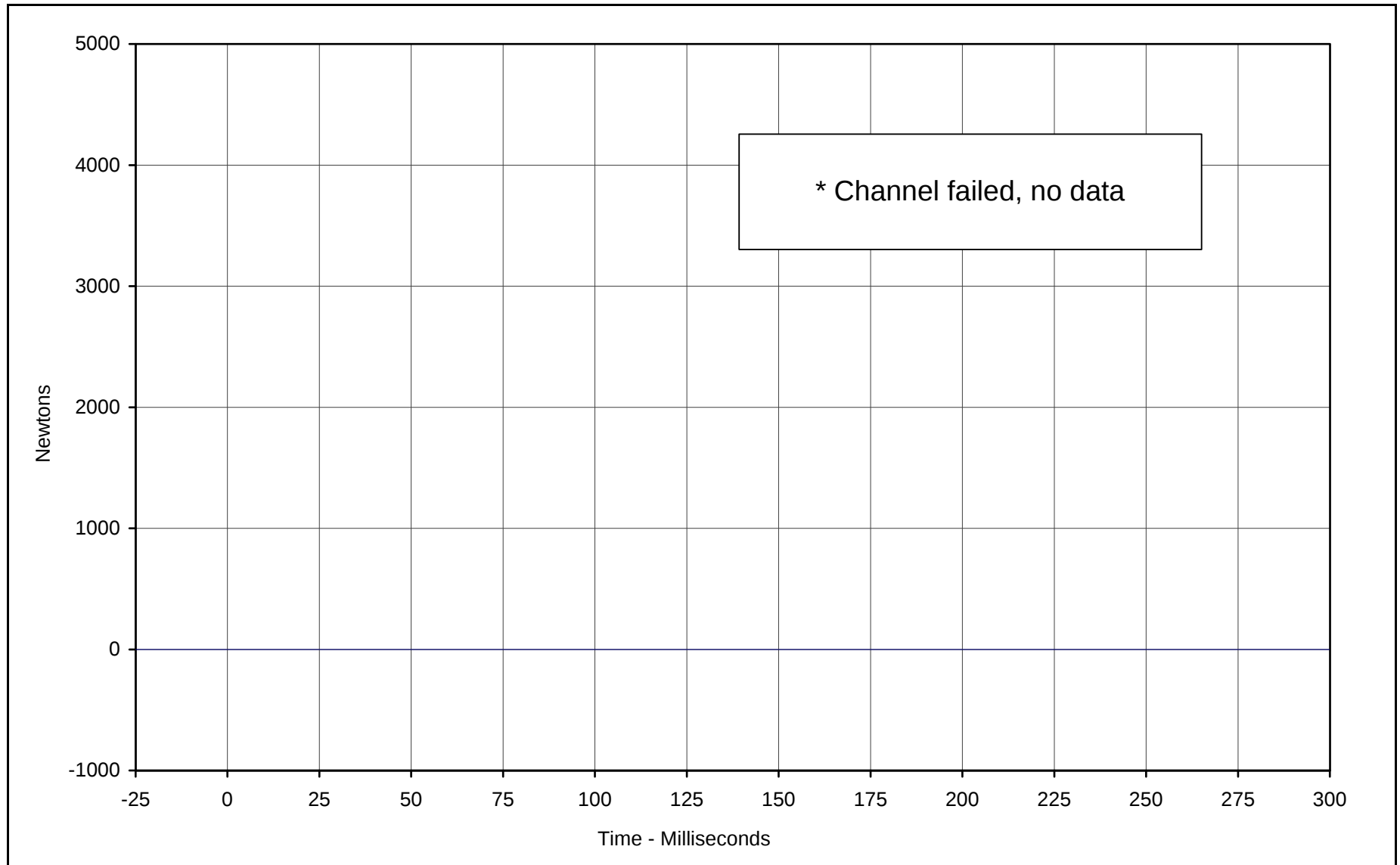
Curve Description: Driver Right Foot Fore Z
Maximum Value: 90.5 at 49.6 Milliseconds
Minimum Value: -234.4 at 38.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-042

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Driver Lap Belt Force *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-043

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

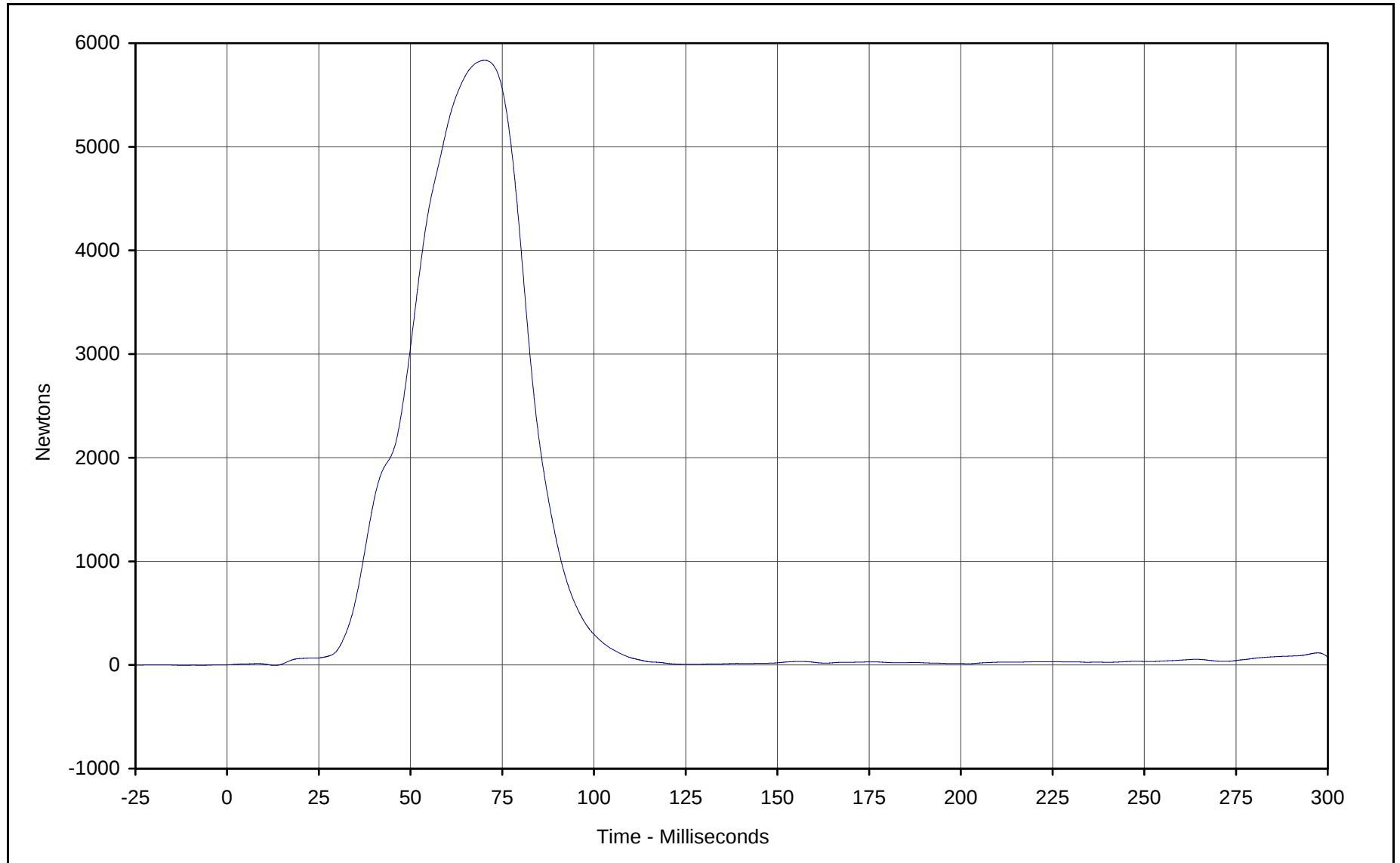
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed, no data



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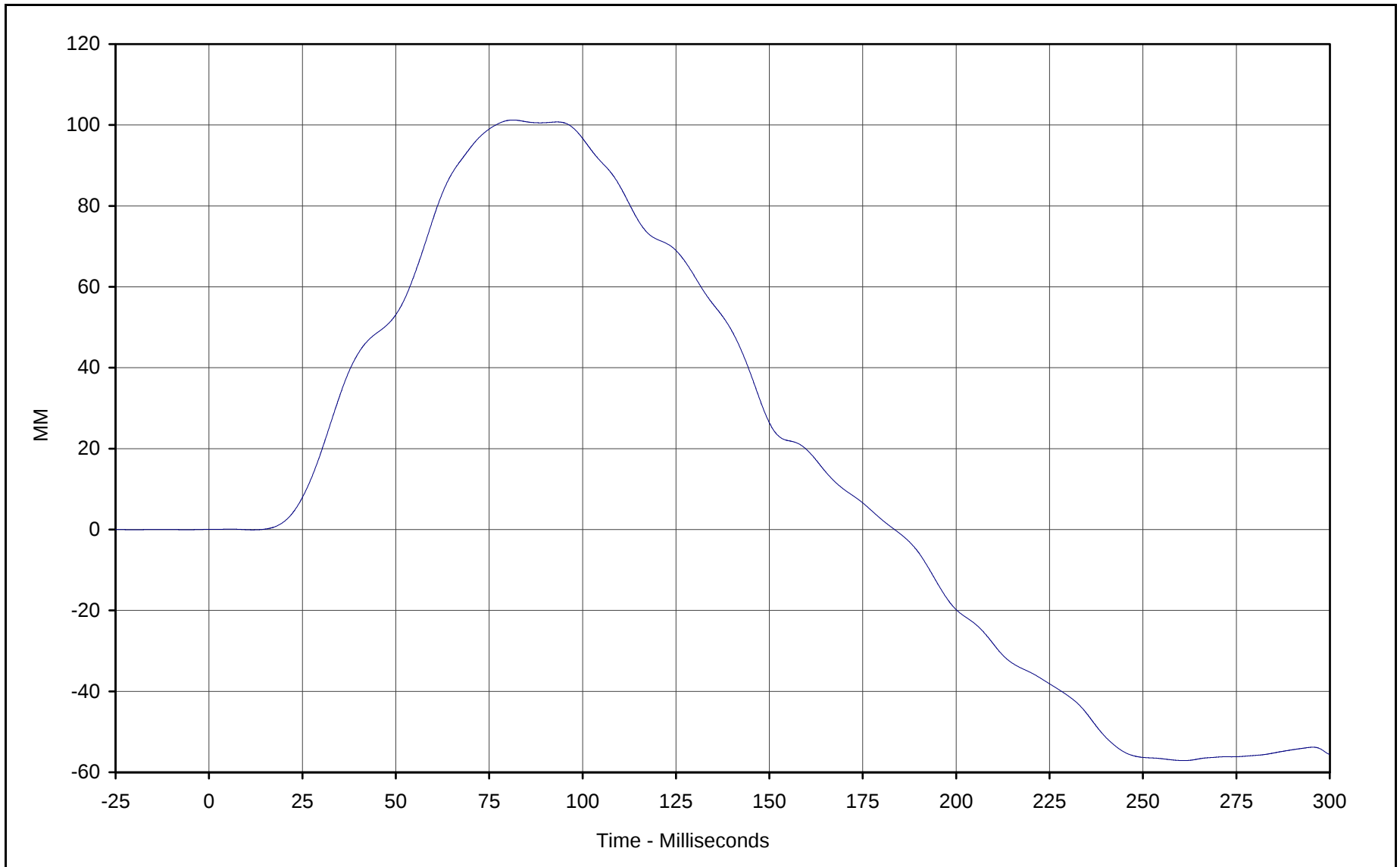
Curve Description: Driver Shoulder Belt Force
Maximum Value: 5834.6 at 70.2 Milliseconds
Minimum Value: -4.1 at 13.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-044

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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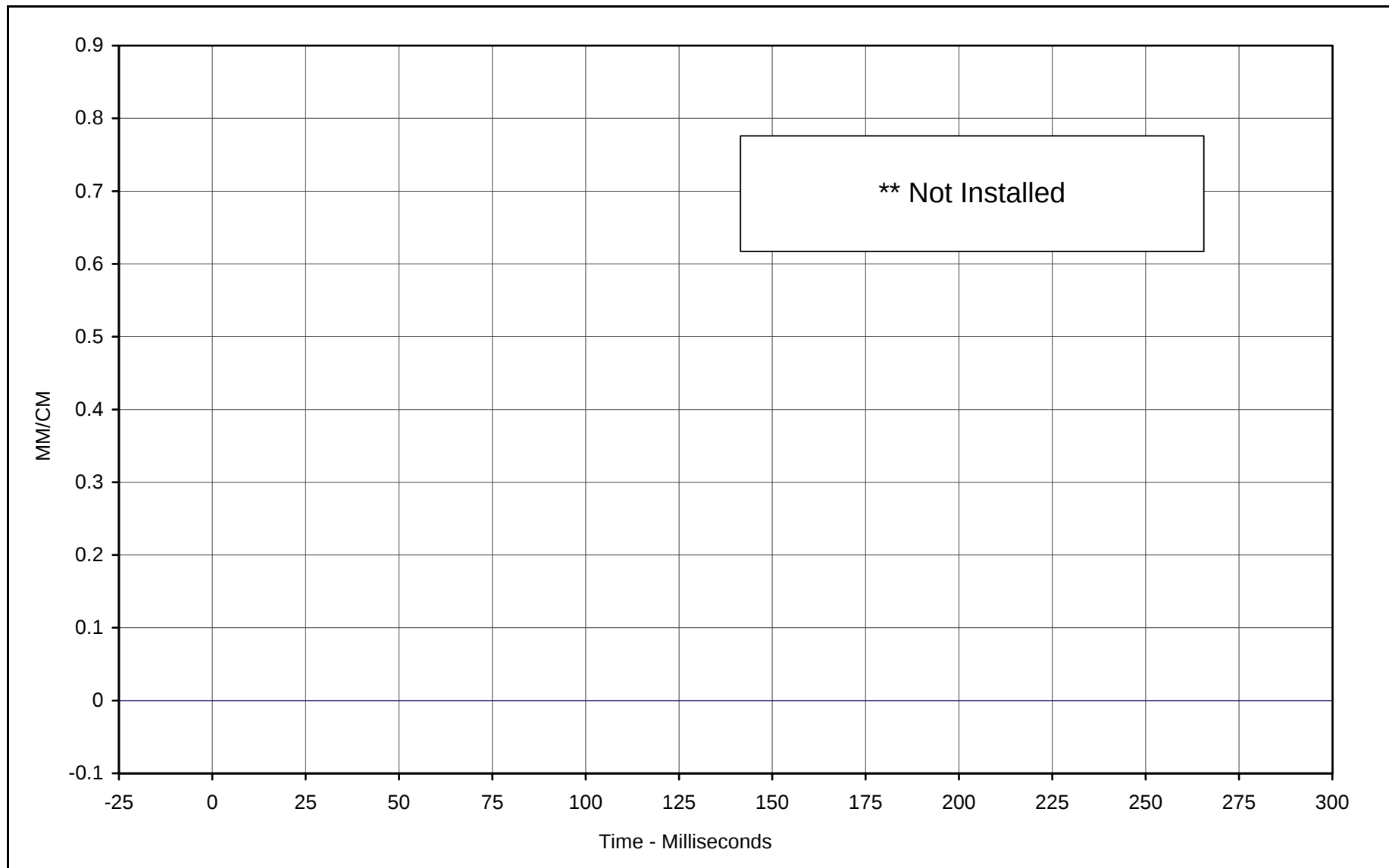


Curve Description: Driver Shoulder Belt Pullout
Maximum Value: 101.2 at 81.4 Milliseconds
Minimum Value: -57.1 at 260.9 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-045

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Driver Shoulder Belt Elongation **

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Minimum Value: 0.0 at 0.0 Milliseconds

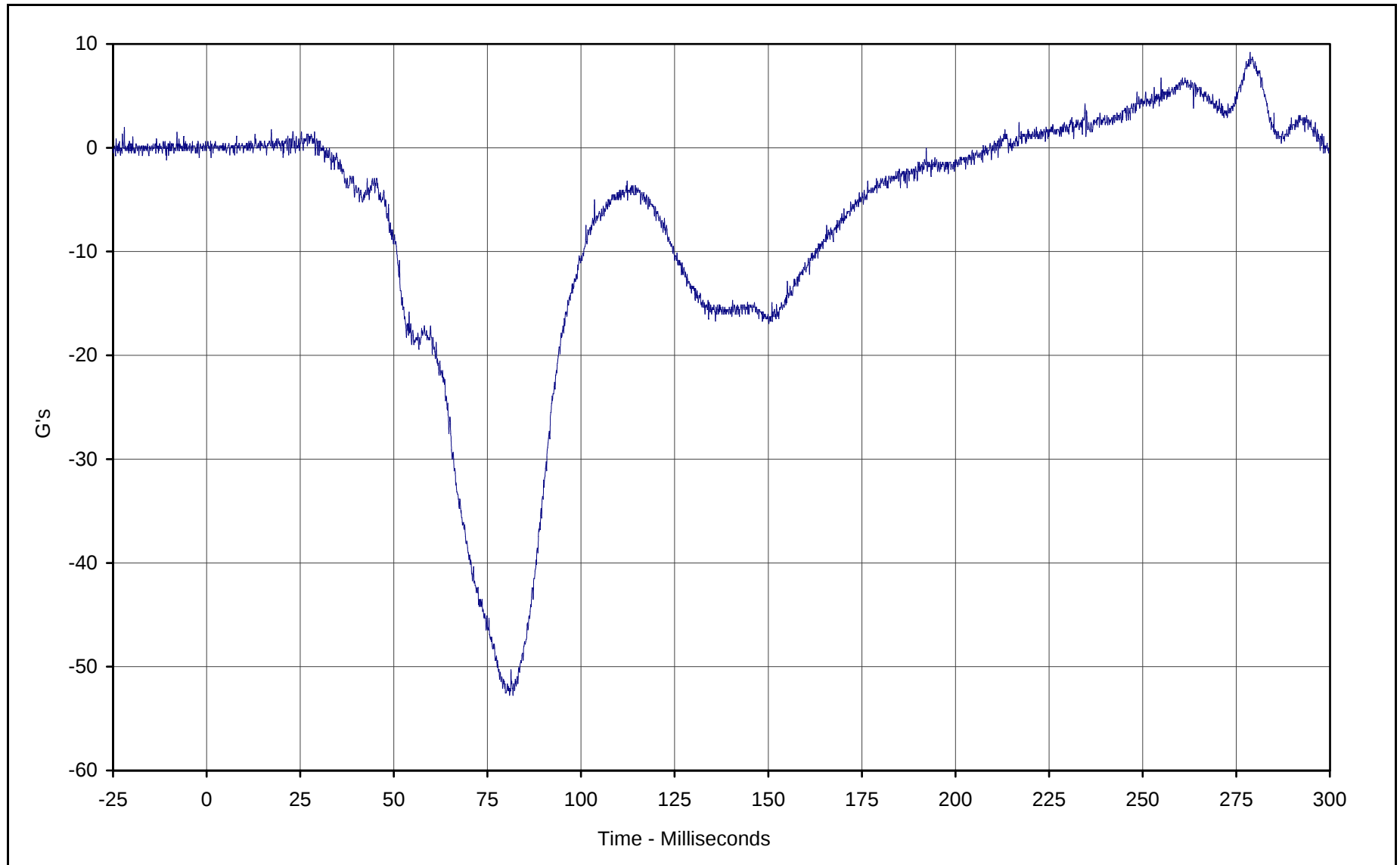
SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-046

** Not installed



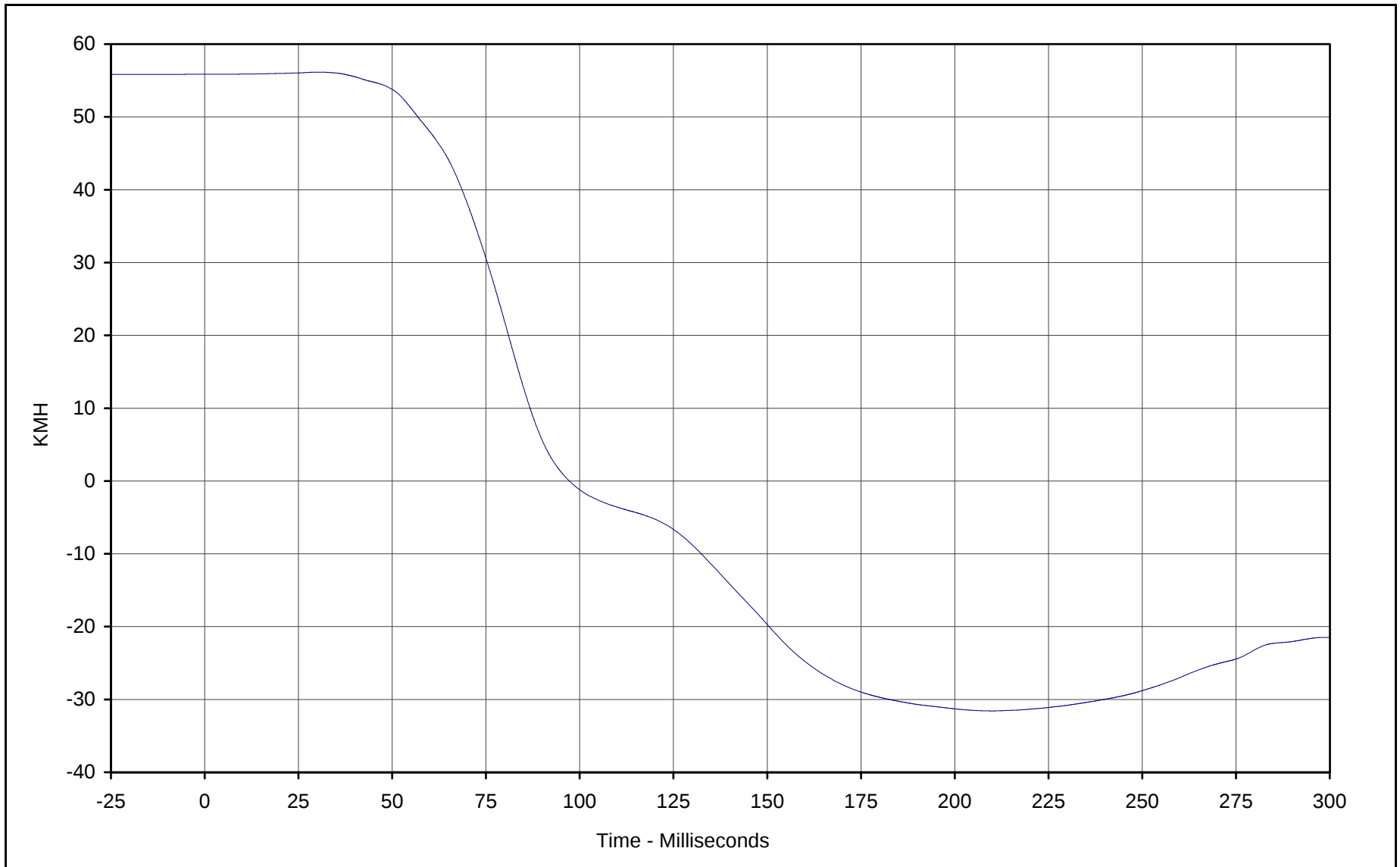


Curve Description: Passenger Head Primary X
Maximum Value: 9.2 at 278.7 Milliseconds
Minimum Value: -52.8 at 80.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-047

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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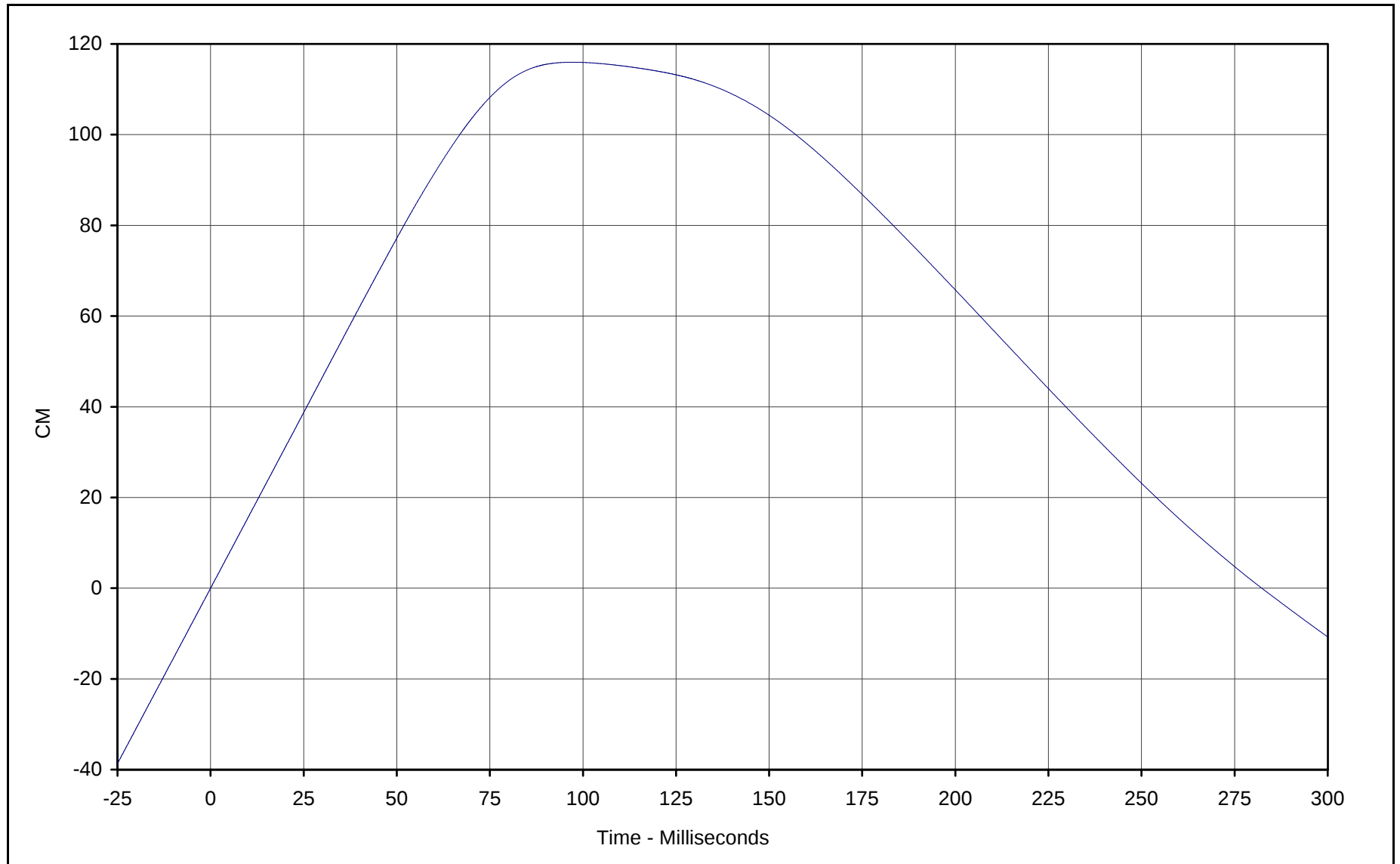


Curve Description: Passenger Head Primary X Velocity
Maximum Value: 56.2 at 30.6 Milliseconds
Minimum Value: -31.6 at 210.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-047

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

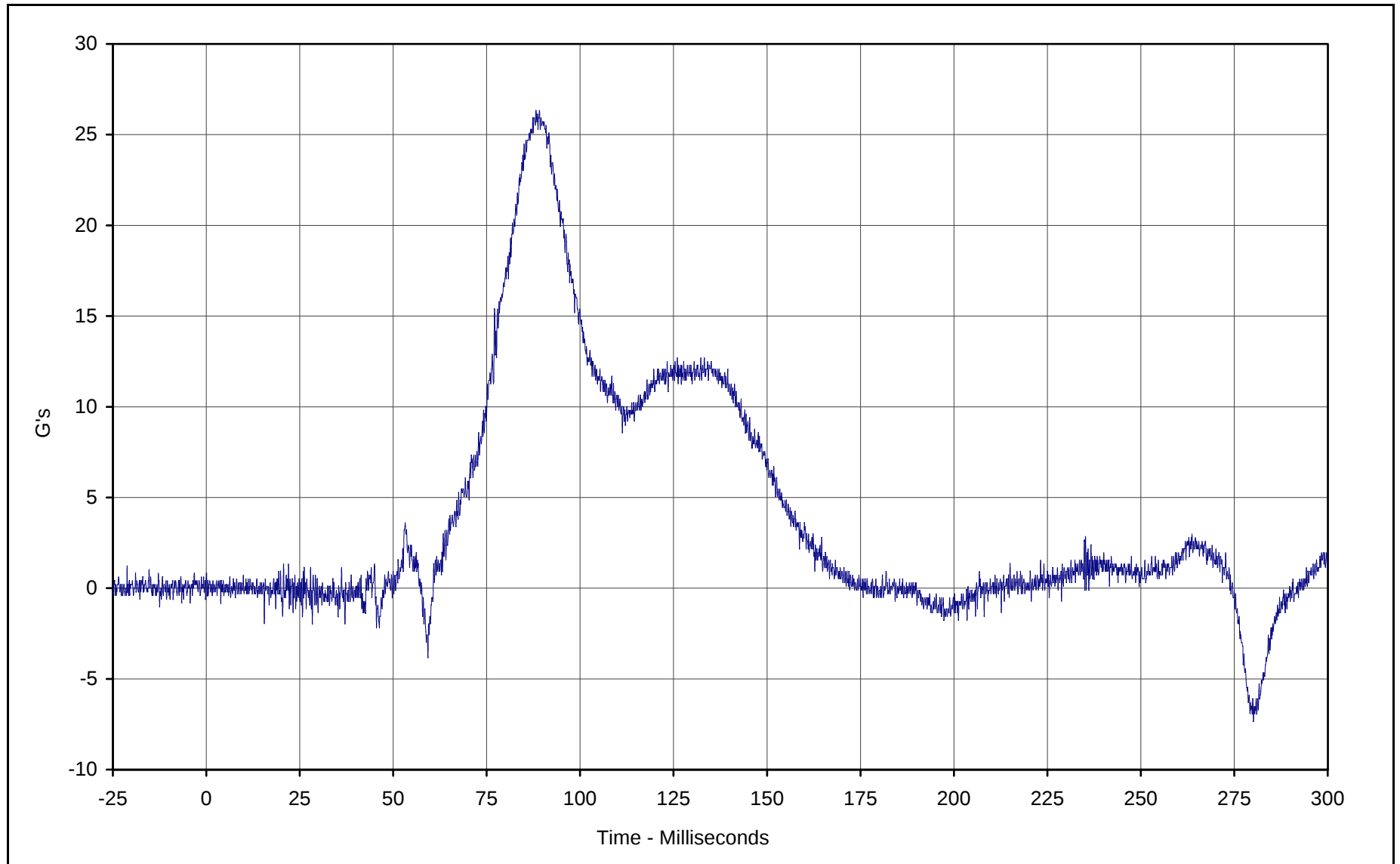


Curve Description: Passenger Head Primary X Displ.
Maximum Value: 116.0 at 97.2 Milliseconds
Minimum Value: -10.7 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-047

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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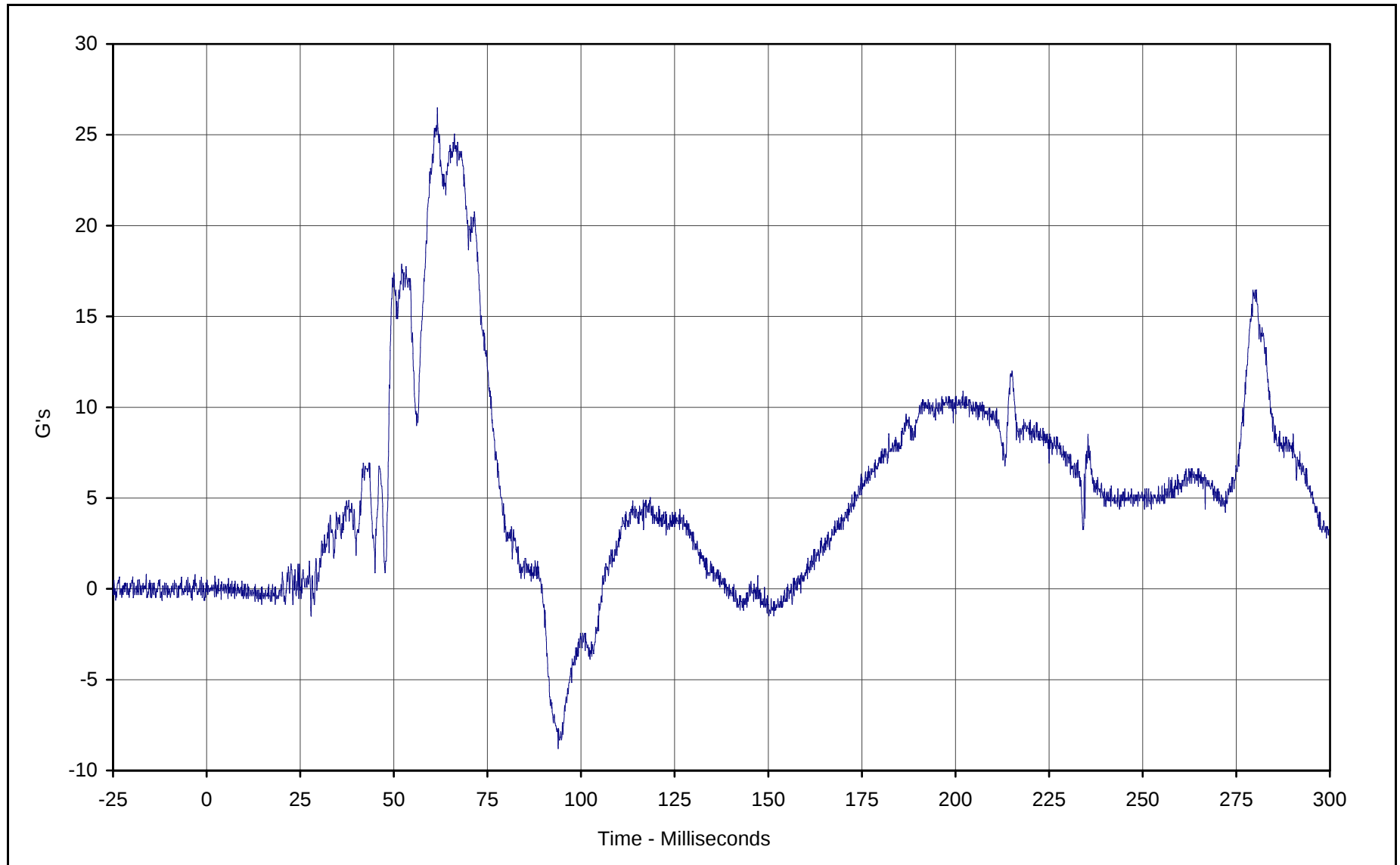
Curve Description: Passenger Head Primary Y
Maximum Value: 26.3 at 88.2 Milliseconds
Minimum Value: -7.3 at 280.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-048

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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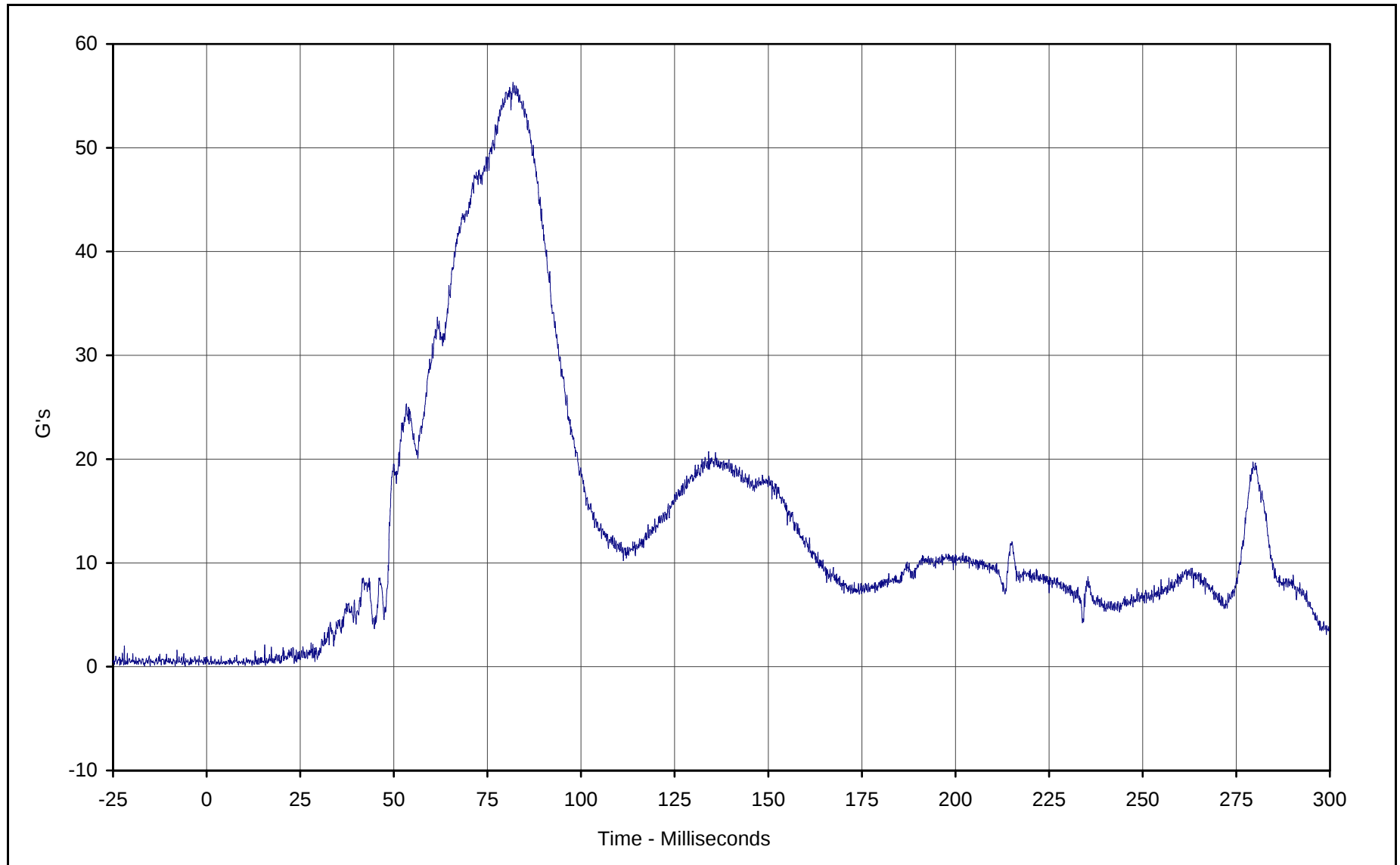


Curve Description: Passenger Head Primary Z
Maximum Value: 26.5 at 61.6 Milliseconds
Minimum Value: -8.8 at 93.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-048

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



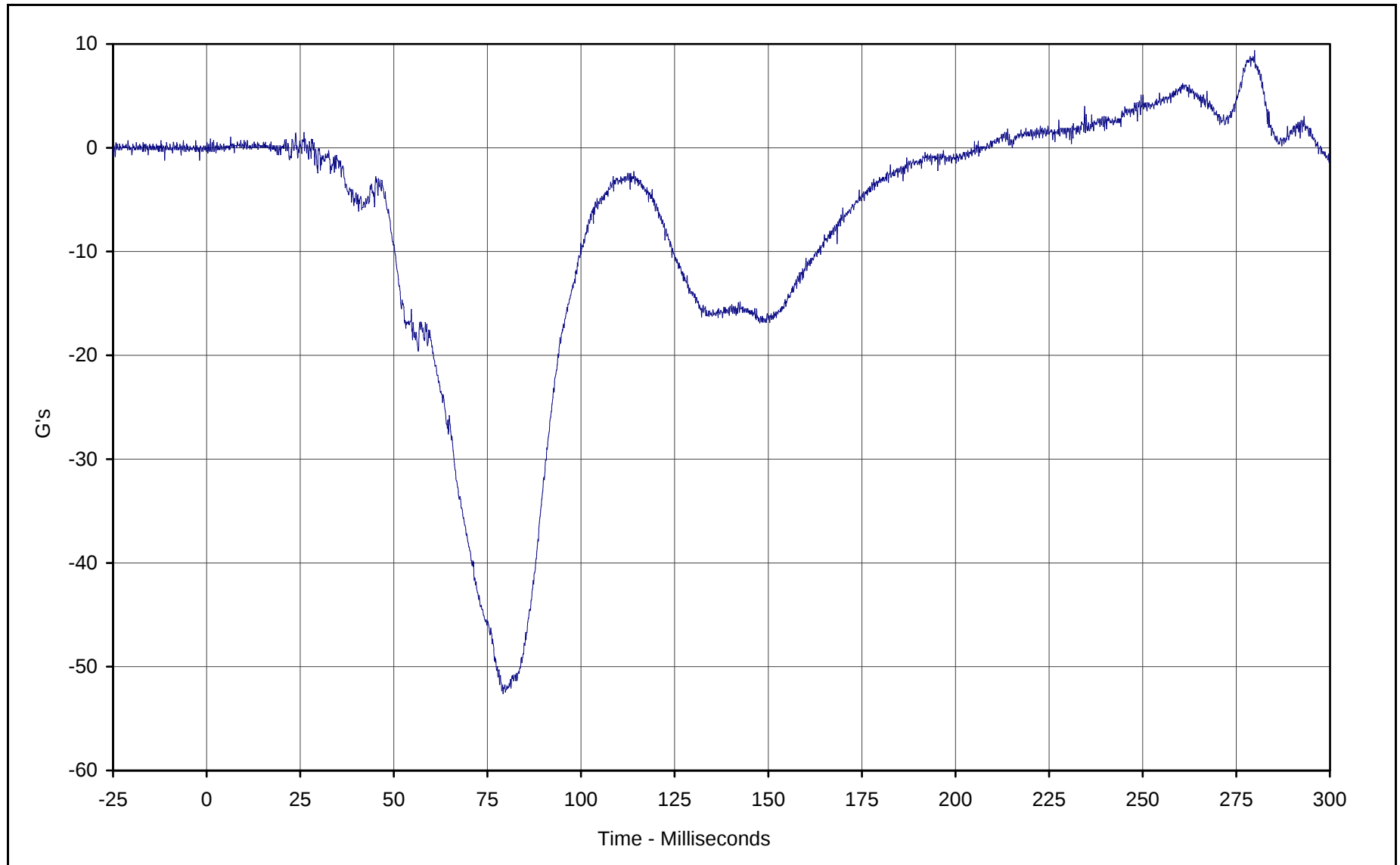
Curve Description: Passenger Head Resultant Primary
Maximum Value: 56.3 at 81.8 Milliseconds
Minimum Value: 0.1 at 12.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-047

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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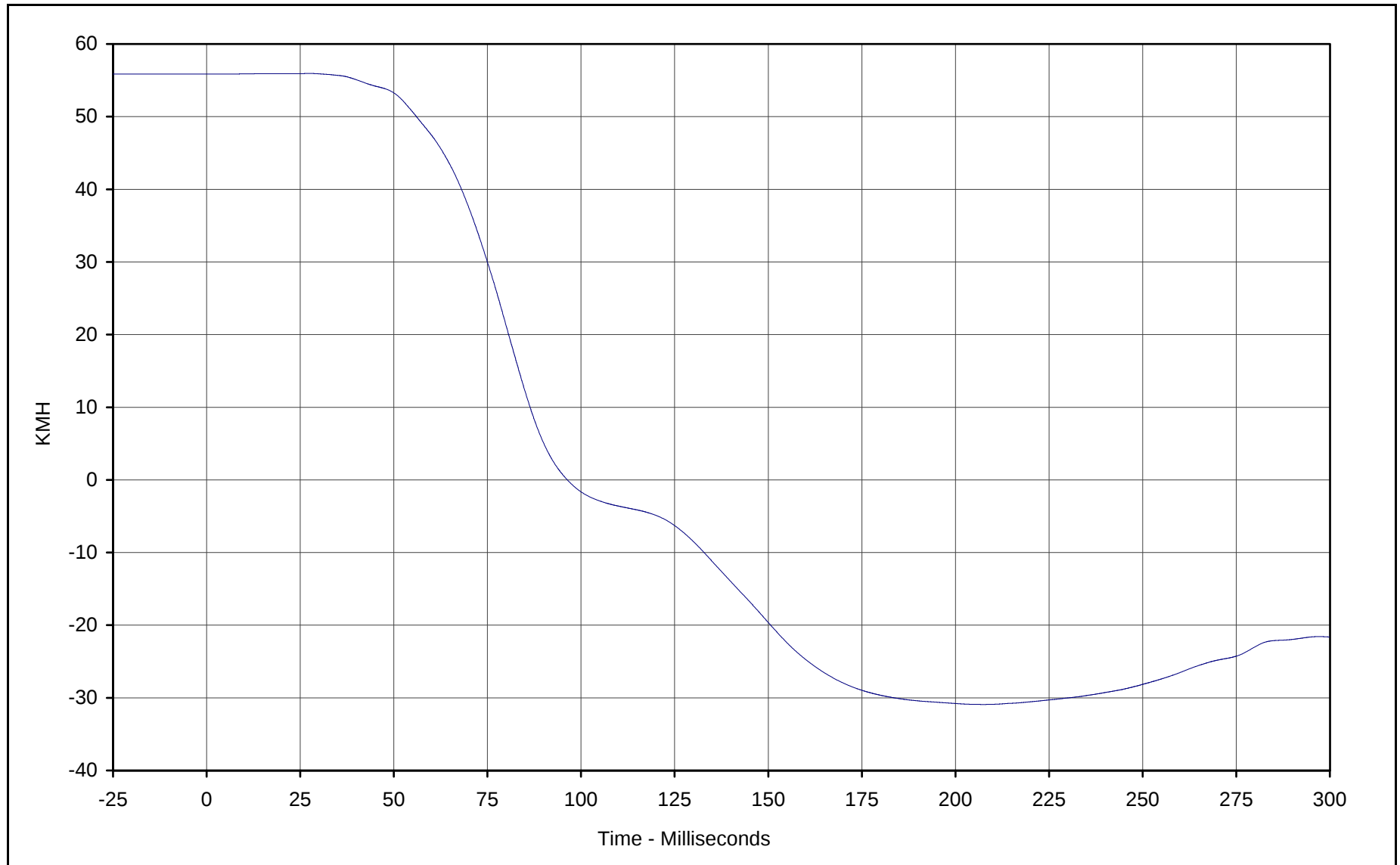
Curve Description: Passenger Head Redundant X
Maximum Value: 9.4 at 279.9 Milliseconds
Minimum Value: -52.6 at 79.2 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-050

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

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Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 55.9 at 26.9 Milliseconds

Minimum Value: -30.9 at 207.5 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: IN1-050

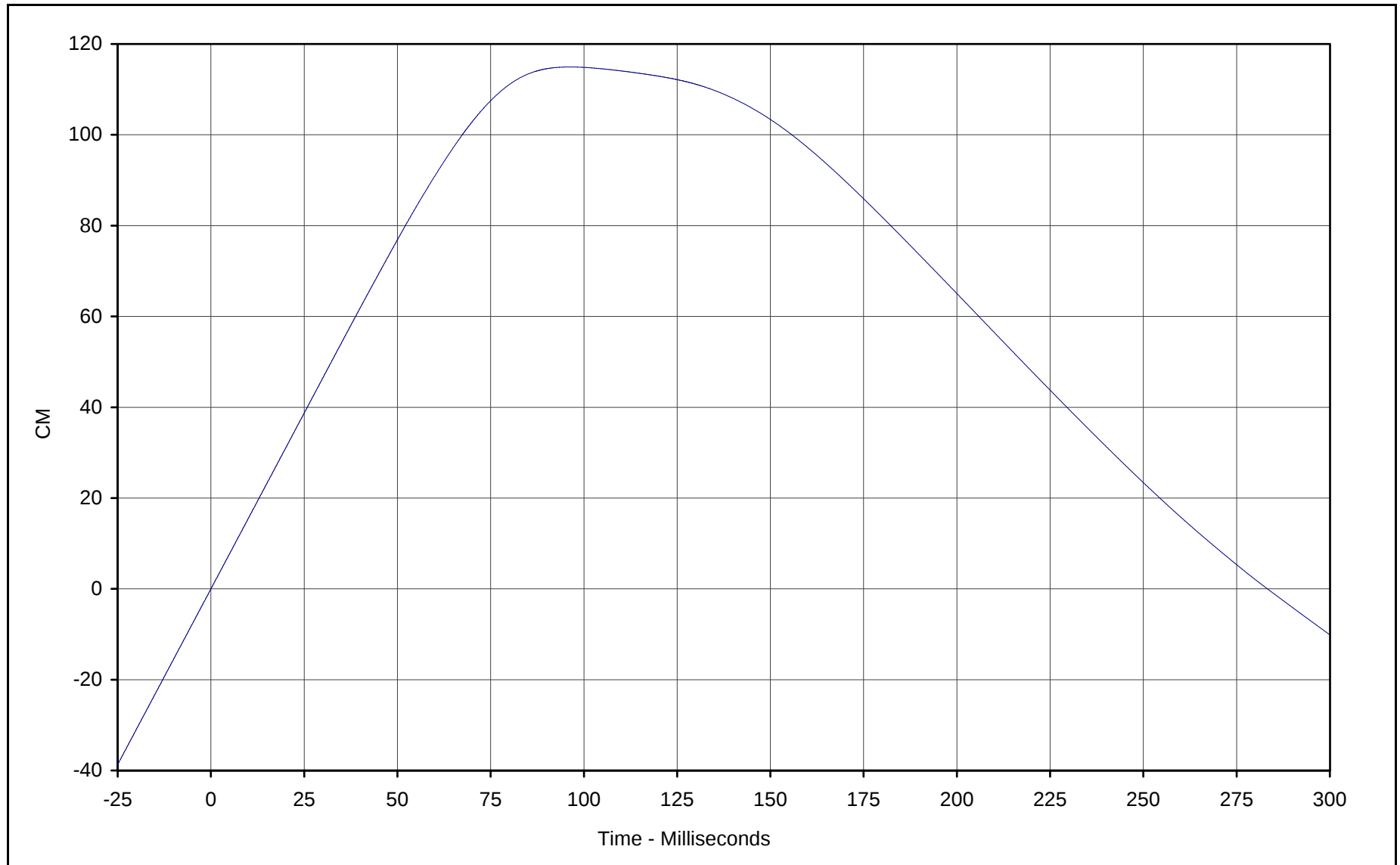
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

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Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 114.9 at 96.3 Milliseconds

Minimum Value: -10.1 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

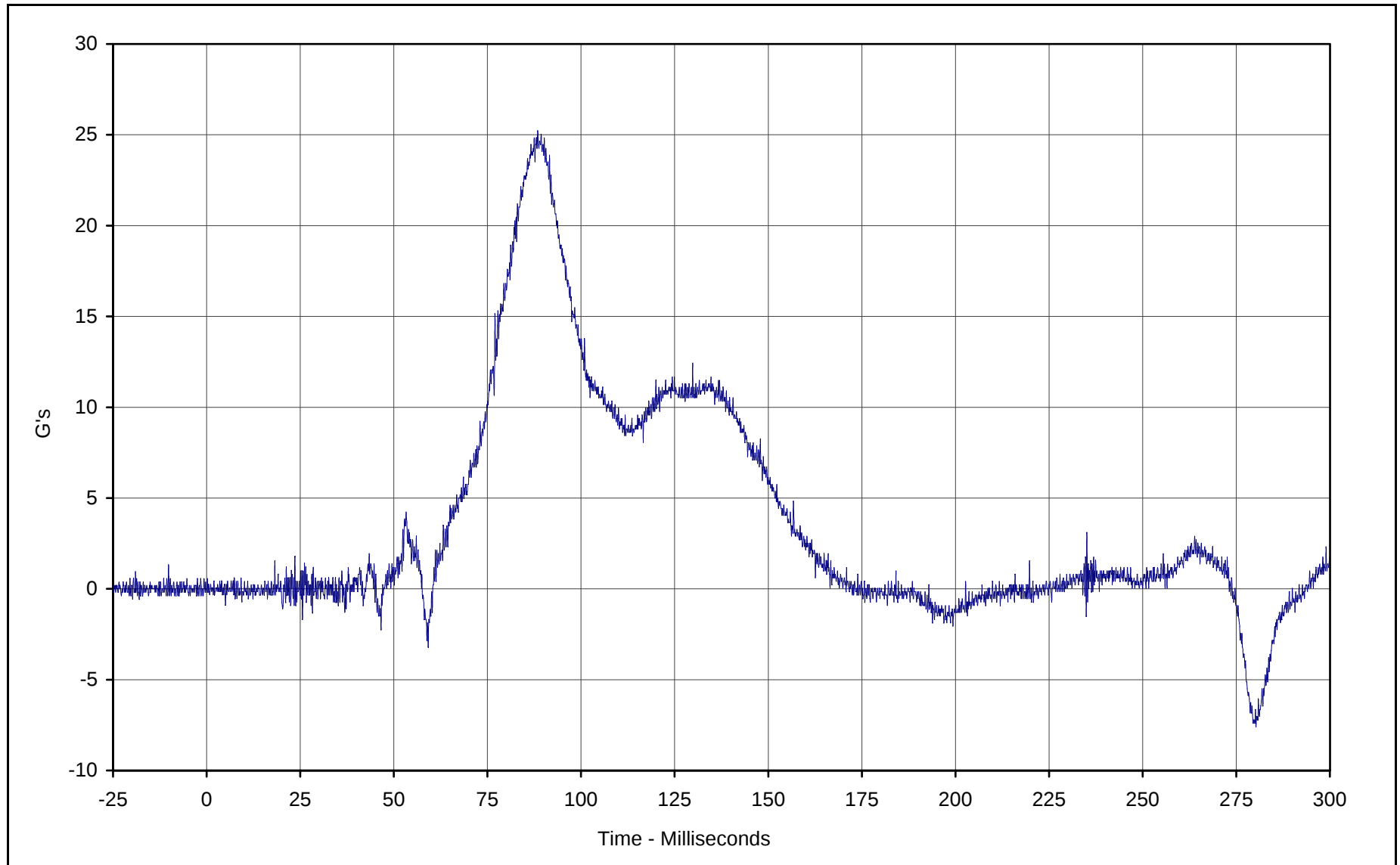
Curve Number: IN2-050

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



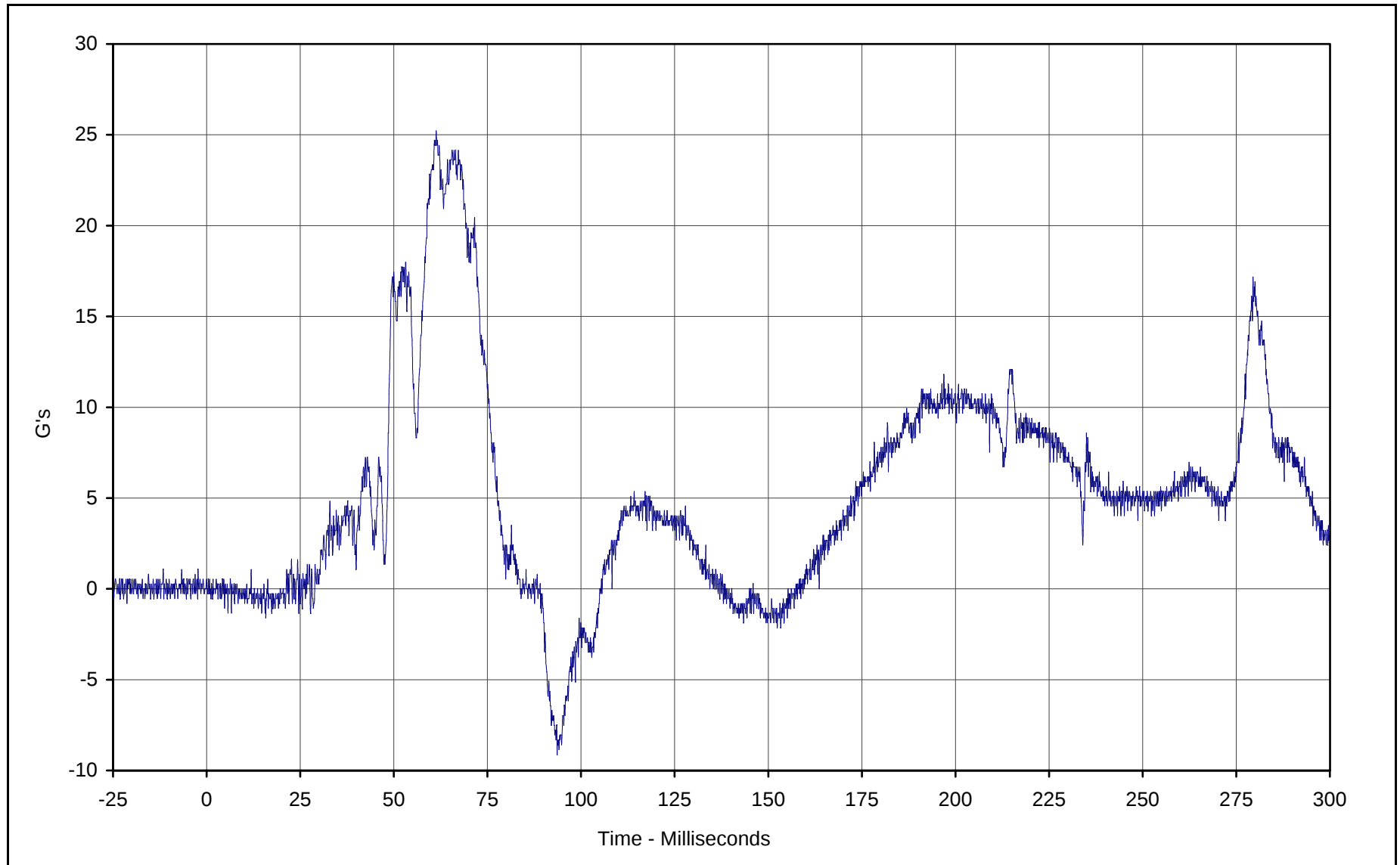
KAR22001-02



Curve Description: Passenger Head Redundant Y
Maximum Value: 25.2 at 88.4 Milliseconds
Minimum Value: -7.6 at 280.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-051

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



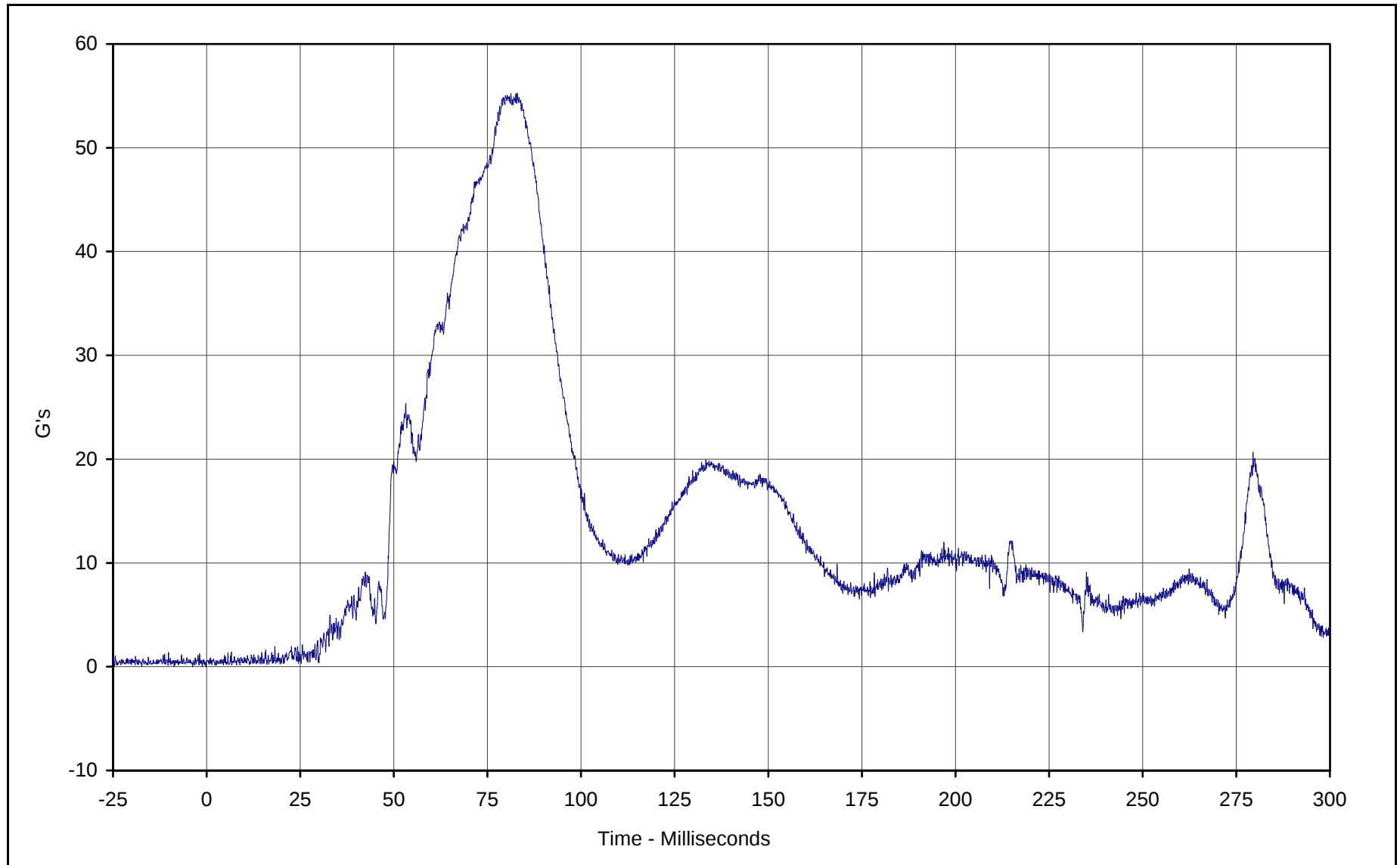


Curve Description: Passenger Head Redundant Z
Maximum Value: 25.2 at 61.3 Milliseconds
Minimum Value: -9.1 at 93.6 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-052

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Head Resultant Redundant

Maximum Value: 55.3 at 82.9 Milliseconds

Minimum Value: 0.1 at 2.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/13/01

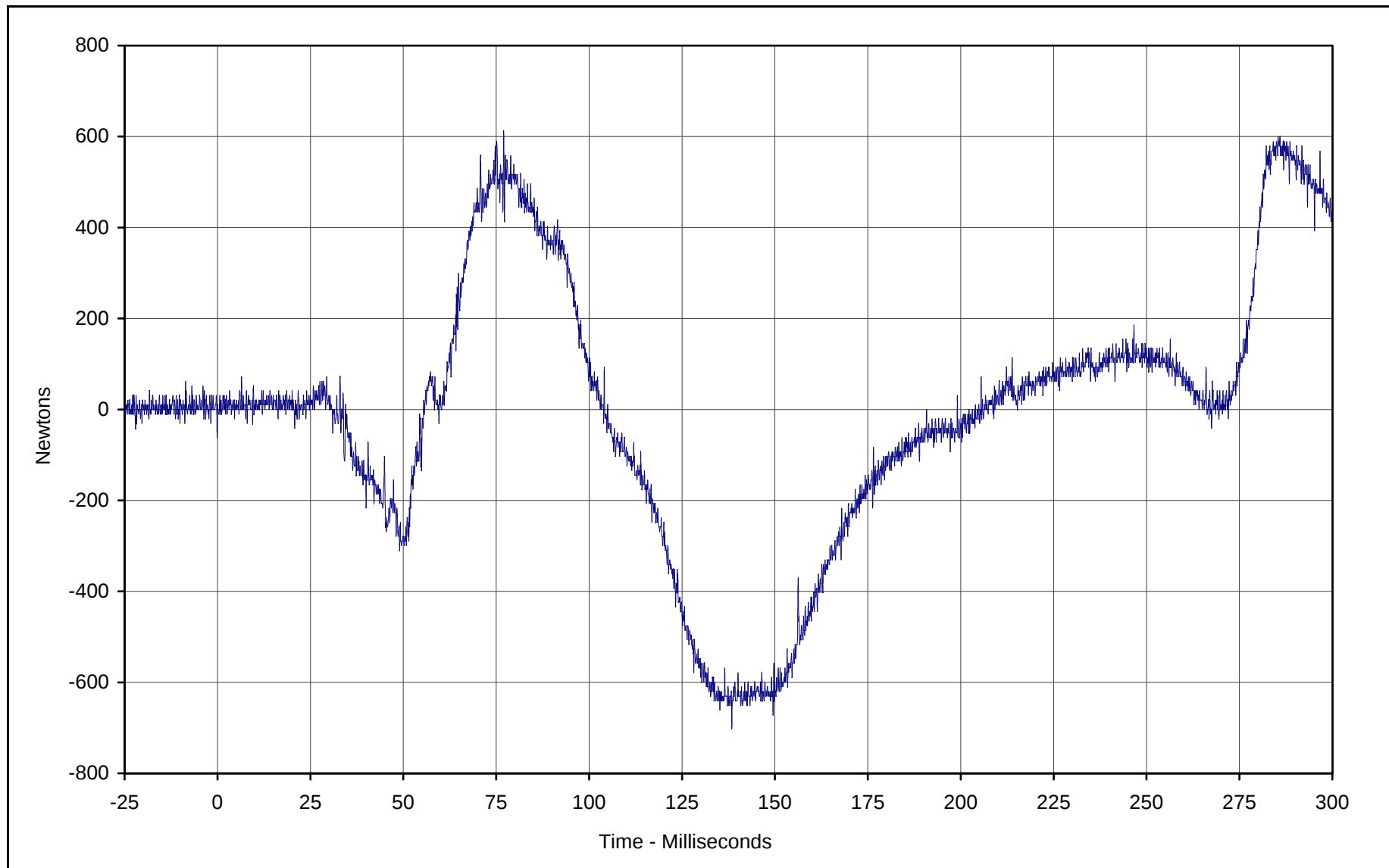
Curve Number: RES-050

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



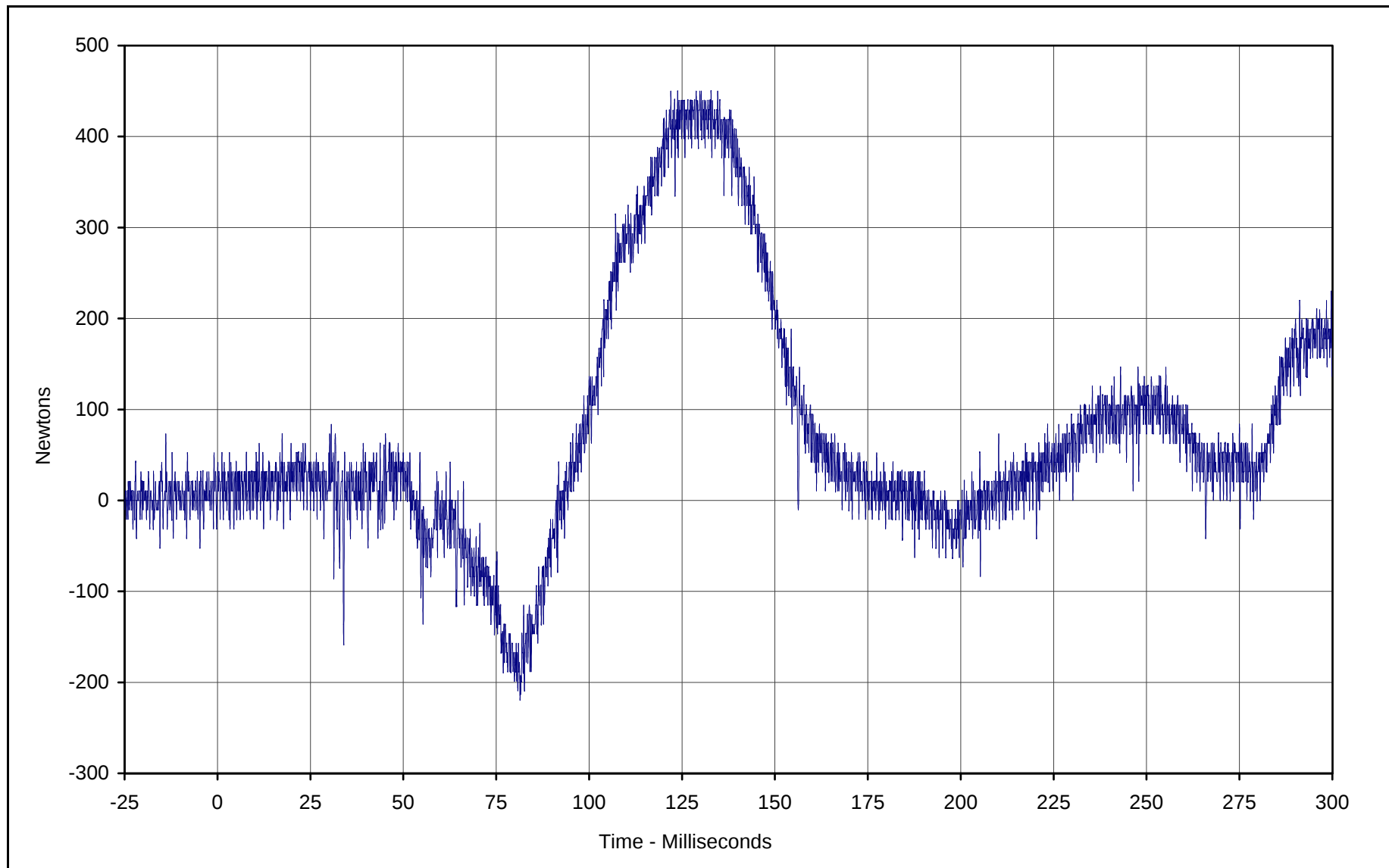
KAR22001-02



Curve Description: Passenger Neck Force X
Maximum Value: 612.4 at 77.0 Milliseconds
Minimum Value: -702.7 at 138.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-053

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



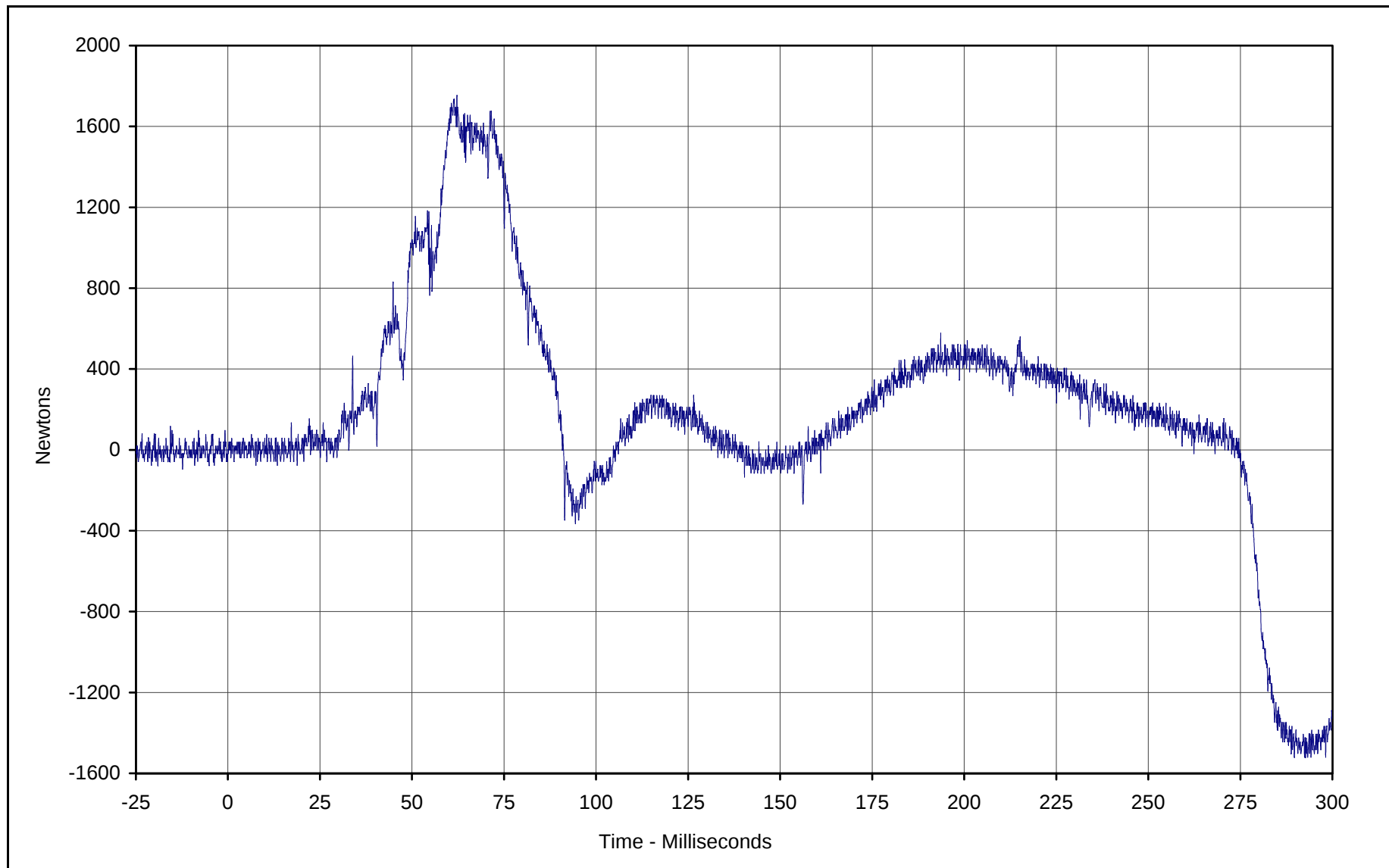


Curve Description: Passenger Neck Force Y
Maximum Value: 450.1 at 122.0 Milliseconds
Minimum Value: -219.8 at 81.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-054

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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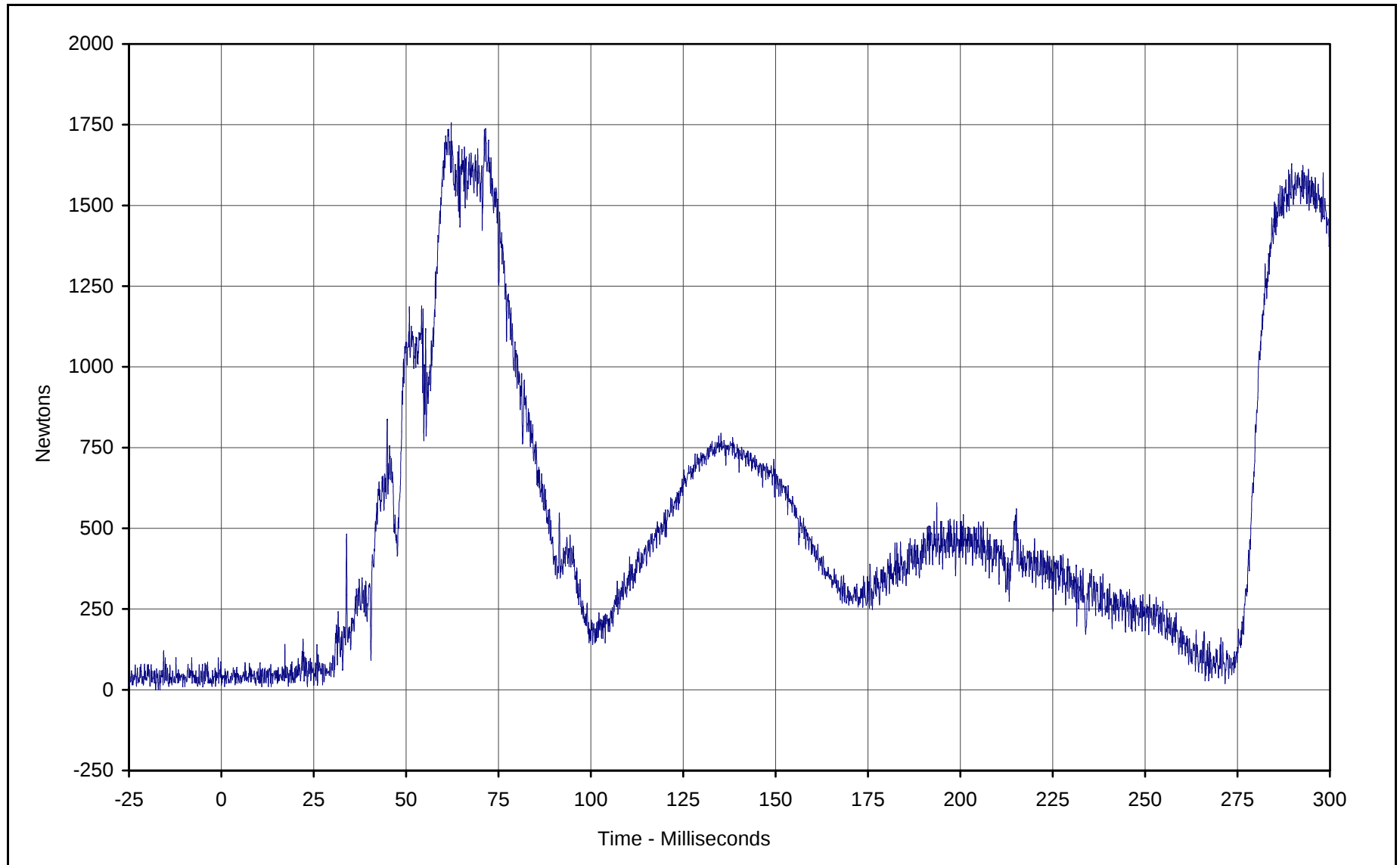


Curve Description: Passenger Neck Force Z
Maximum Value: 1752.3 at 62.2 Milliseconds
Minimum Value: -1521.2 at 289.7 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-055

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

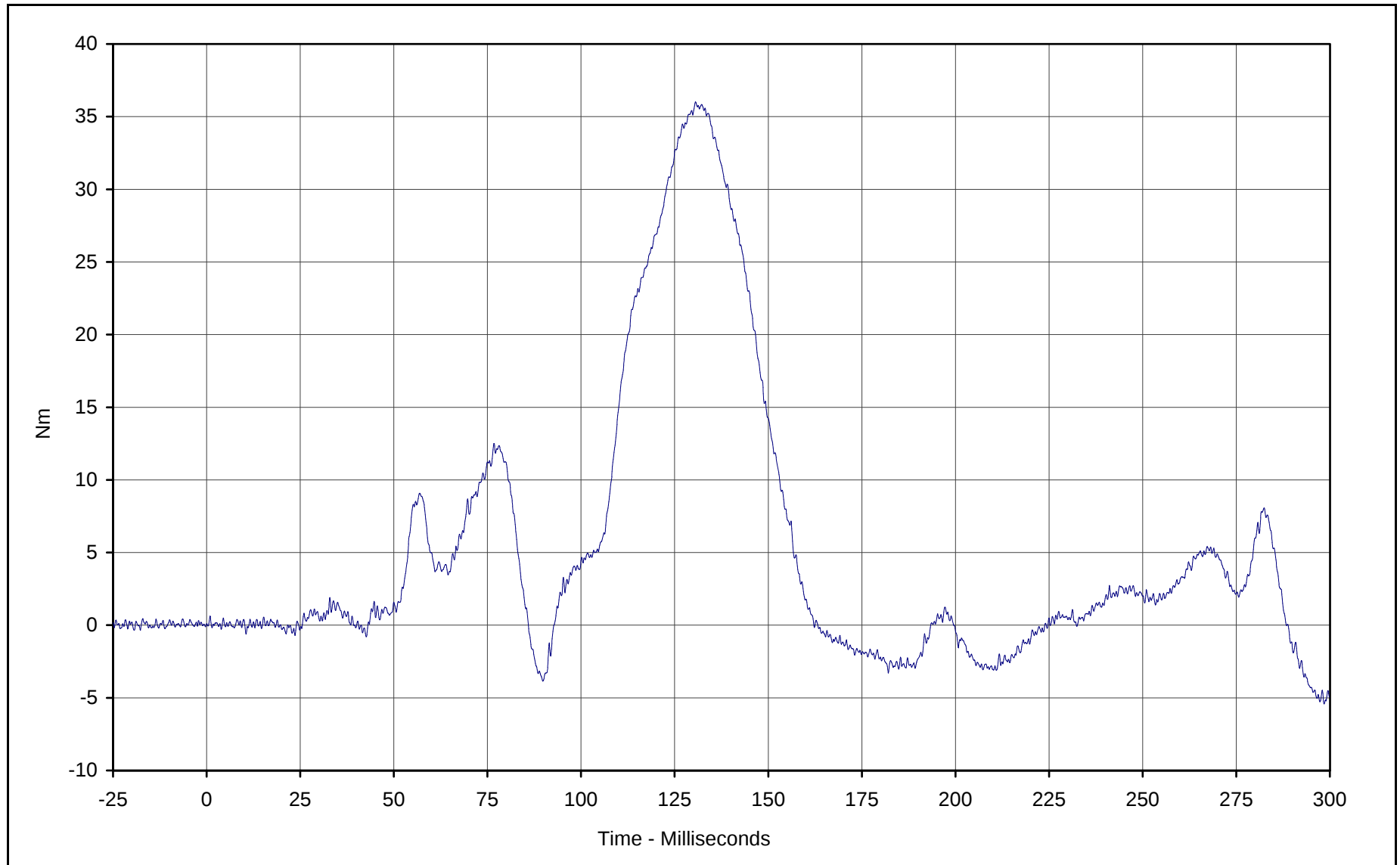


Curve Description: Passenger Neck Force Resultant
Maximum Value: 1754.9 at 62.2 Milliseconds
Minimum Value: 10.3 at 10.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-053

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

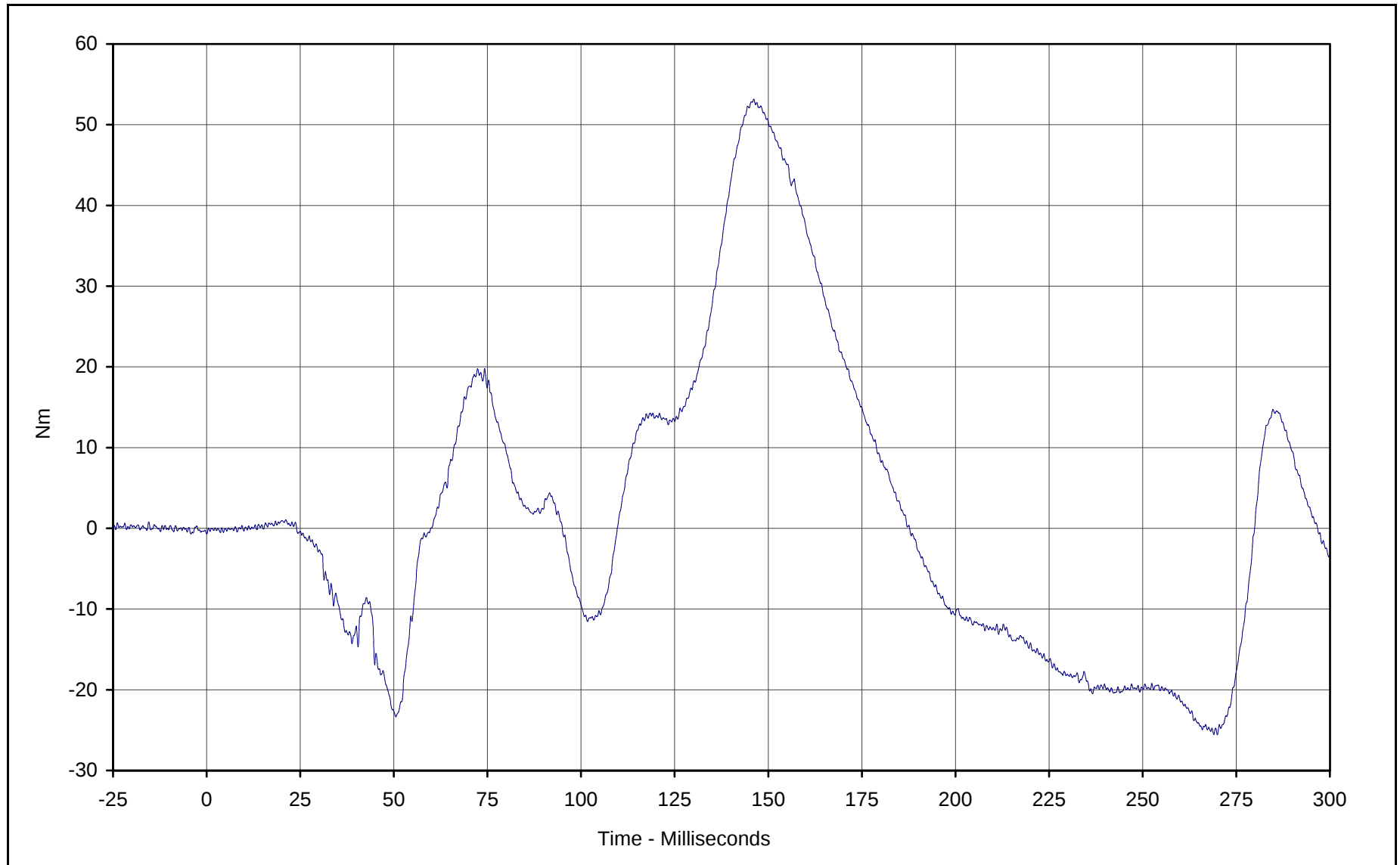




Curve Description: Passenger Neck Moment X
Maximum Value: 36.0 at 130.6 Milliseconds
Minimum Value: -5.4 at 298.5 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-056

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

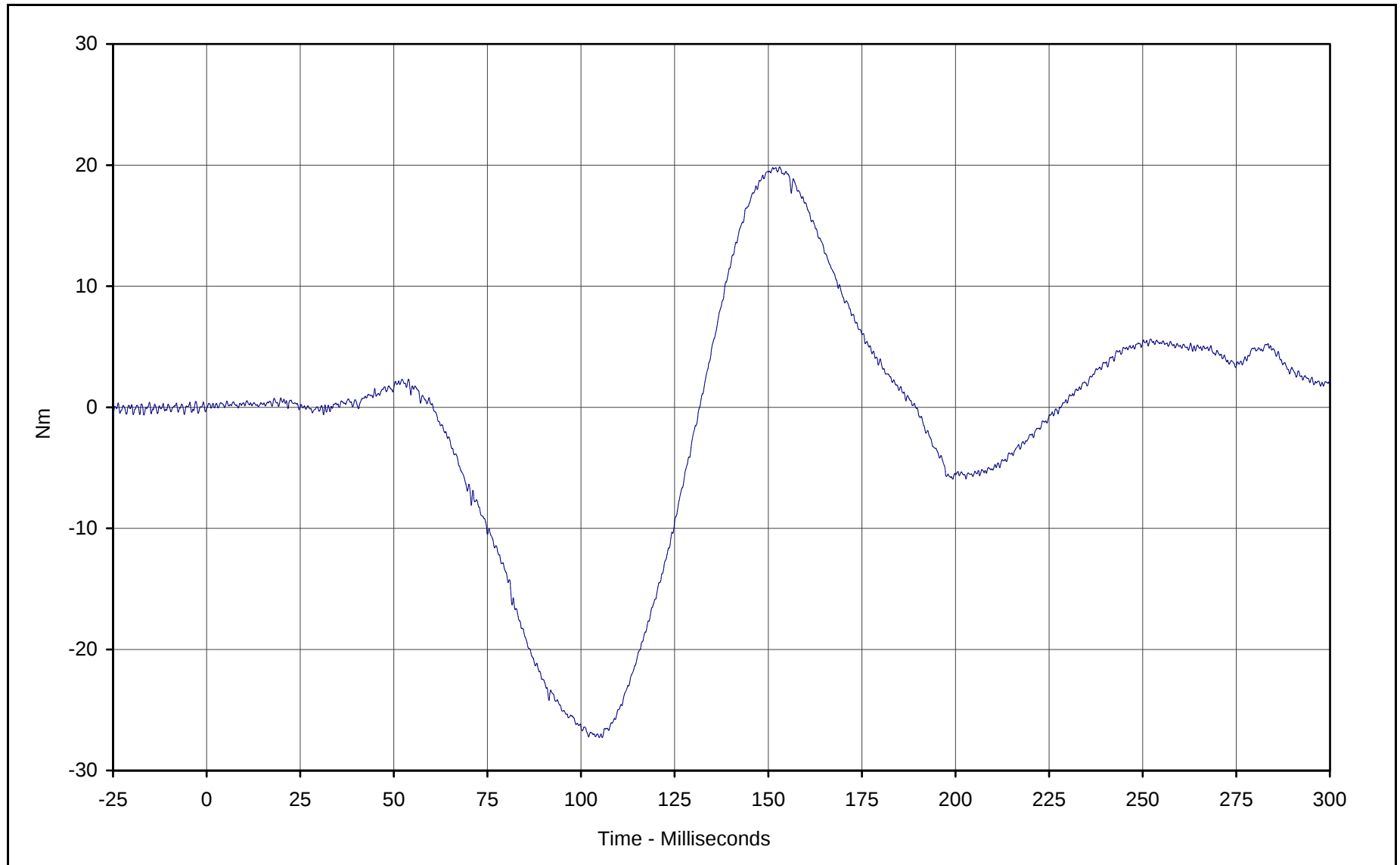




Curve Description: Passenger Neck Moment Y
Maximum Value: 53.2 at 146.1 Milliseconds
Minimum Value: -25.6 at 270.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-057

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

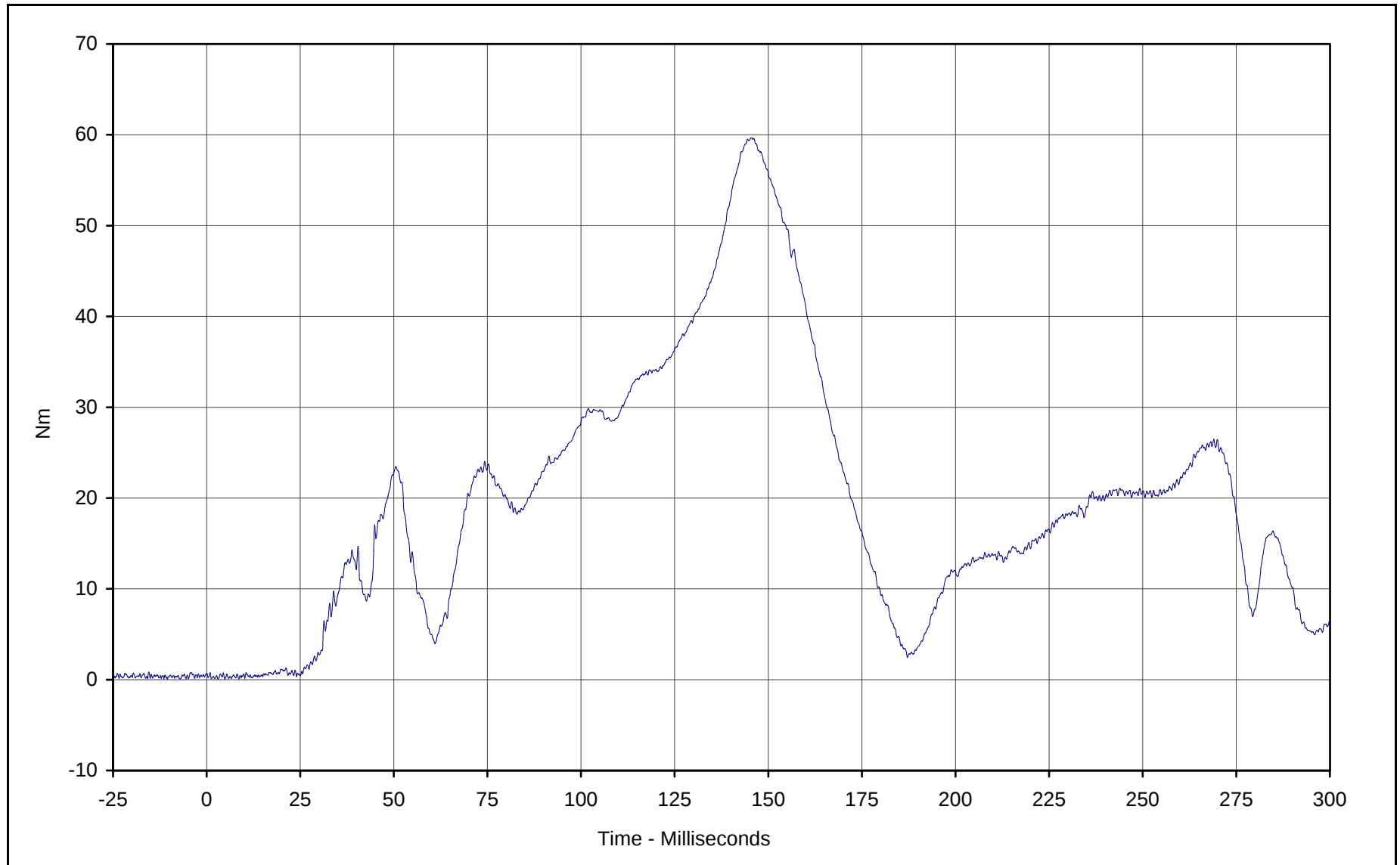




Curve Description: Passenger Neck Moment Z
Maximum Value: 19.8 at 153.1 Milliseconds
Minimum Value: -27.3 at 105.7 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-058

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



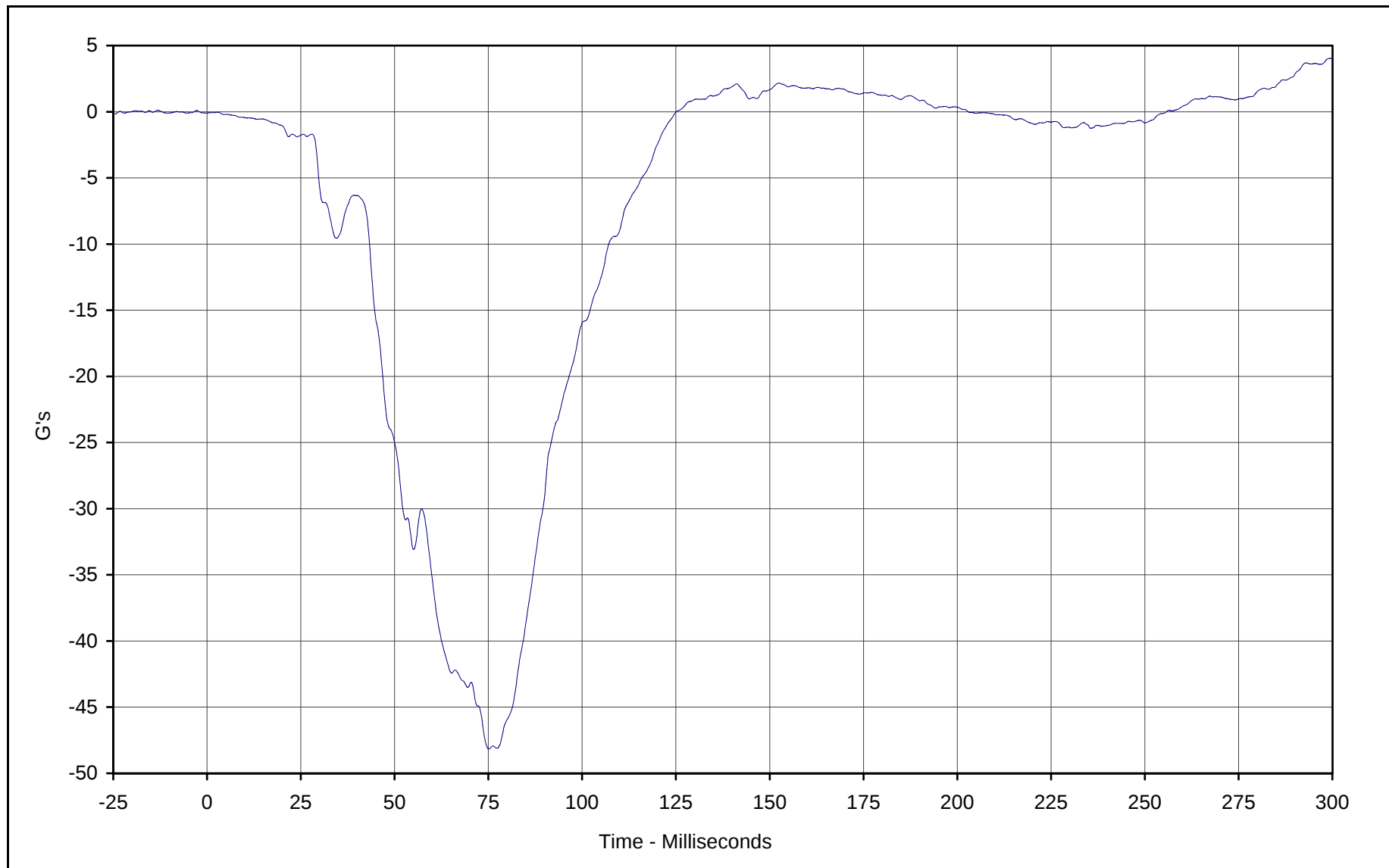


Curve Description: Passenger Neck Moment Resultant
Maximum Value: 59.7 at 145.5 Milliseconds
Minimum Value: 0.1 at 3.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: RES-056

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



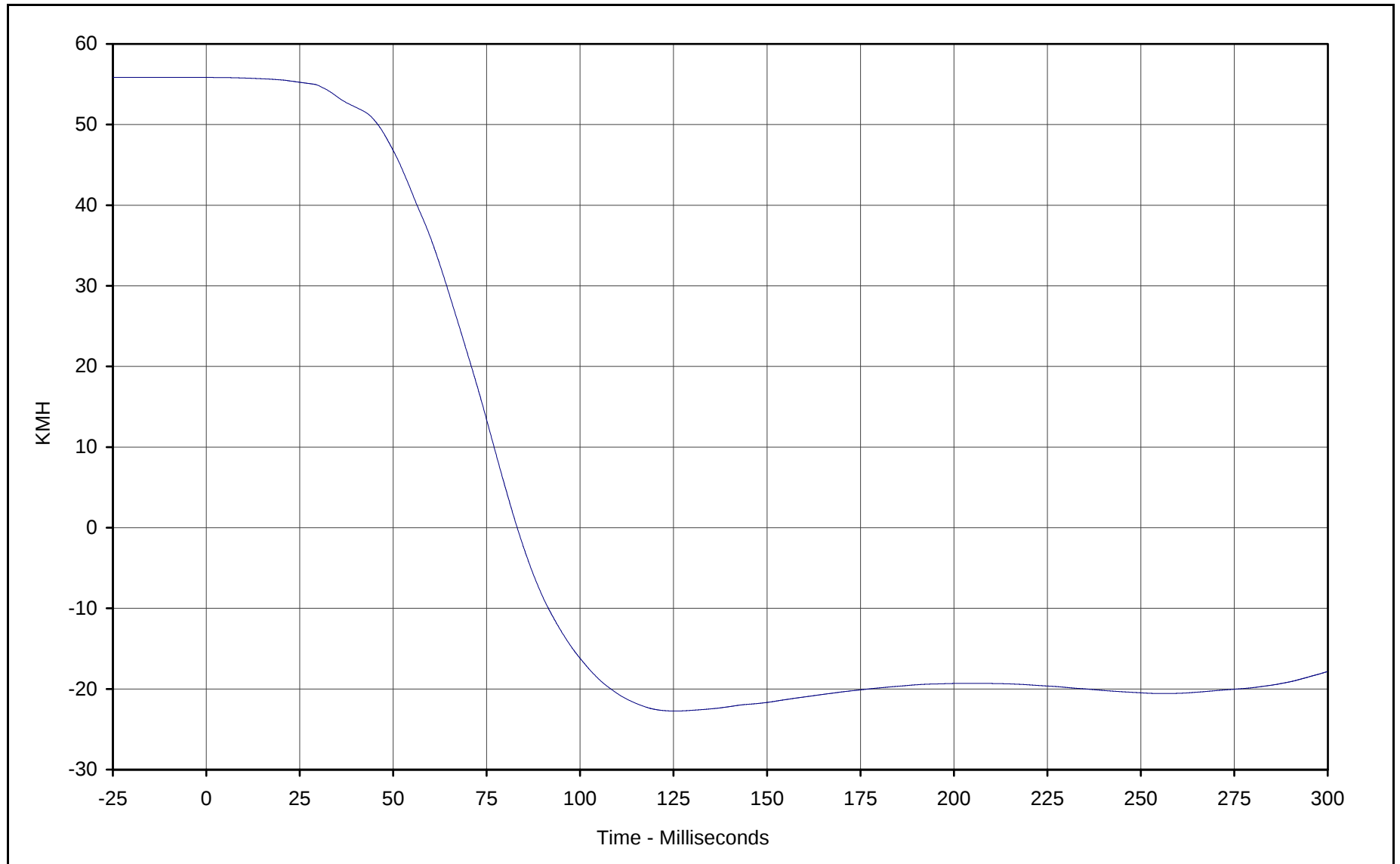


Curve Description: Passenger Chest Primary X
Maximum Value: 4.0 at 299.4 Milliseconds
Minimum Value: -48.2 at 75.1 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-059

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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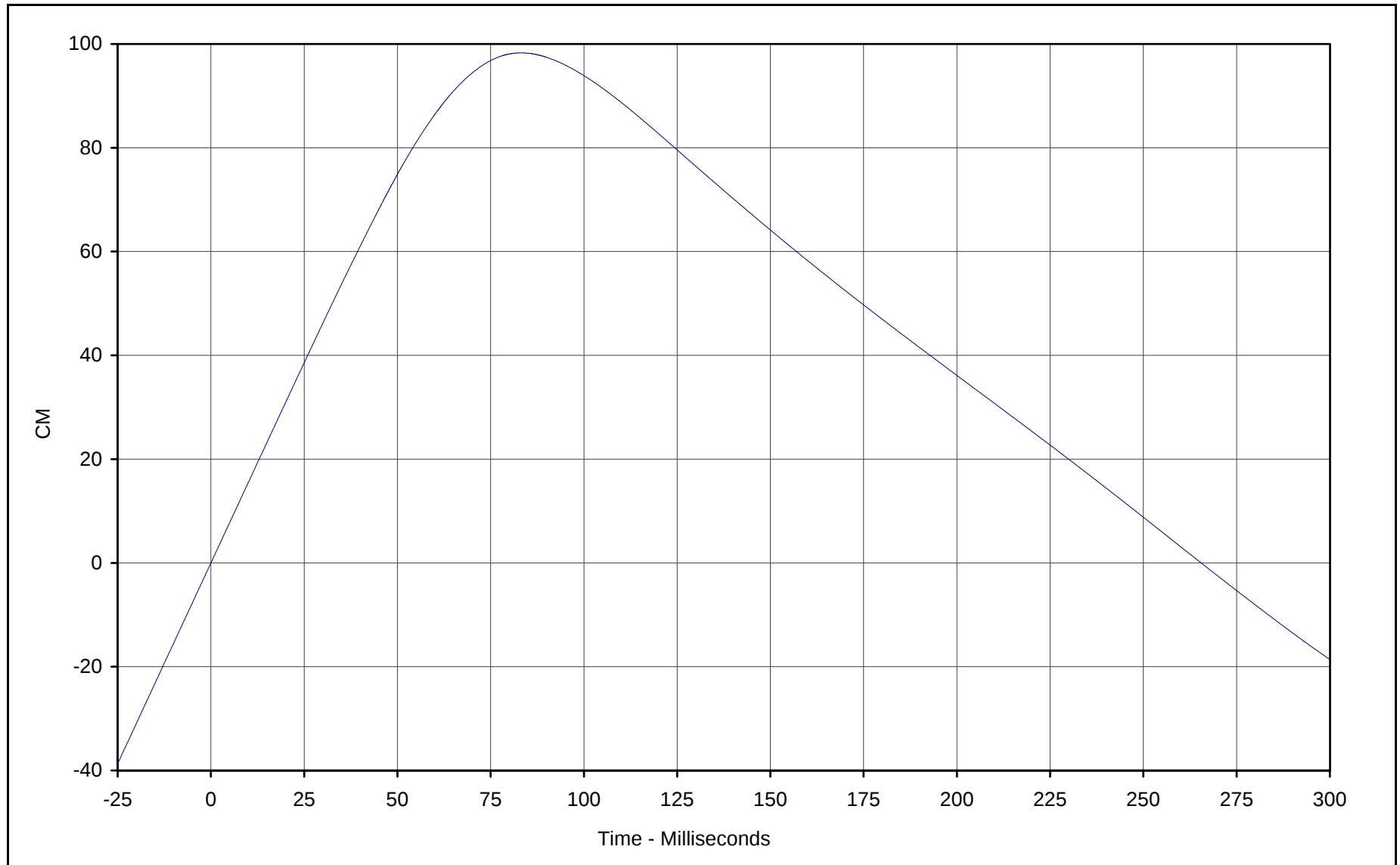


Curve Description: Passenger Chest Primary X Velocity
Maximum Value: 55.8 at 0.0 Milliseconds
Minimum Value: -22.7 at 125.1 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-059

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



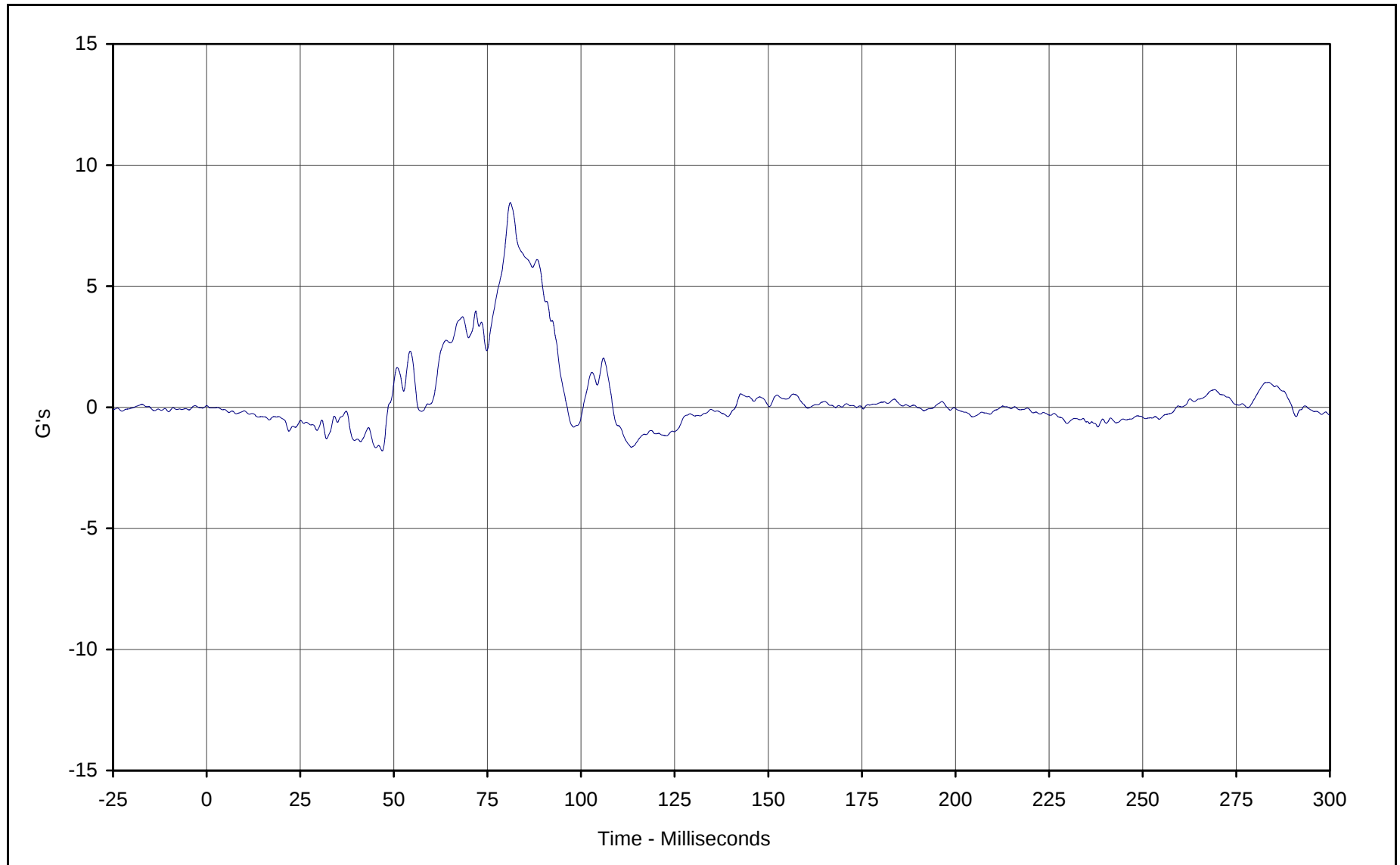
Curve Description: Passenger Chest Primary X Displ.
Maximum Value: 98.3 at 83.2 Milliseconds
Minimum Value: -18.6 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-059

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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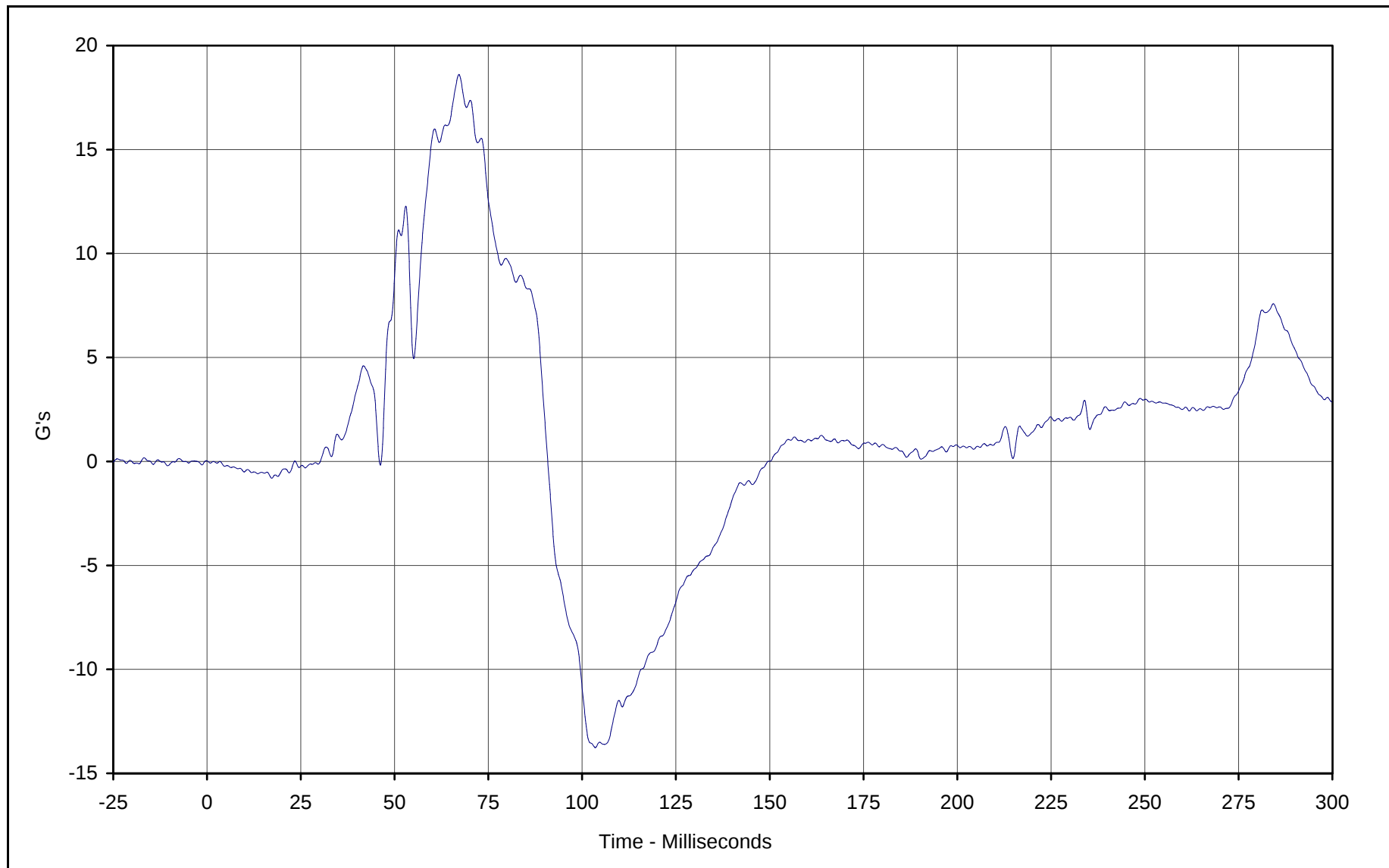
Curve Description: Passenger Chest Primary Y
Maximum Value: 8.5 at 81.1 Milliseconds
Minimum Value: -1.8 at 46.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-060

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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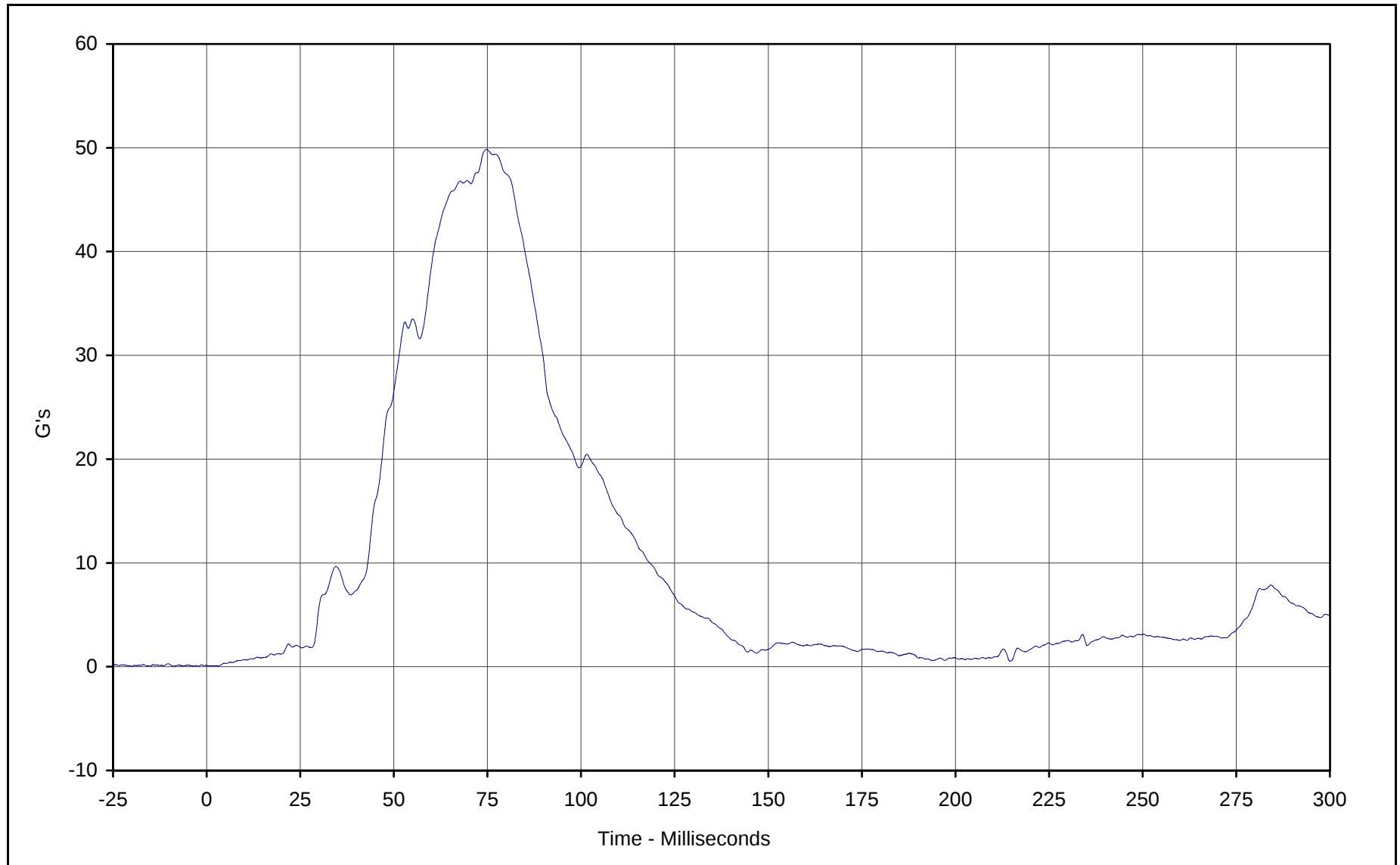


Curve Description: Passenger Chest Primary Z
Maximum Value: 18.6 at 67.2 Milliseconds
Minimum Value: -13.8 at 103.5 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-061

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



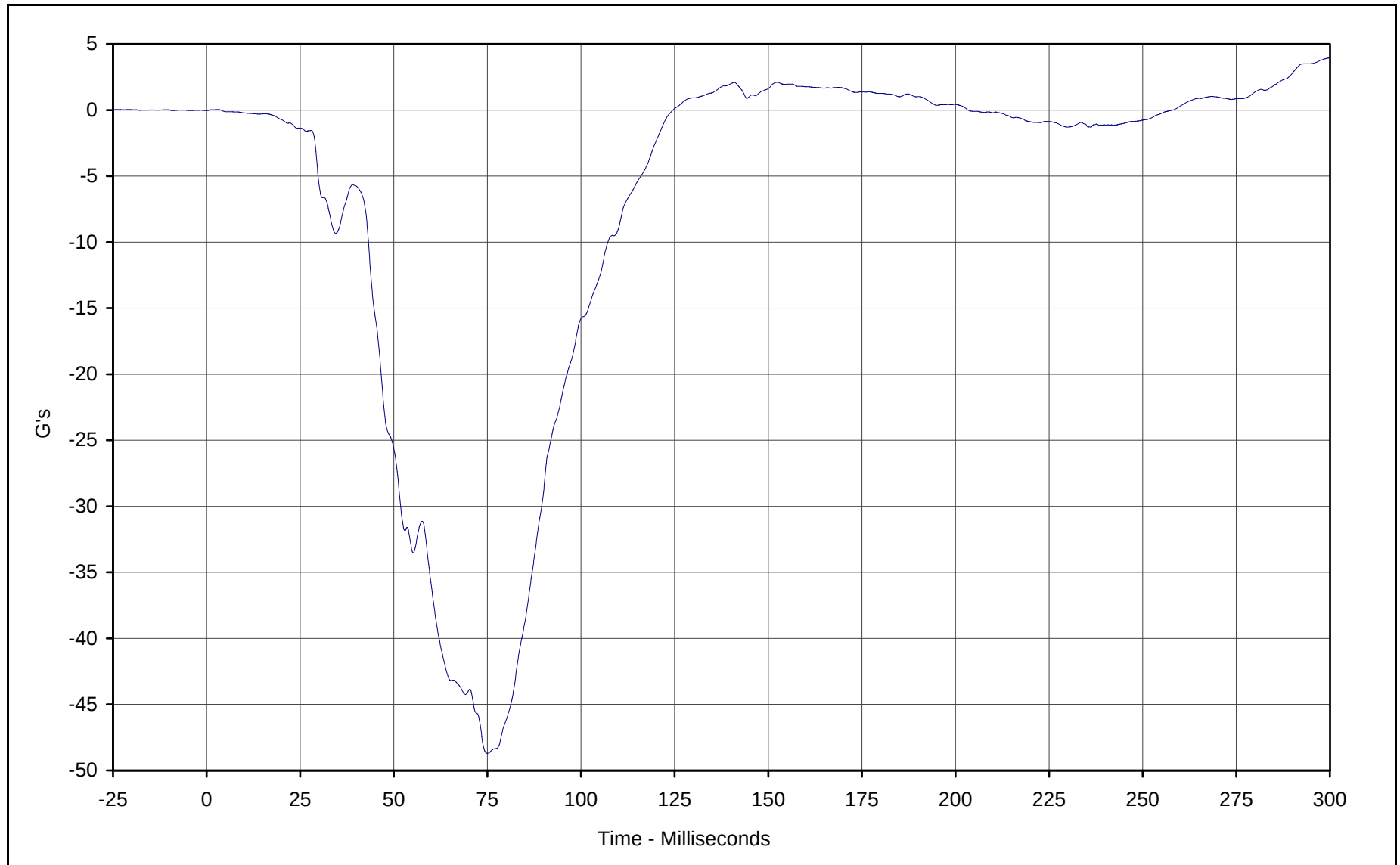
Curve Description: Passenger Chest Resultant Primary
Maximum Value: 49.8 at 74.8 Milliseconds
Minimum Value: 0.0 at 3.1 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: RES-059

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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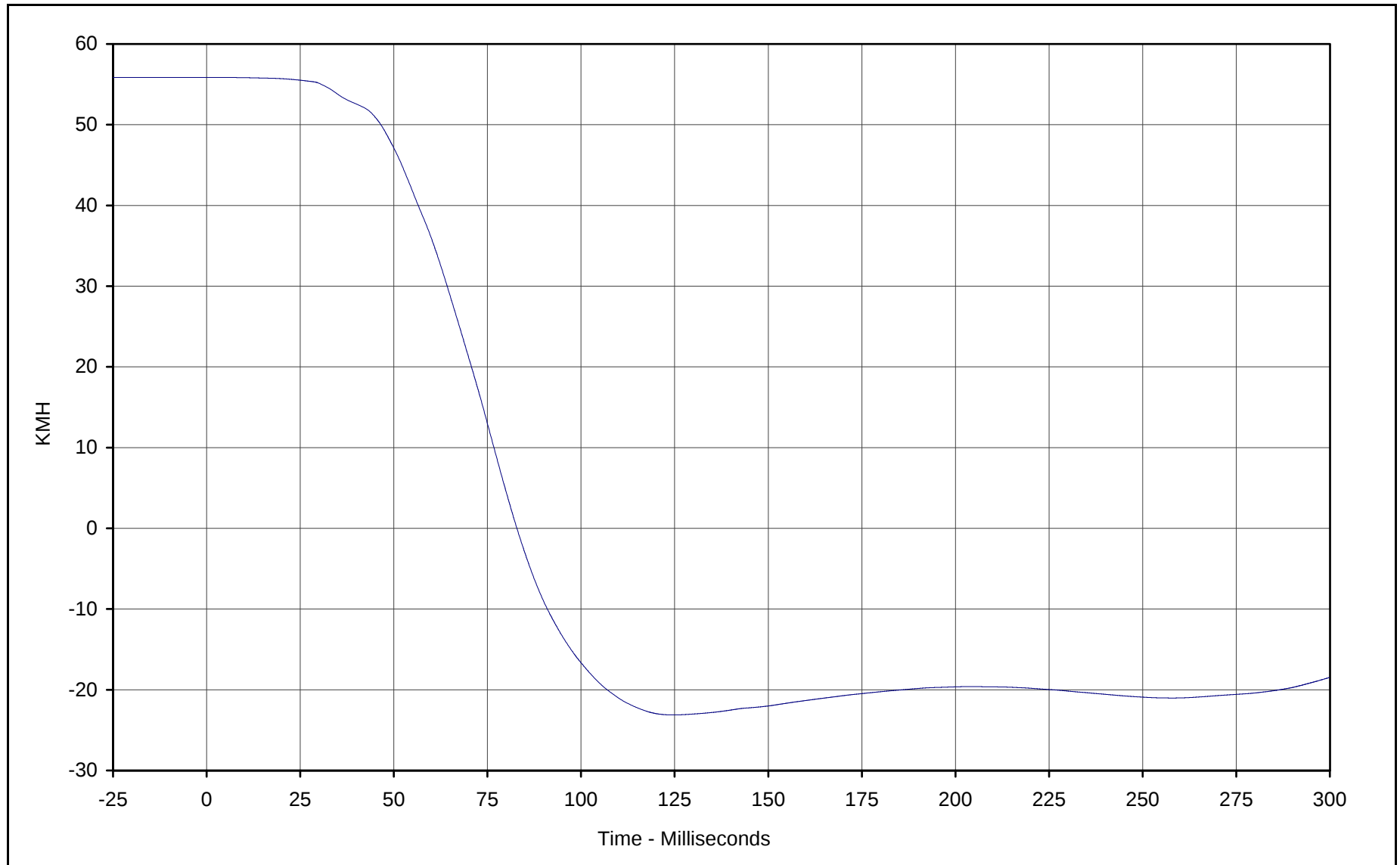


Curve Description: Passenger Chest Redundant X
Maximum Value: 4.0 at 299.9 Milliseconds
Minimum Value: -48.7 at 74.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-062

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 55.9 at 3.8 Milliseconds

Minimum Value: -23.1 at 124.5 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

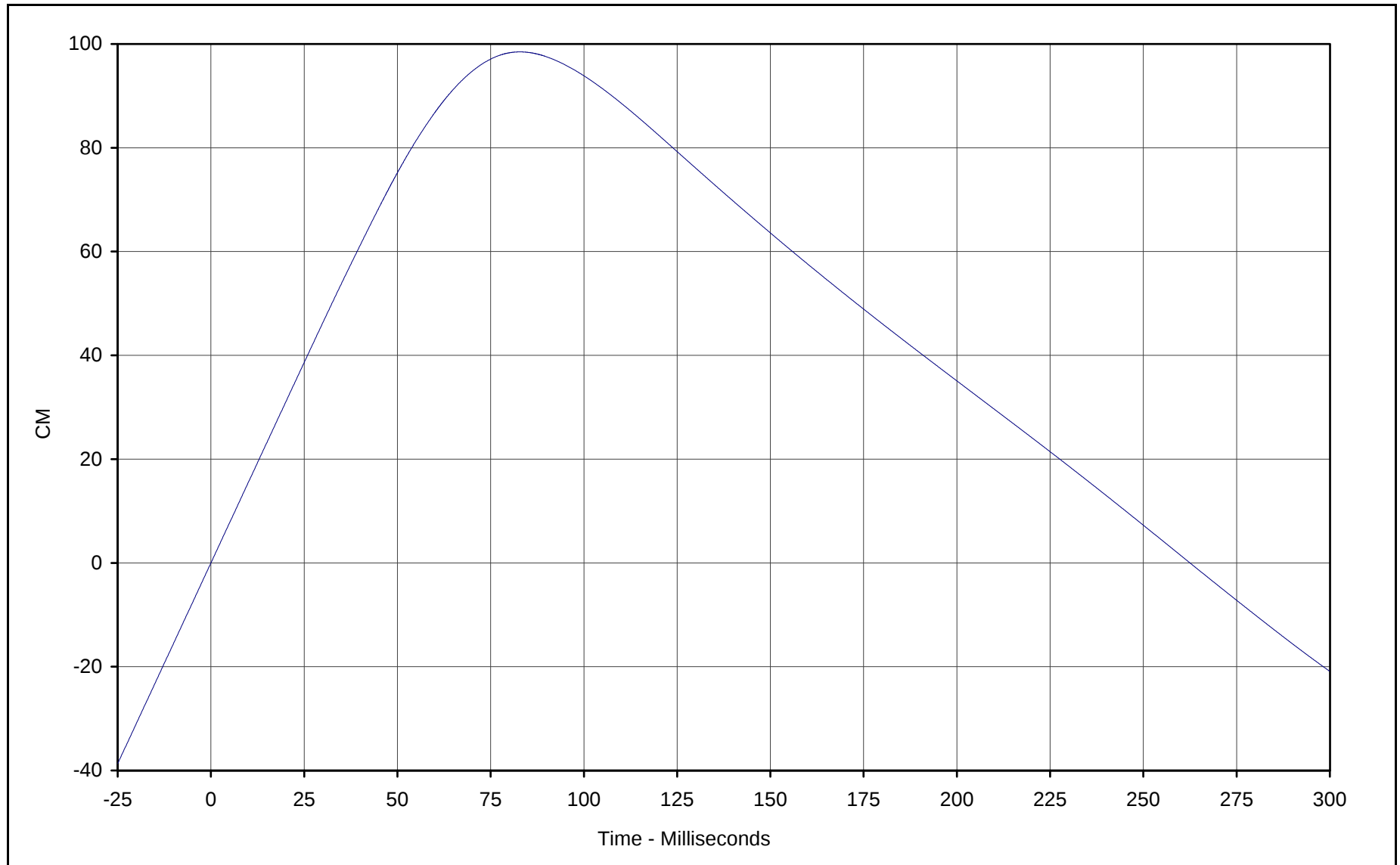
Curve Number: IN1-062

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 98.5 at 82.9 Milliseconds

Minimum Value: -20.8 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: IN2-062

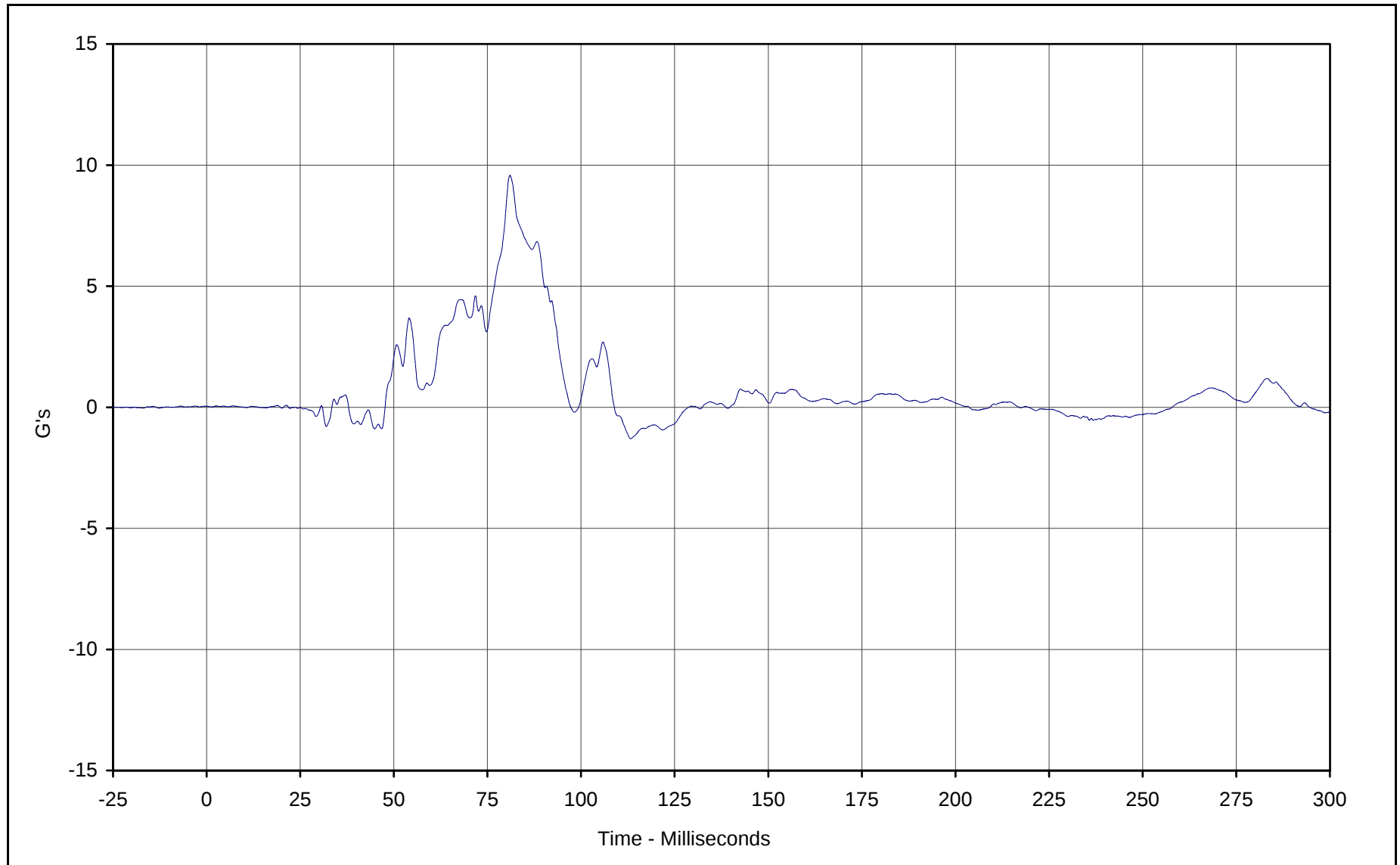
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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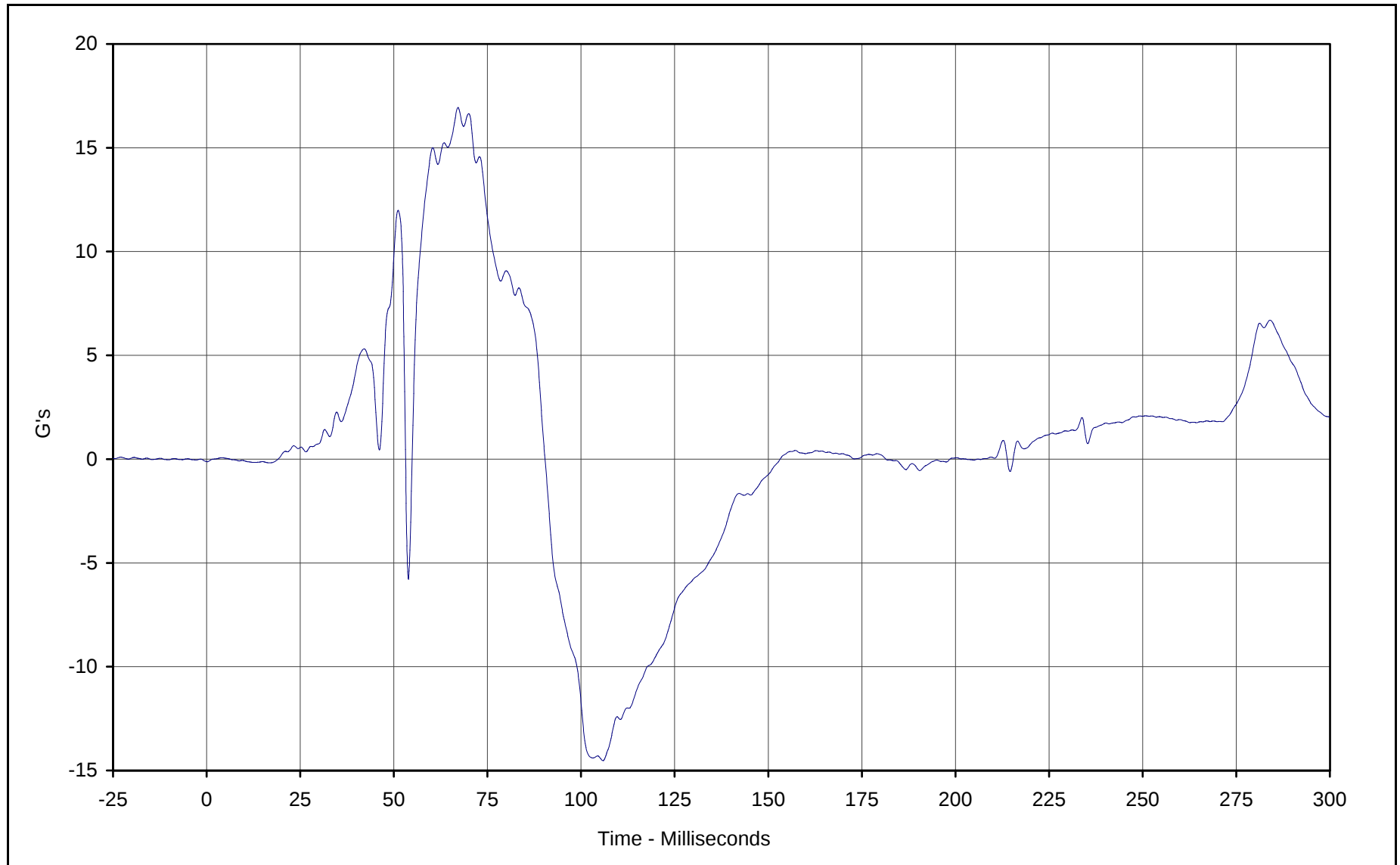
Curve Description: Passenger Chest Redundant Y
Maximum Value: 9.6 at 81.0 Milliseconds
Minimum Value: -1.3 at 113.3 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-063

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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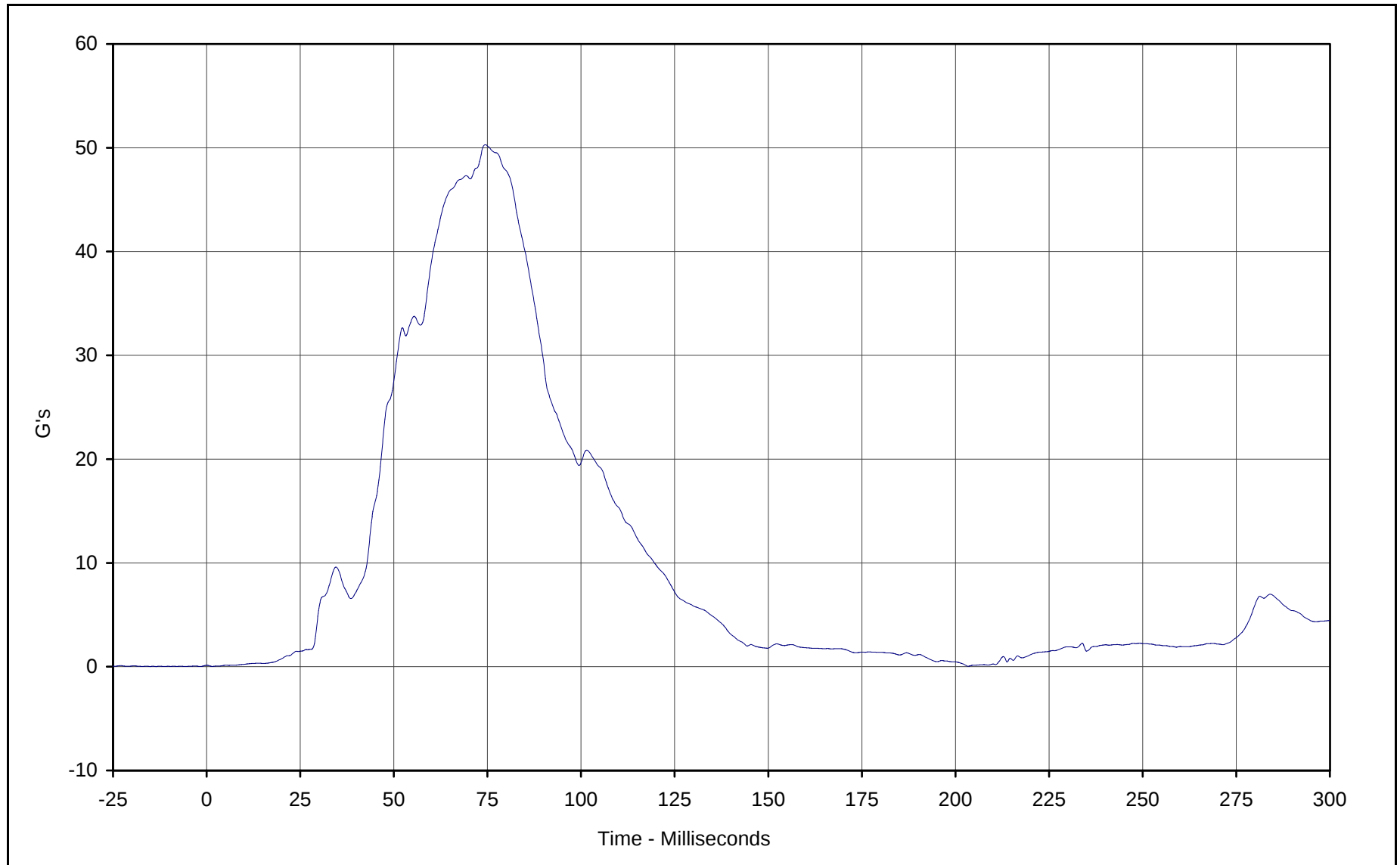
Curve Description: Passenger Chest Redundant Z
Maximum Value: 16.9 at 67.1 Milliseconds
Minimum Value: -14.5 at 105.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-064

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 50.3 at 74.5 Milliseconds

Minimum Value: 0.0 at 1.6 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

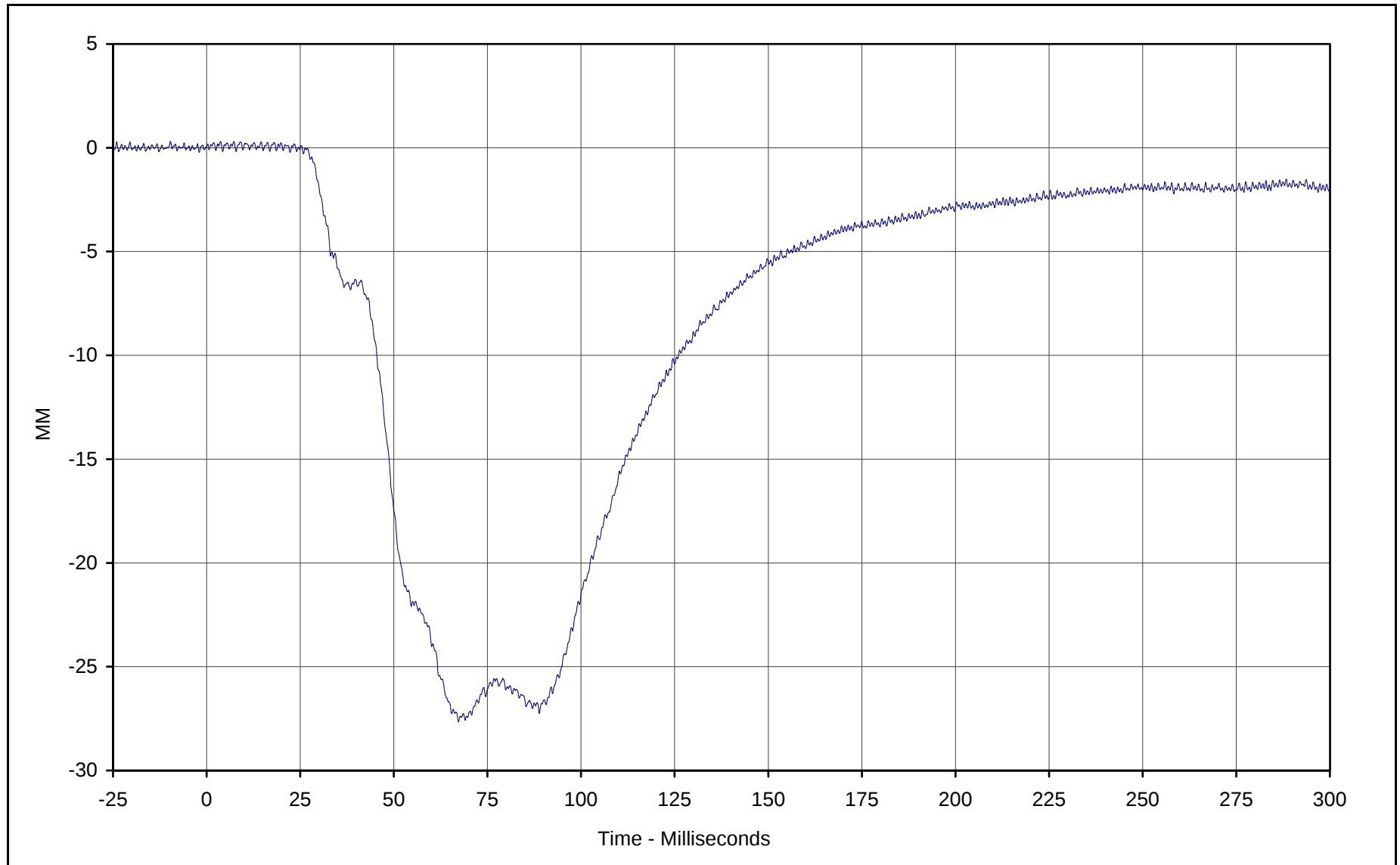
Curve Number: RES-062

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

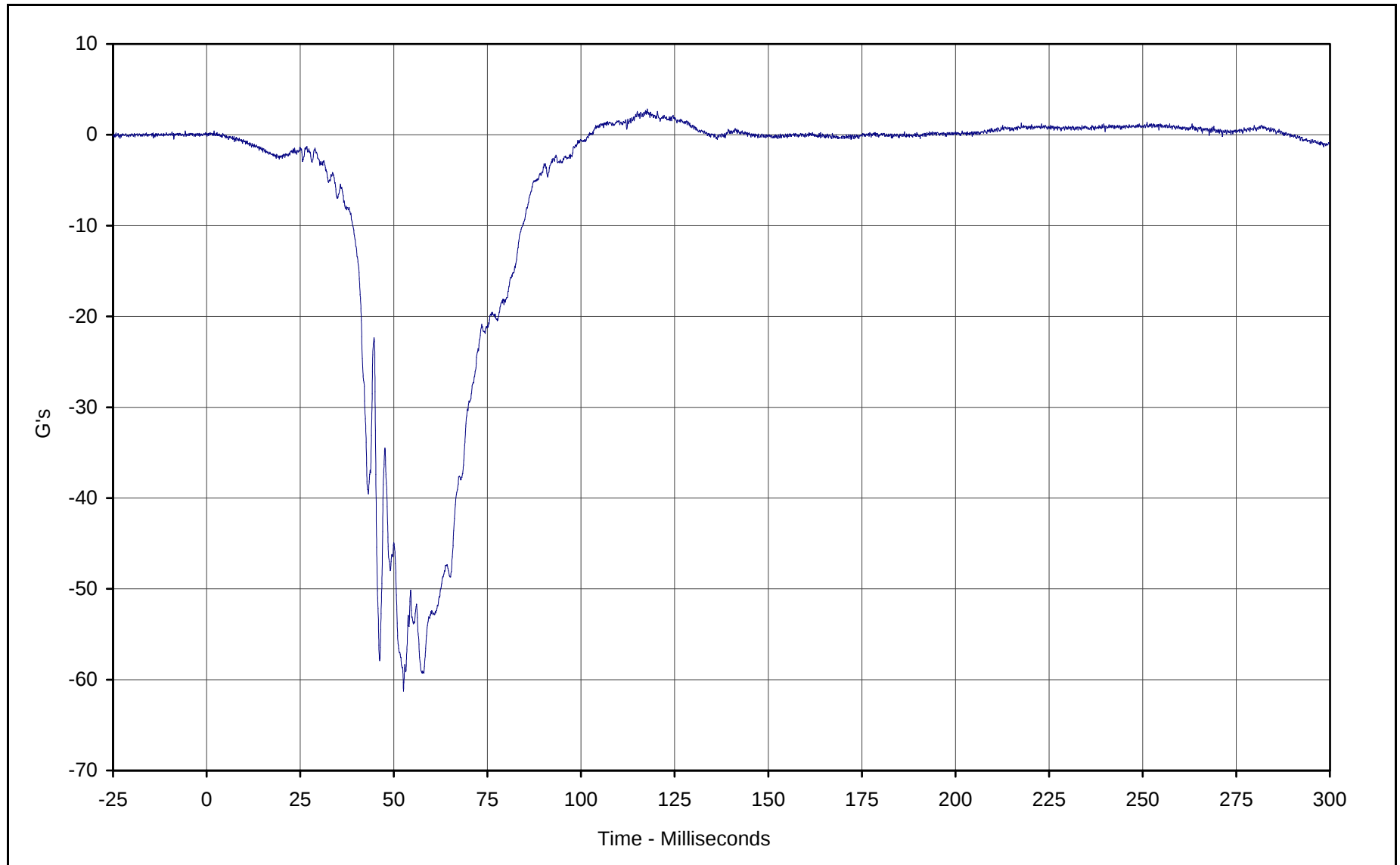


Curve Description: Passenger Chest Displacement X
Maximum Value: 0.3 at 3.7 Milliseconds
Minimum Value: -27.7 at 67.3 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-065

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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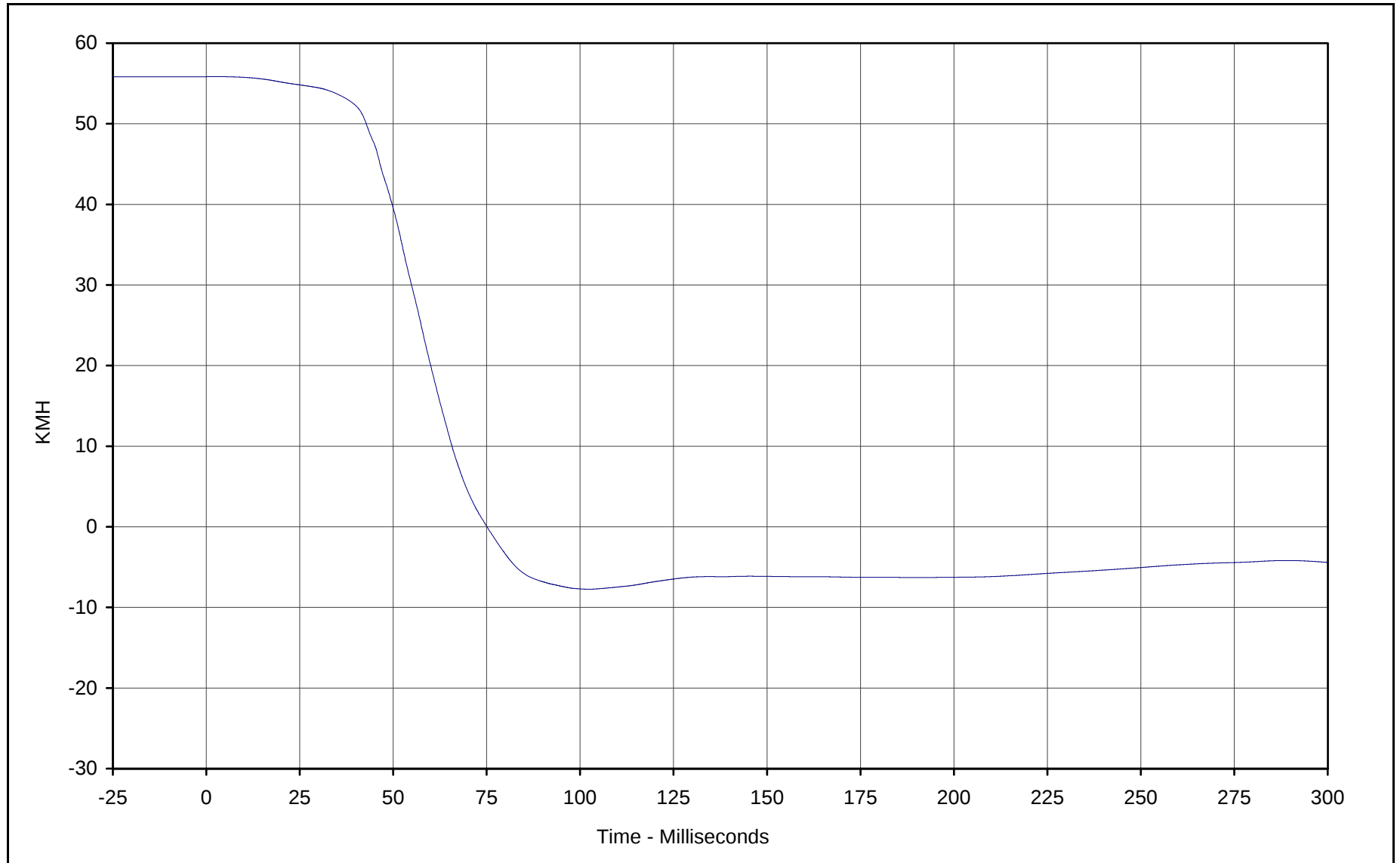
Curve Description: Passenger Pelvis X
Maximum Value: 2.8 at 117.7 Milliseconds
Minimum Value: -61.3 at 52.6 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-066

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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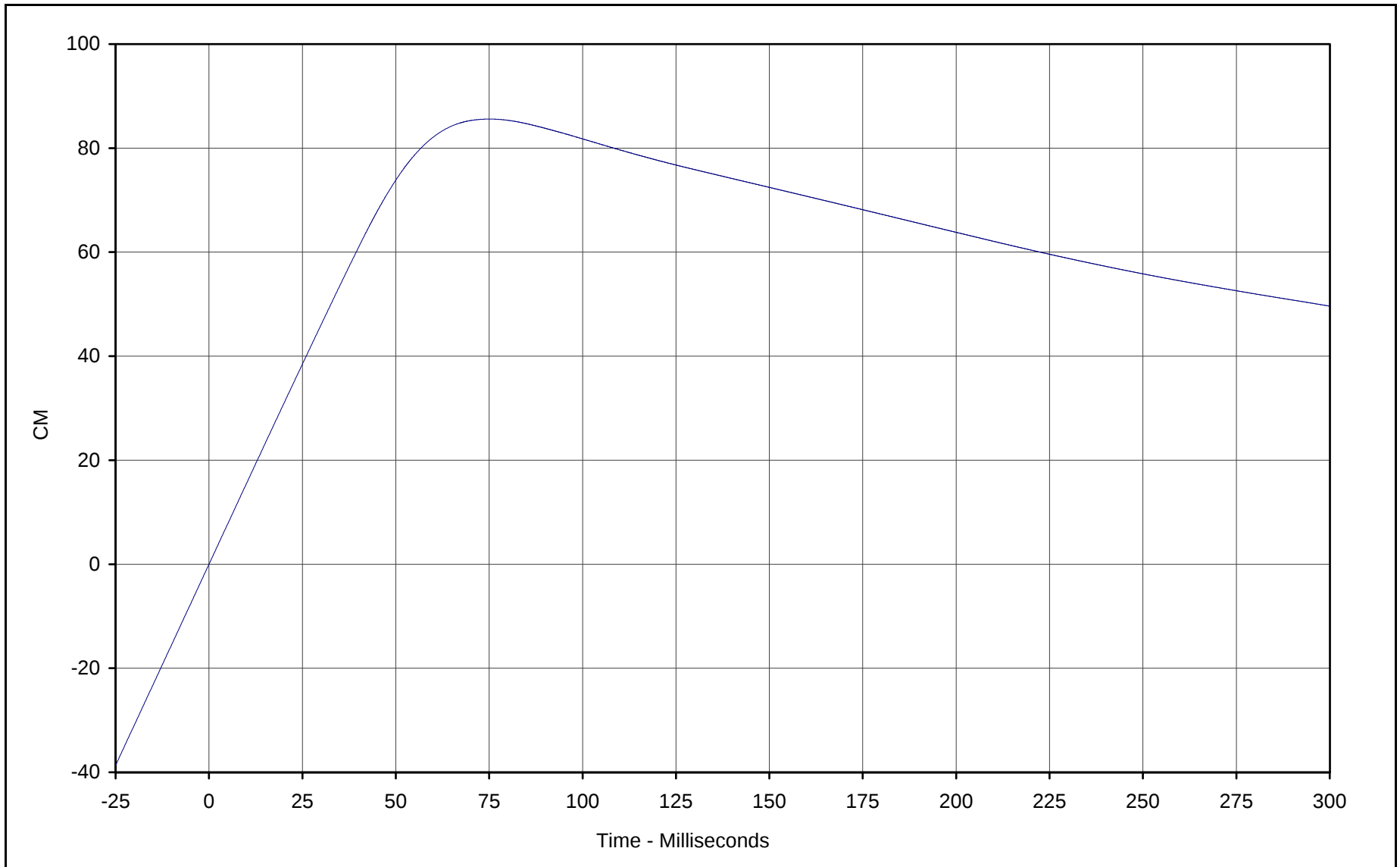


Curve Description: Passenger Pelvis X Velocity
Maximum Value: 55.8 at 3.0 Milliseconds
Minimum Value: -7.7 at 102.3 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-066

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

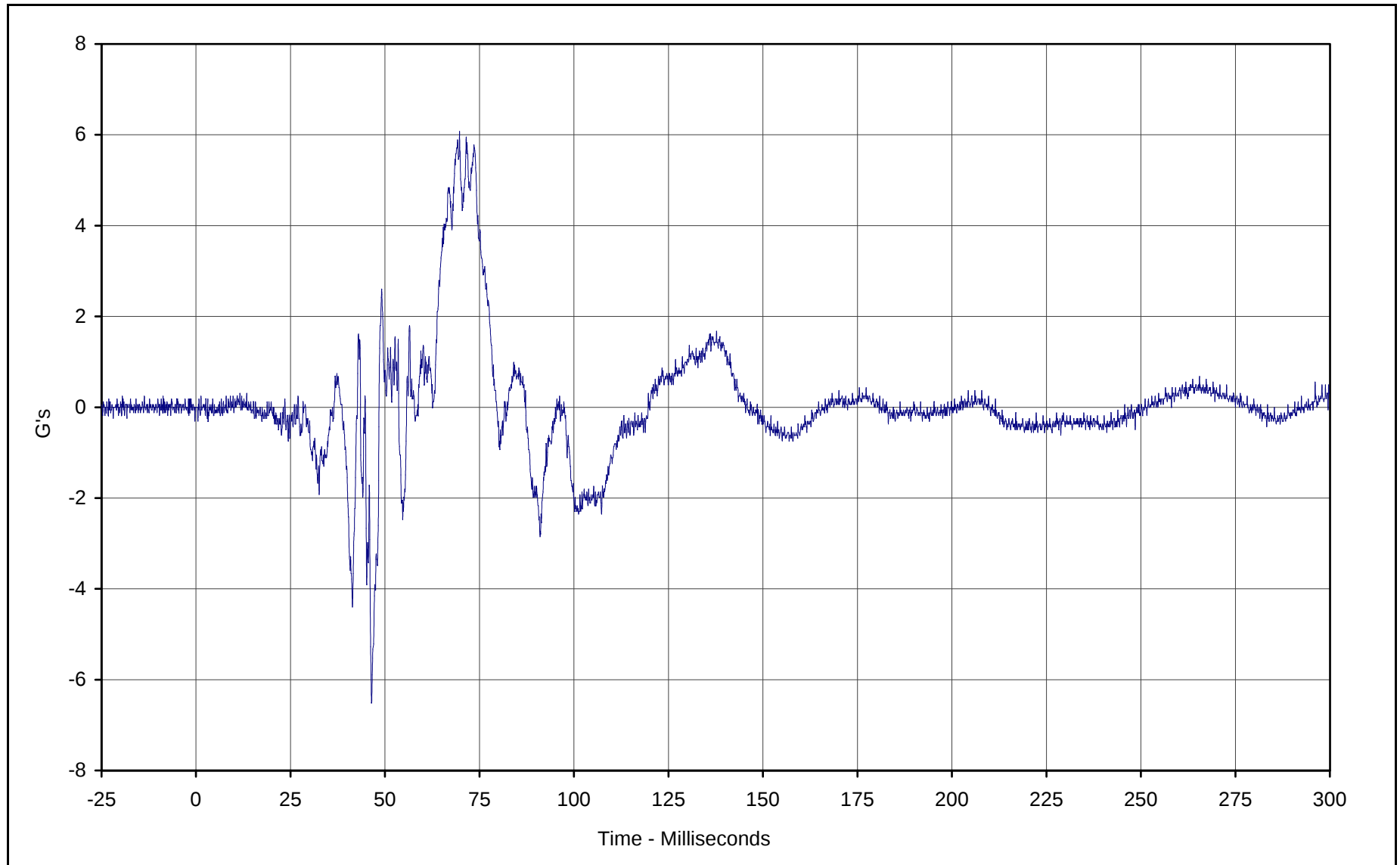


Curve Description: Passenger Pelvis X Displ.
Maximum Value: 85.6 at 75.1 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-066

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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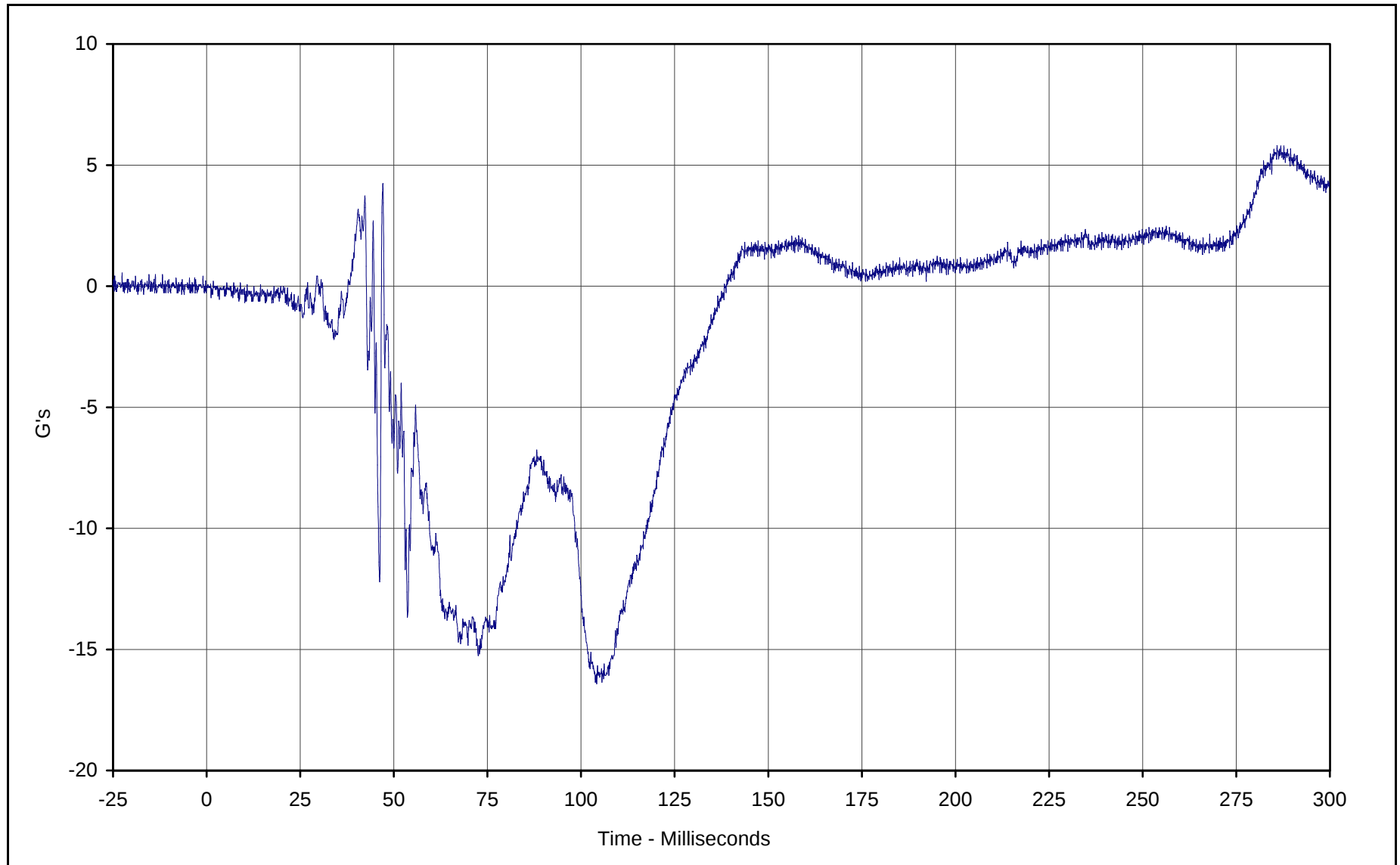
Curve Description: Passenger Pelvis Y
Maximum Value: 6.1 at 69.7 Milliseconds
Minimum Value: -6.5 at 46.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: FIL-067

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Pelvis Z

Maximum Value: 5.8 at 285.9 Milliseconds

Minimum Value: -16.4 at 104.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/13/01

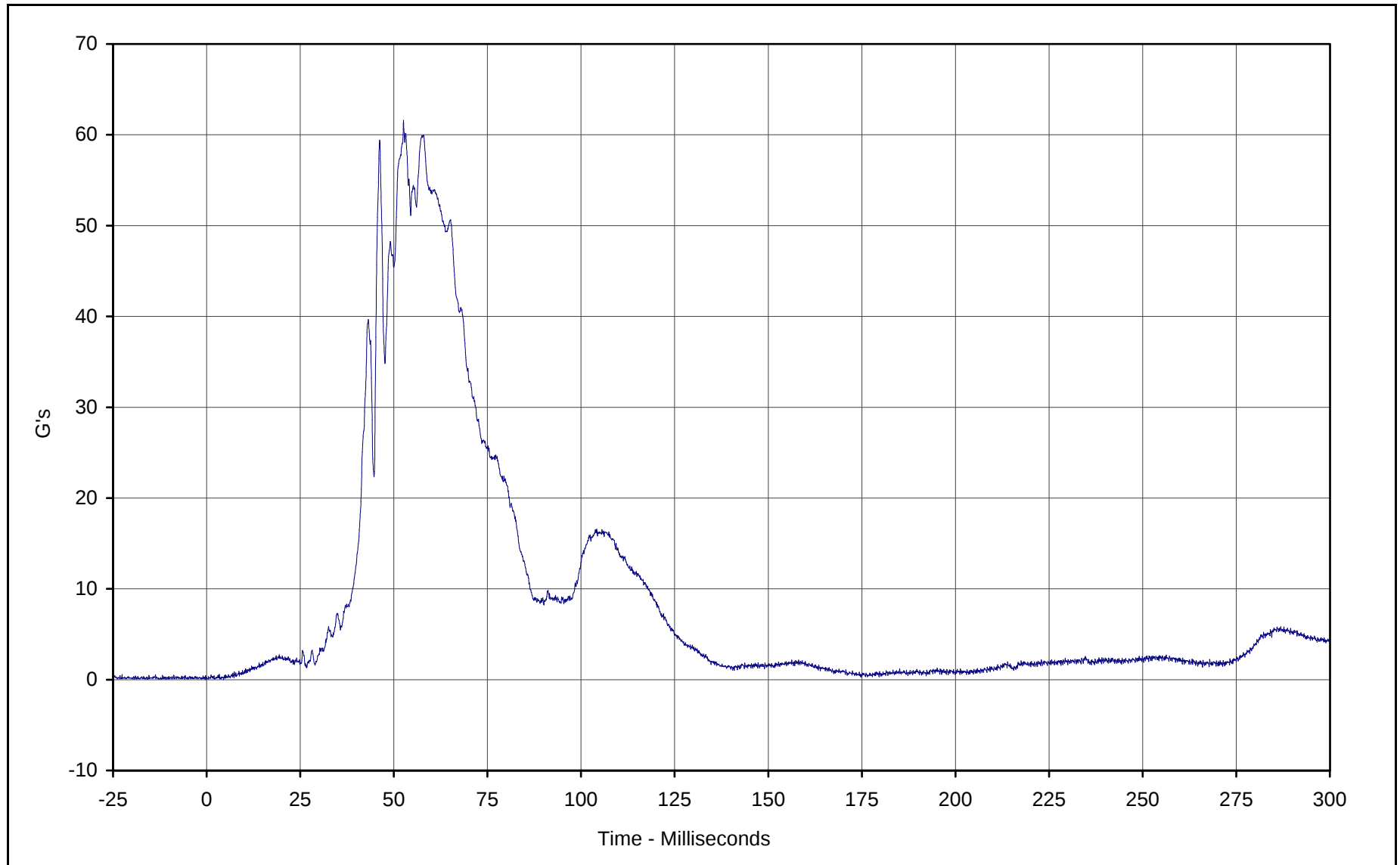
Curve Number: FIL-068

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



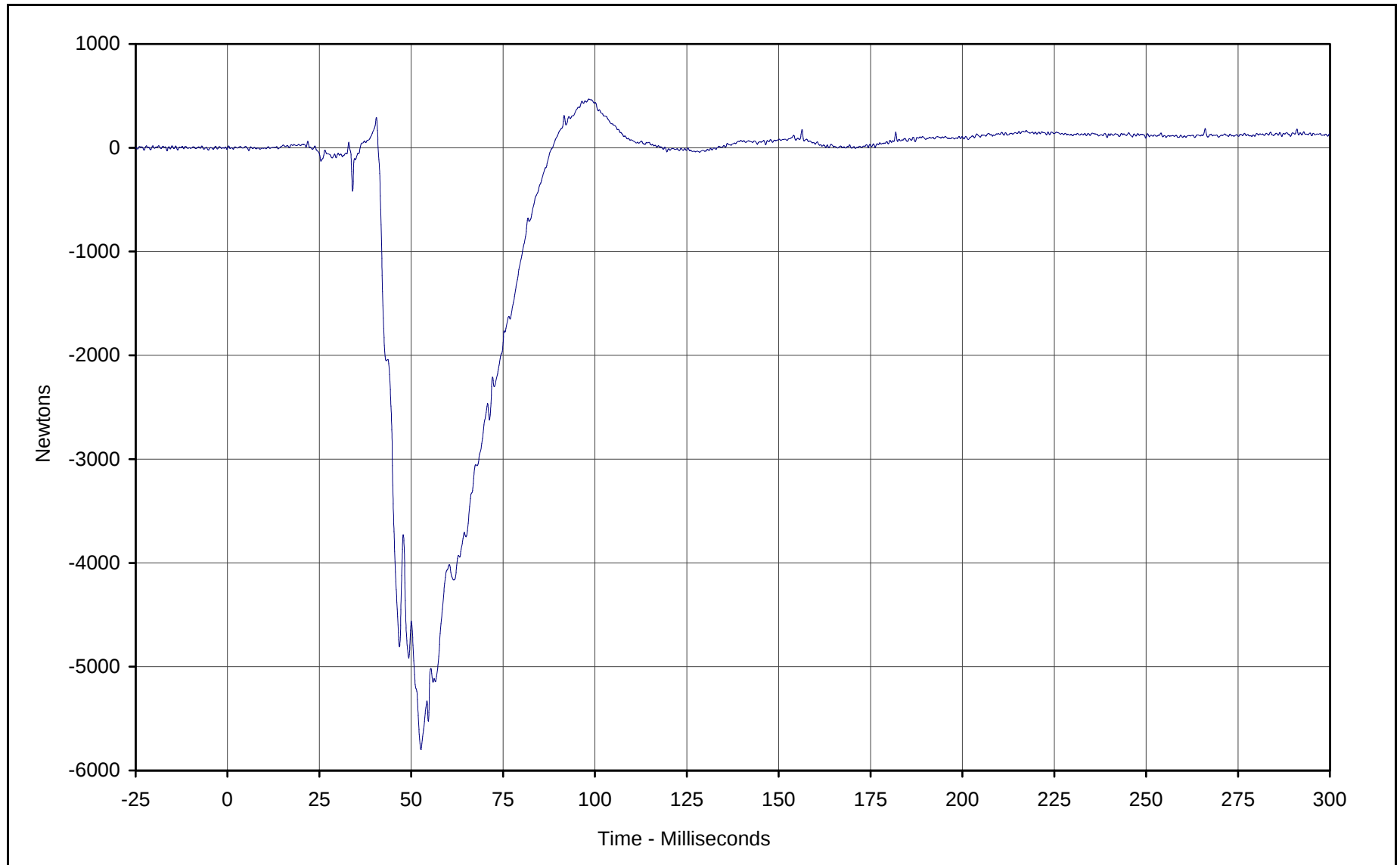
KAR22001-02



Curve Description: Passenger Pelvis Resultant
Maximum Value: 61.6 at 52.6 Milliseconds
Minimum Value: 0.0 at 4.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/13/01
Curve Number: RES-066

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

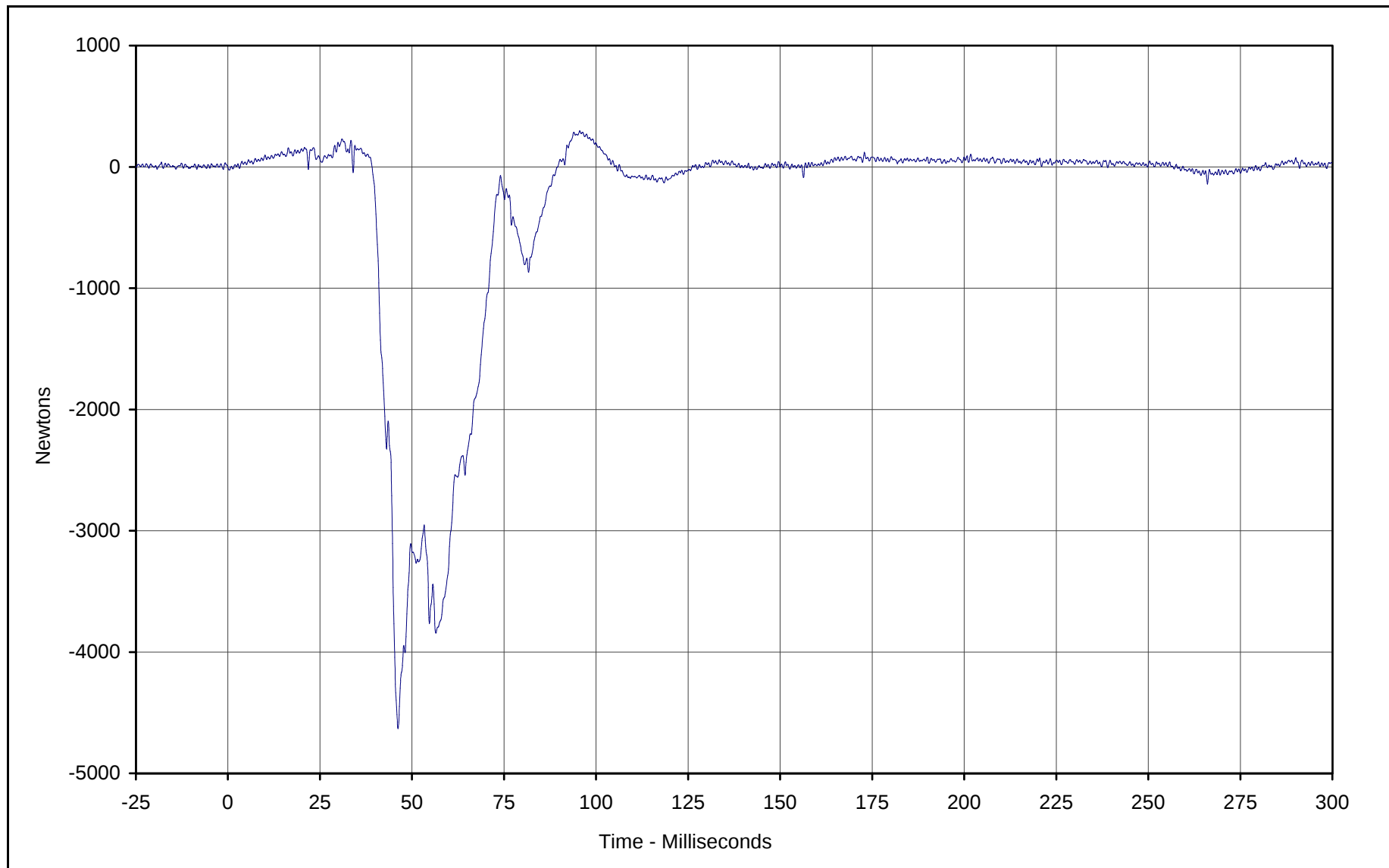




Curve Description: Passenger Left Femur Force
Maximum Value: 469.3 at 98.3 Milliseconds
Minimum Value: -5800.6 at 52.6 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-069

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



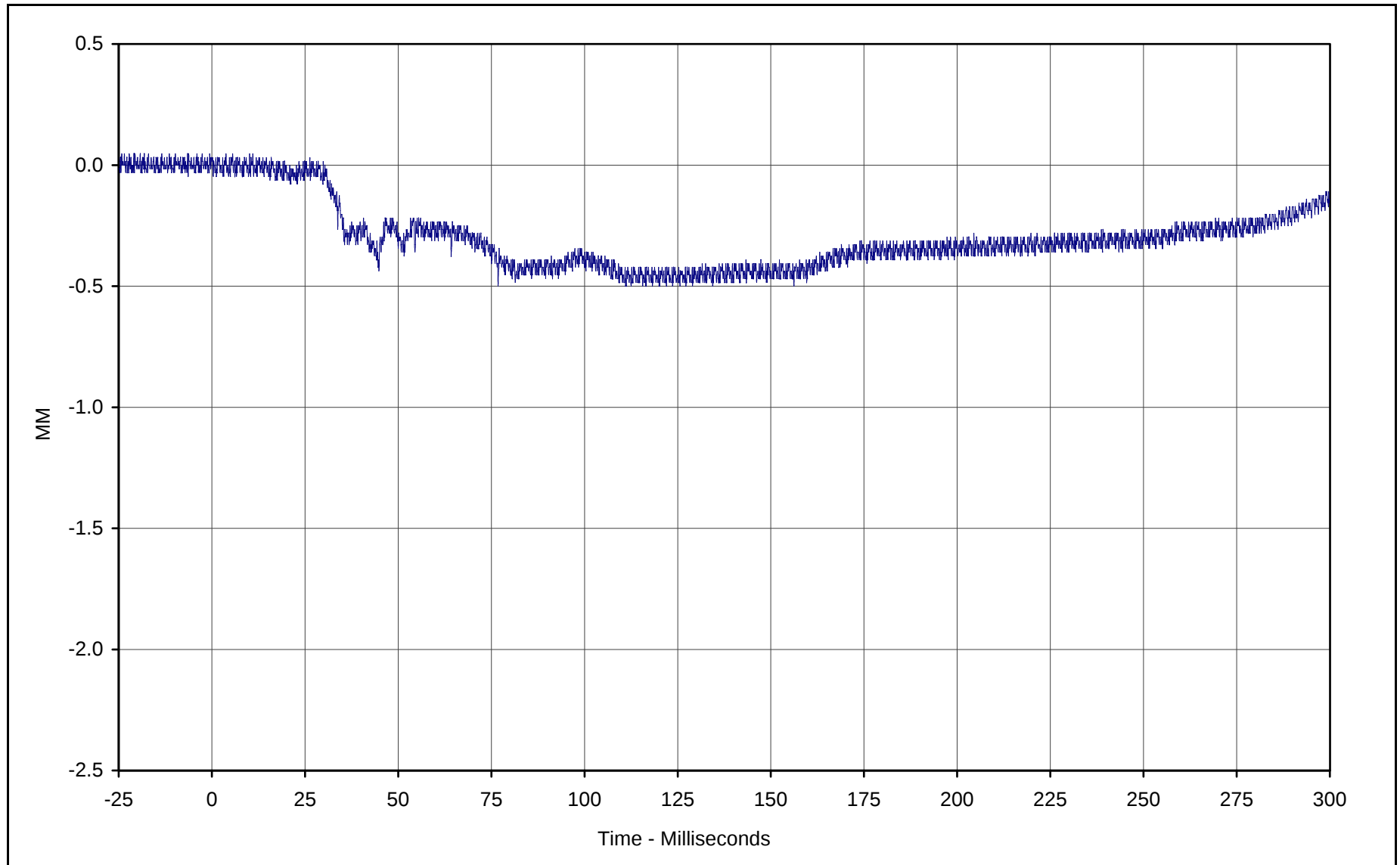


Curve Description: Passenger Right Femur Force
Maximum Value: 297.4 at 95.6 Milliseconds
Minimum Value: -4631.8 at 46.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/13/01
Curve Number: FIL-070

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





Curve Description: Passenger Left Knee Slider

Maximum Value: 0.05 at 3.8 Milliseconds

Minimum Value: -0.50 at 76.8 Milliseconds

SAE Filter Class: 180

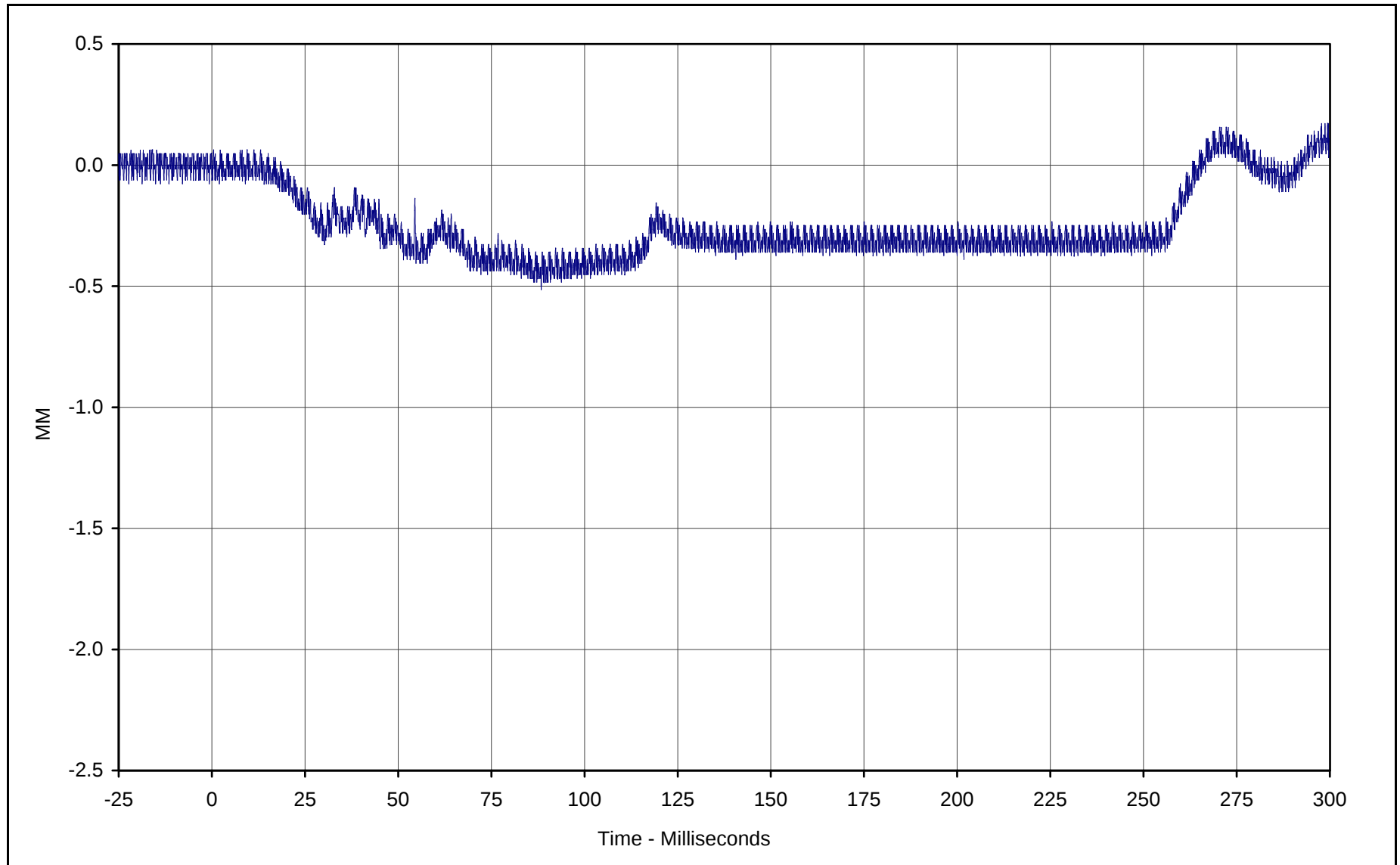
Date of Test: 12/13/01

Curve Number: FIL-071

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

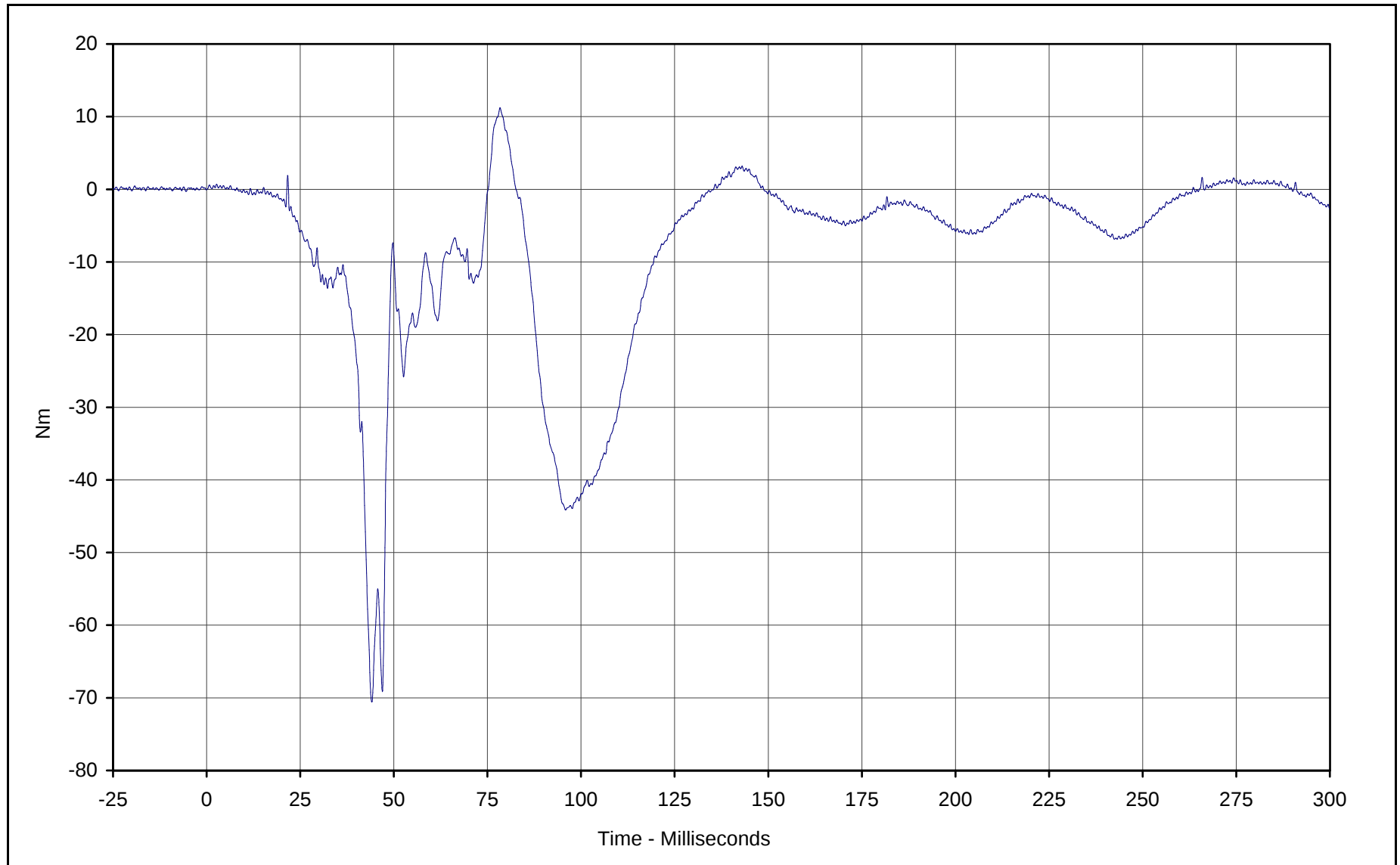




Curve Description: Passenger Right Knee Slider
Maximum Value: 0.17 at 297.8 Milliseconds
Minimum Value: -0.52 at 88.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-072

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 11.2 at 78.4 Milliseconds

Minimum Value: -70.6 at 44.1 Milliseconds

SAE Filter Class: 600

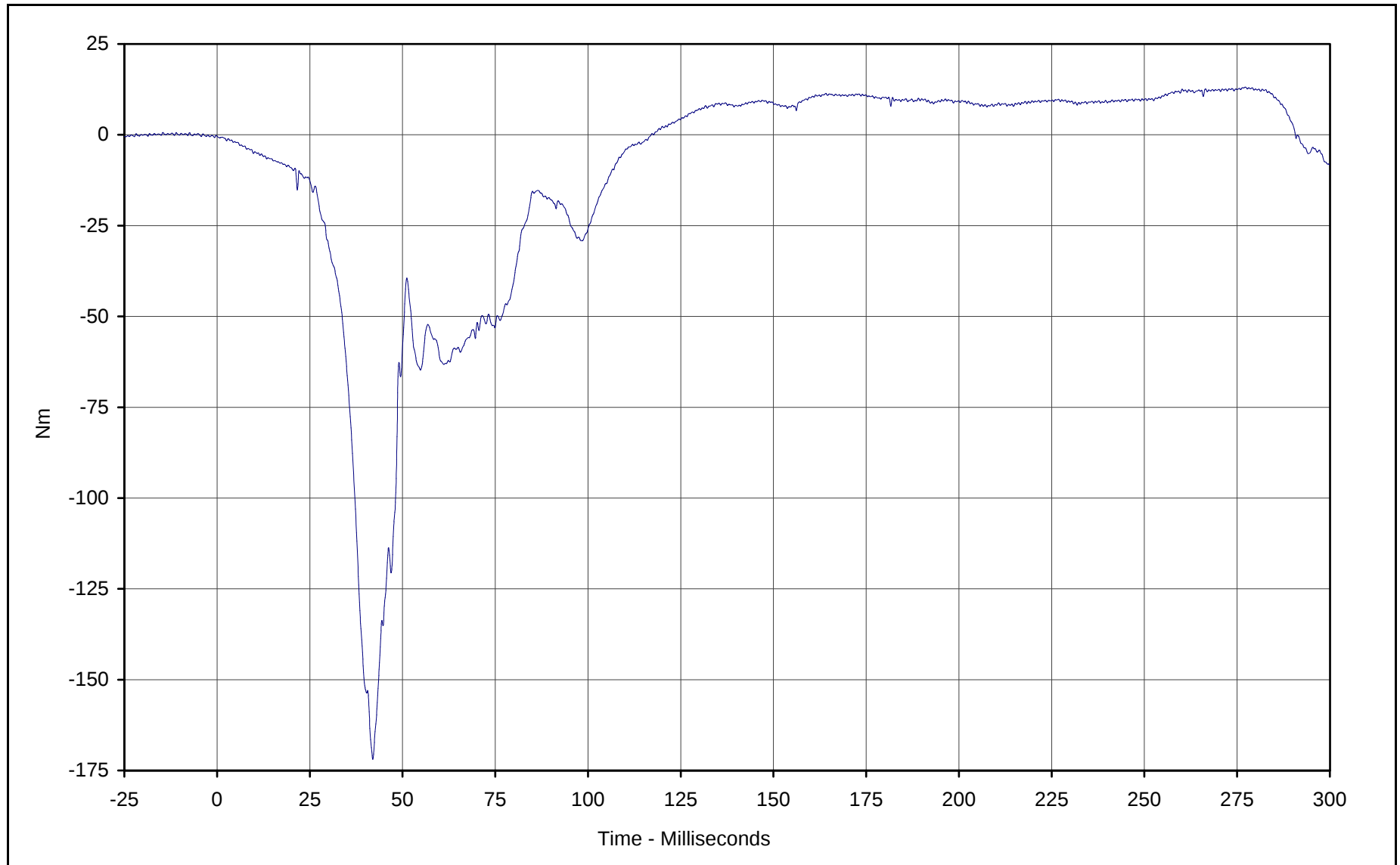
Date of Test: 12/13/01

Curve Number: FIL-073

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 13.1 at 277.2 Milliseconds

Minimum Value: -171.9 at 42.0 Milliseconds

SAE Filter Class: 600

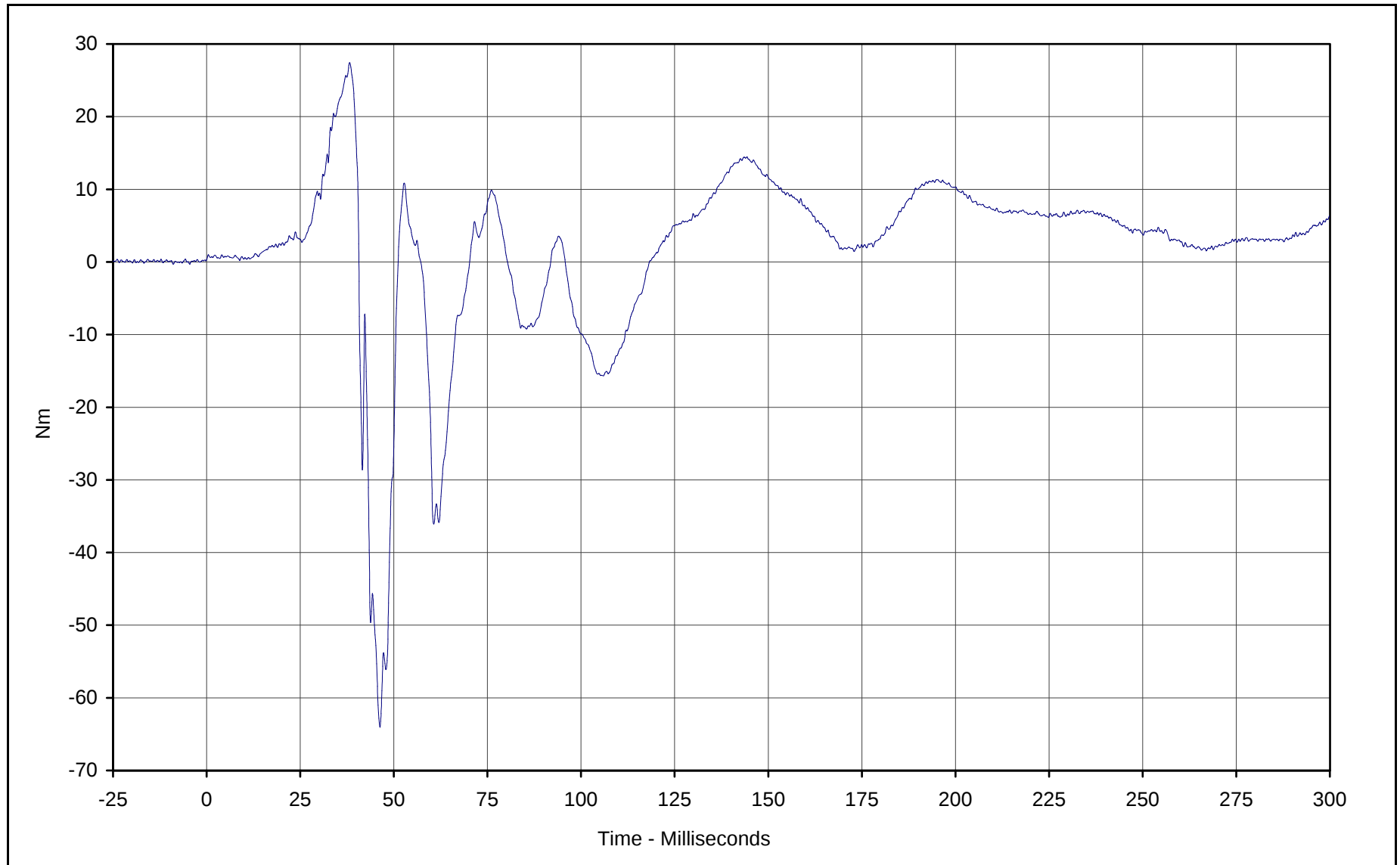
Date of Test: 12/13/01

Curve Number: FIL-074

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 27.4 at 38.2 Milliseconds

Minimum Value: -64.1 at 46.3 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

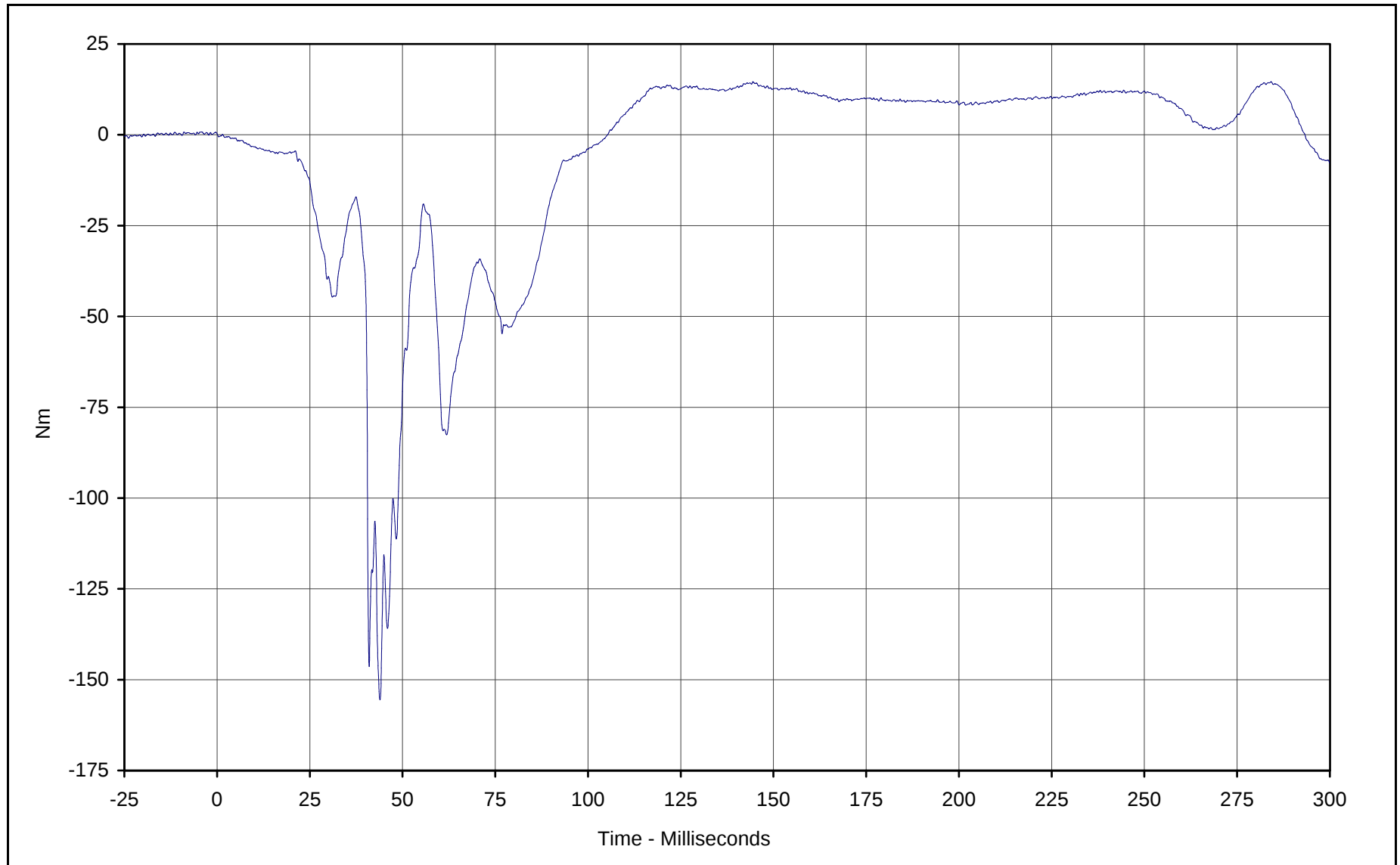
Curve Number: FIL-075

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 14.6 at 144.5 Milliseconds

Minimum Value: -155.6 at 43.9 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

Curve Number: FIL-076

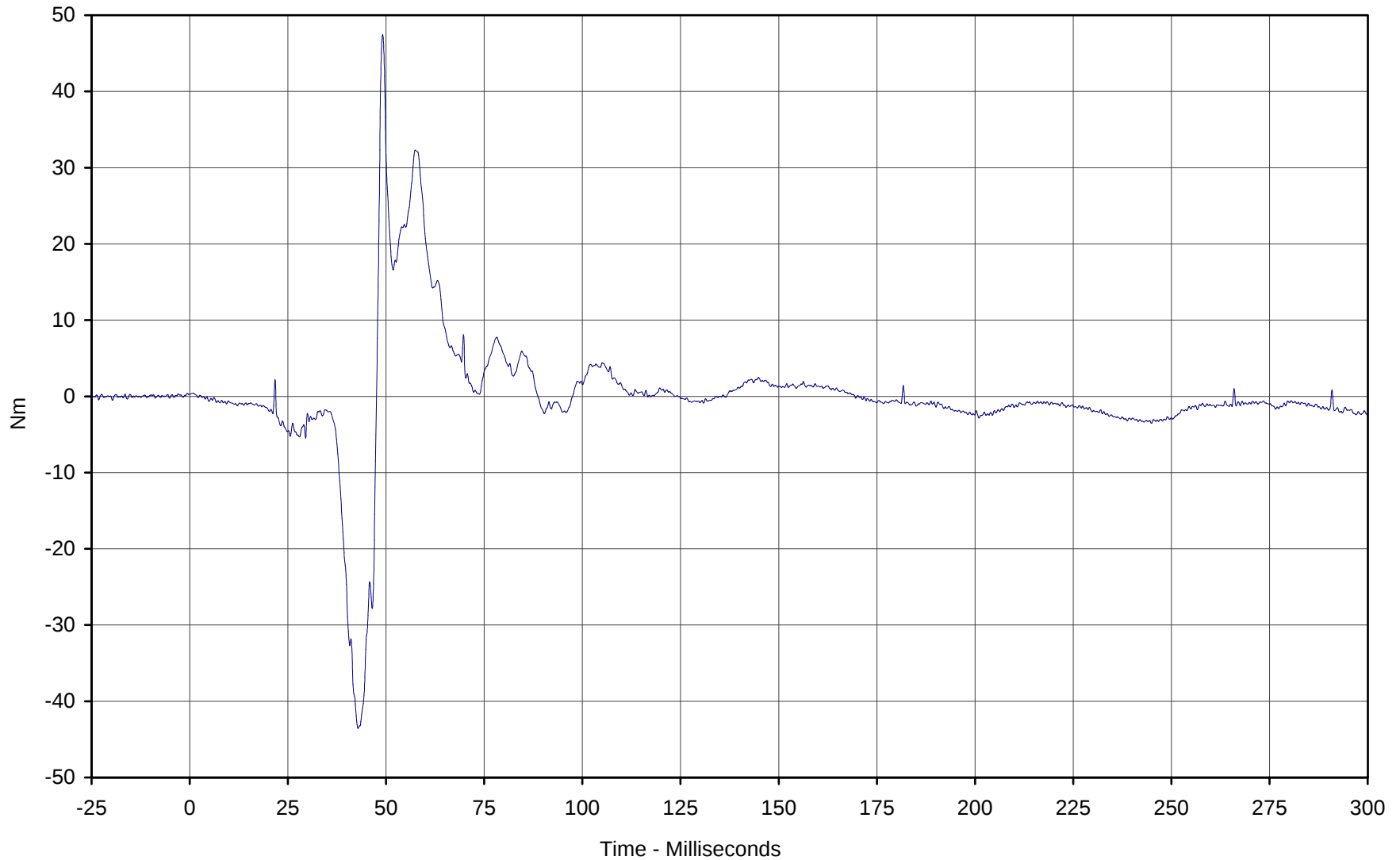
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Left Lower Tibia Moment X

Maximum Value: 47.5 at 49.1 Milliseconds

Minimum Value: -43.6 at 42.9 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

Curve Number: FIL-077

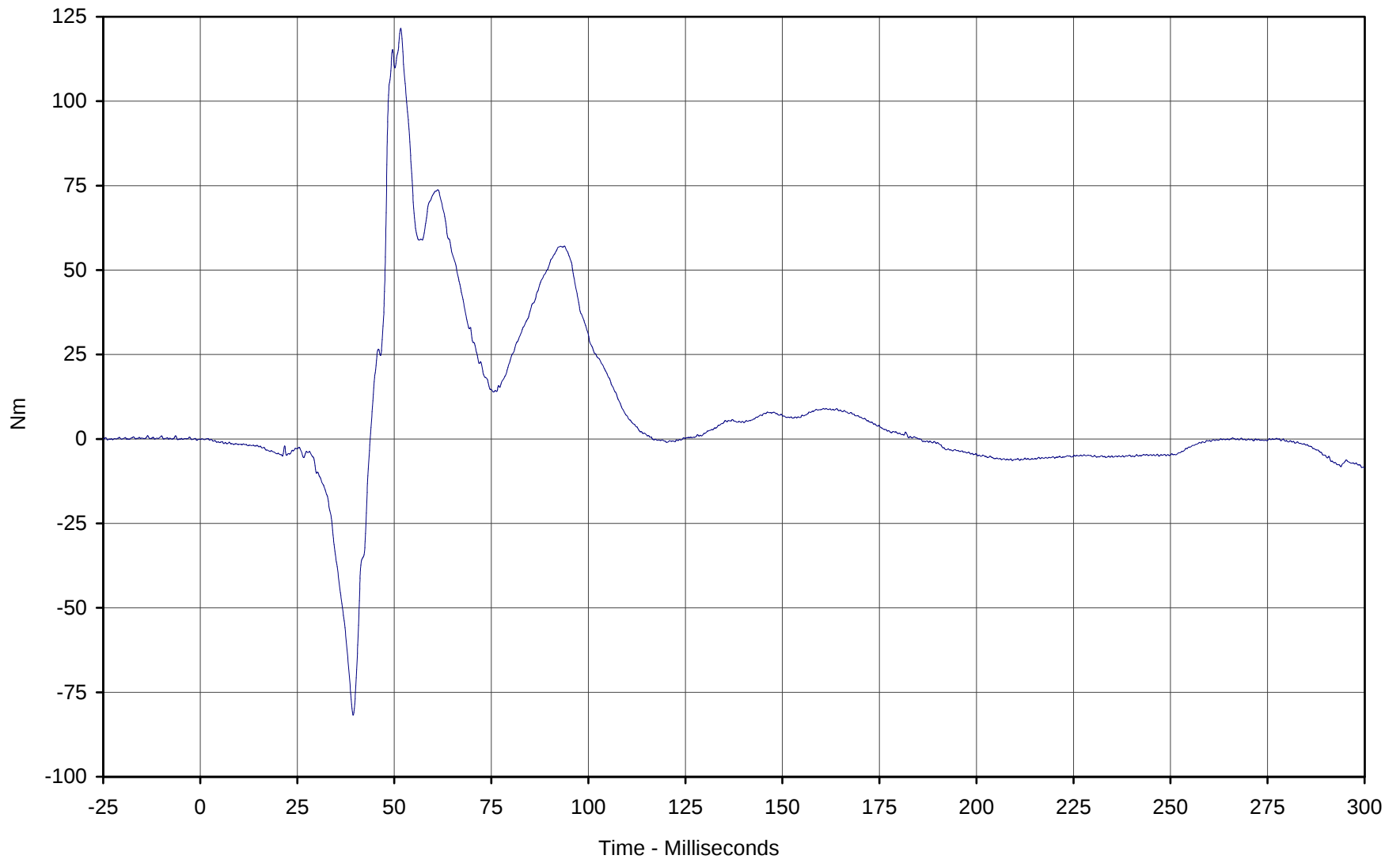
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 121.6 at 51.7 Milliseconds

Minimum Value: -81.8 at 39.4 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

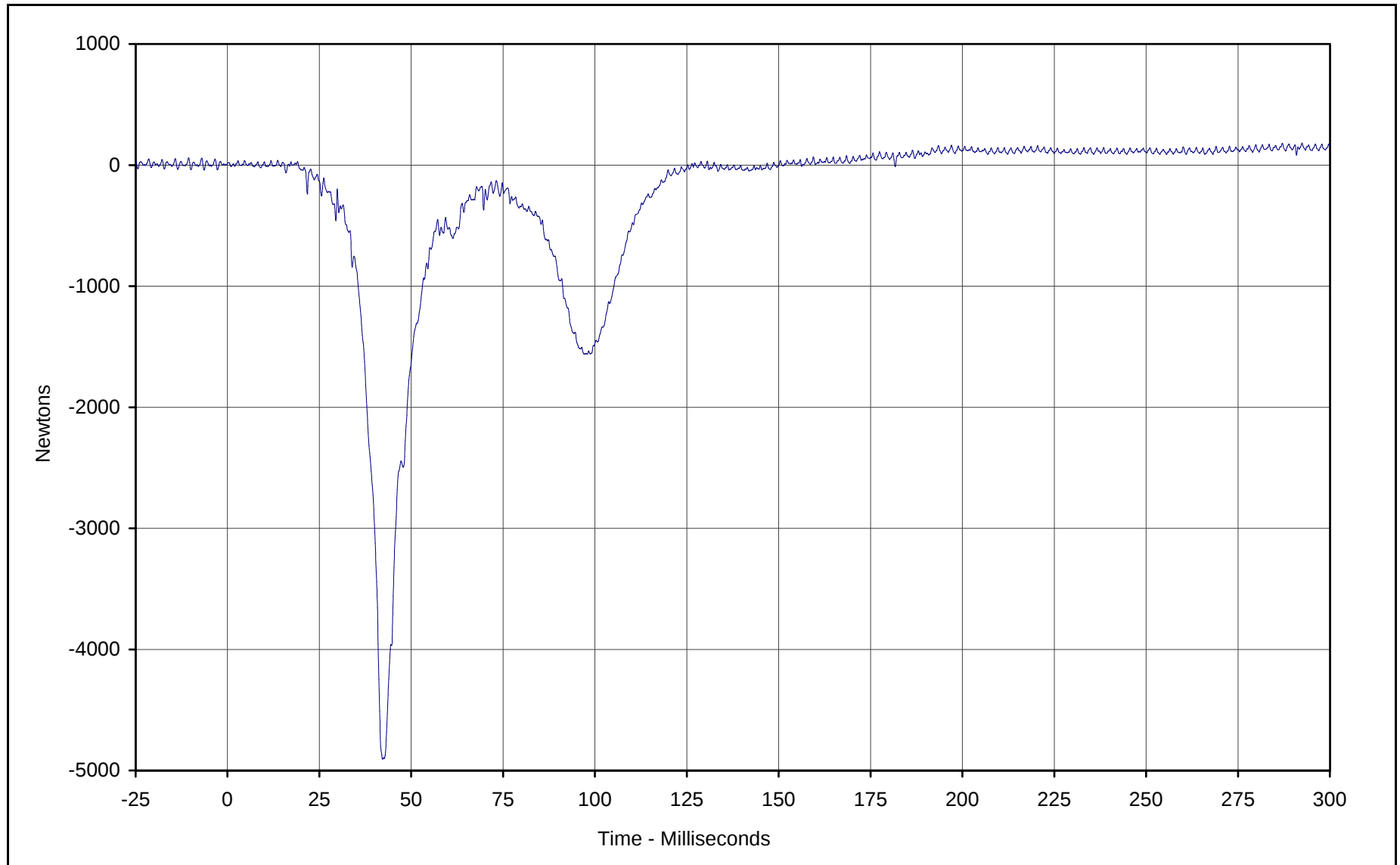
Curve Number: FIL-078

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Left Lower Tibia Force Z

Maximum Value: 182.9 at 292.4 Milliseconds

Minimum Value: -4907.2 at 42.2 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

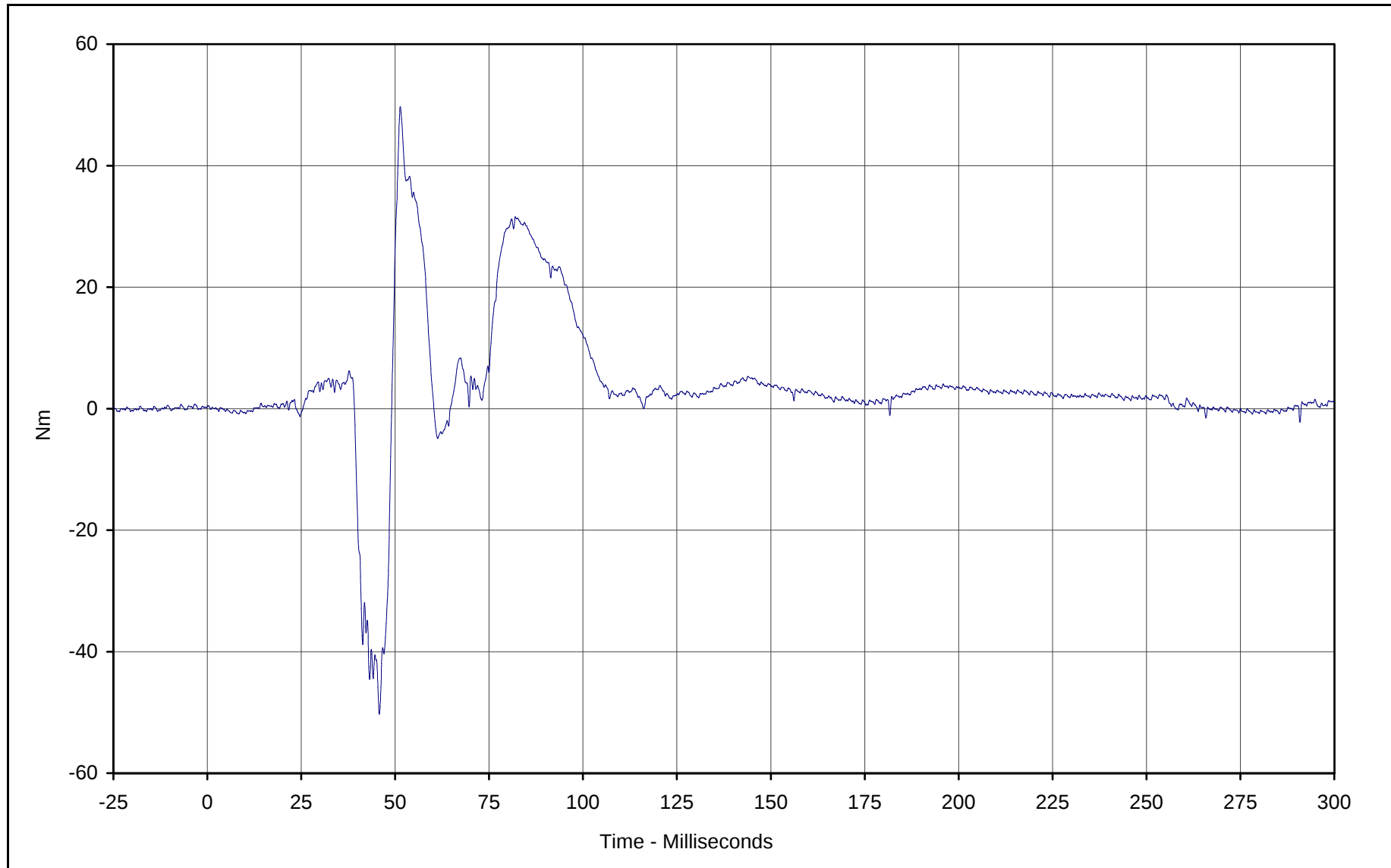
Curve Number: FIL-079

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 49.7 at 51.4 Milliseconds

Minimum Value: -50.3 at 45.8 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

Curve Number: FIL-080

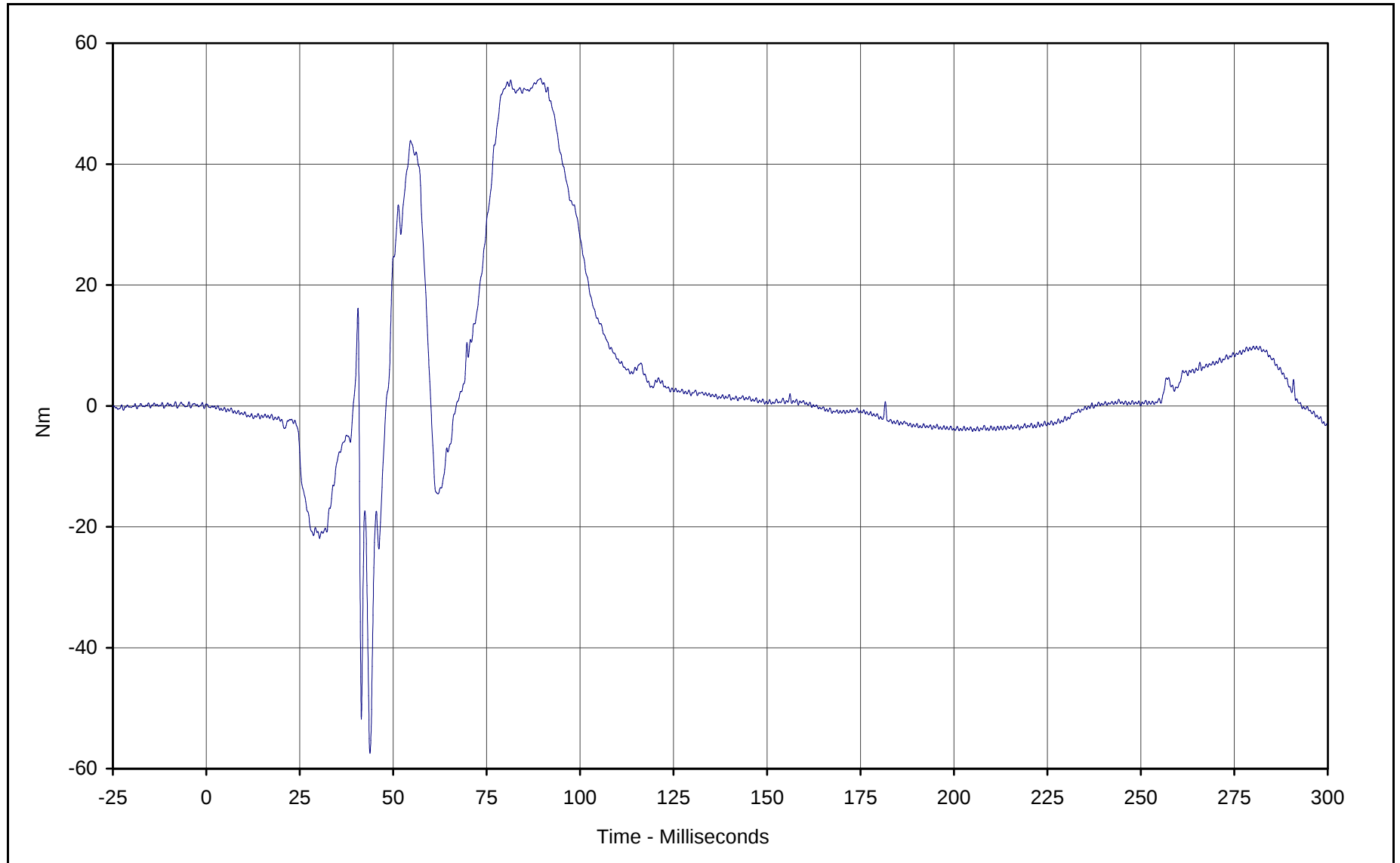
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value: 54.2 at 89.4 Milliseconds

Minimum Value: -57.5 at 43.8 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

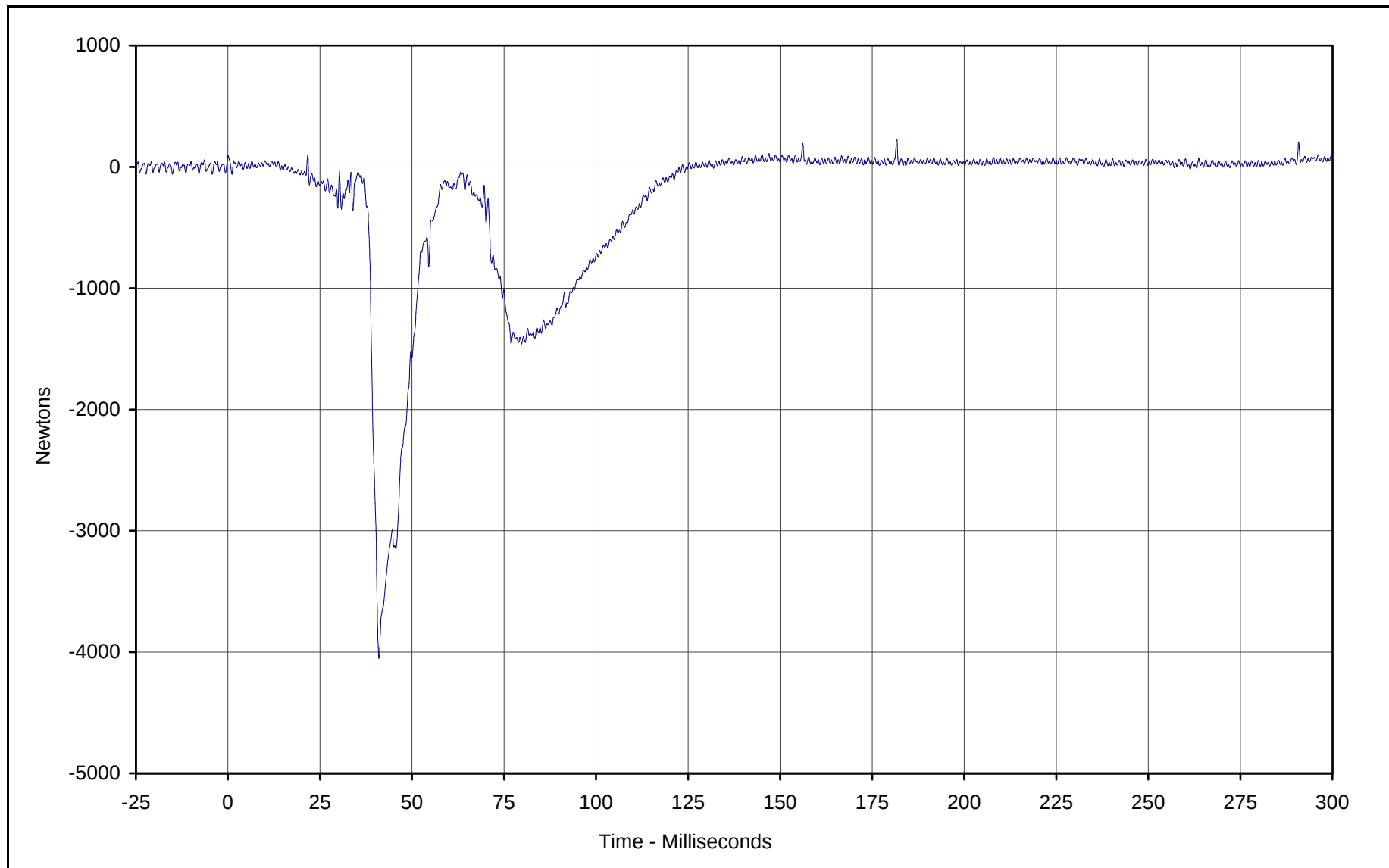
Curve Number: FIL-081

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Right lower Tibia Force Z

Maximum Value: 230.1 at 181.7 Milliseconds

Minimum Value: -4052.2 at 41.0 Milliseconds

SAE Filter Class: 600

Date of Test: 12/13/01

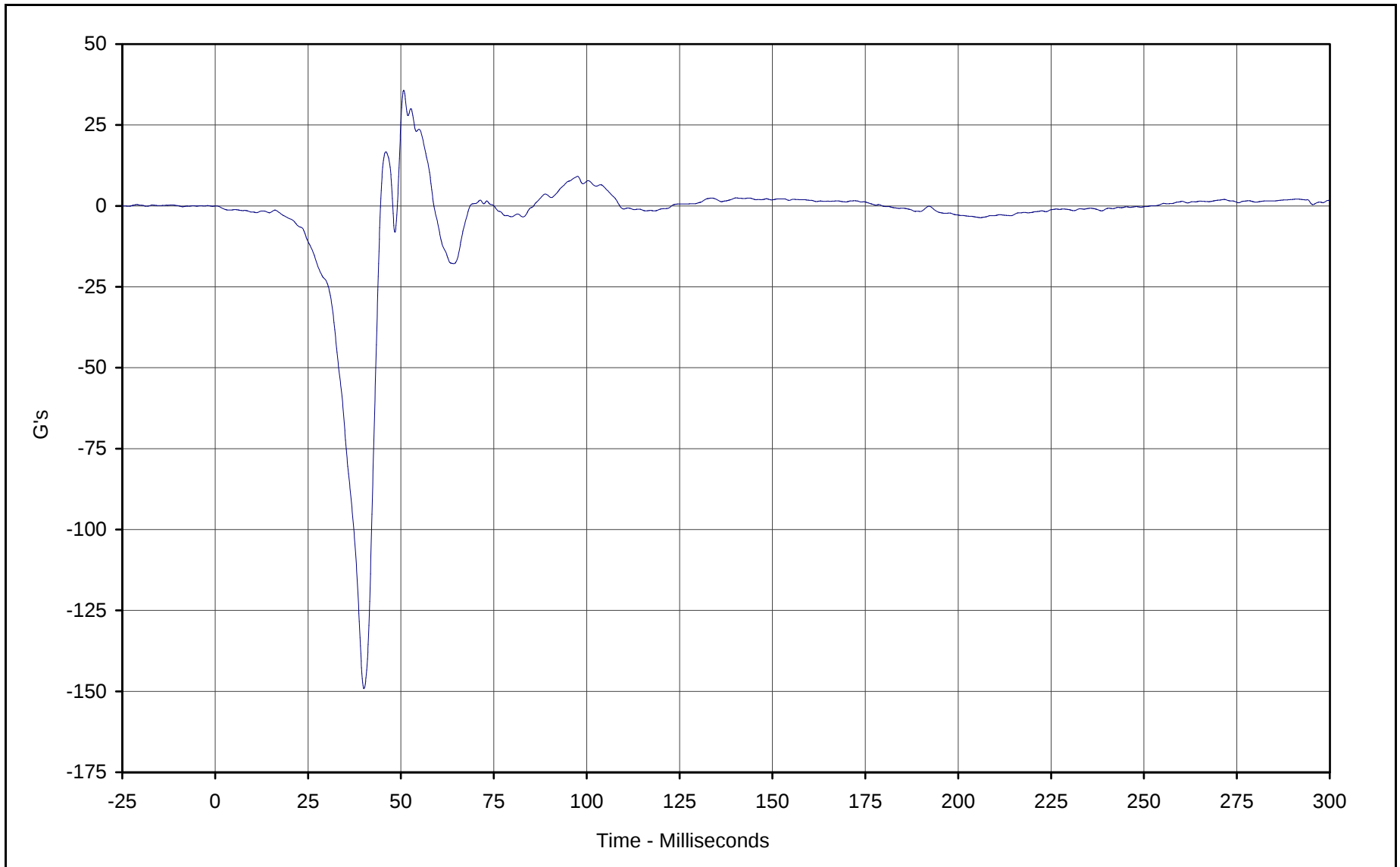
Curve Number: FIL-082

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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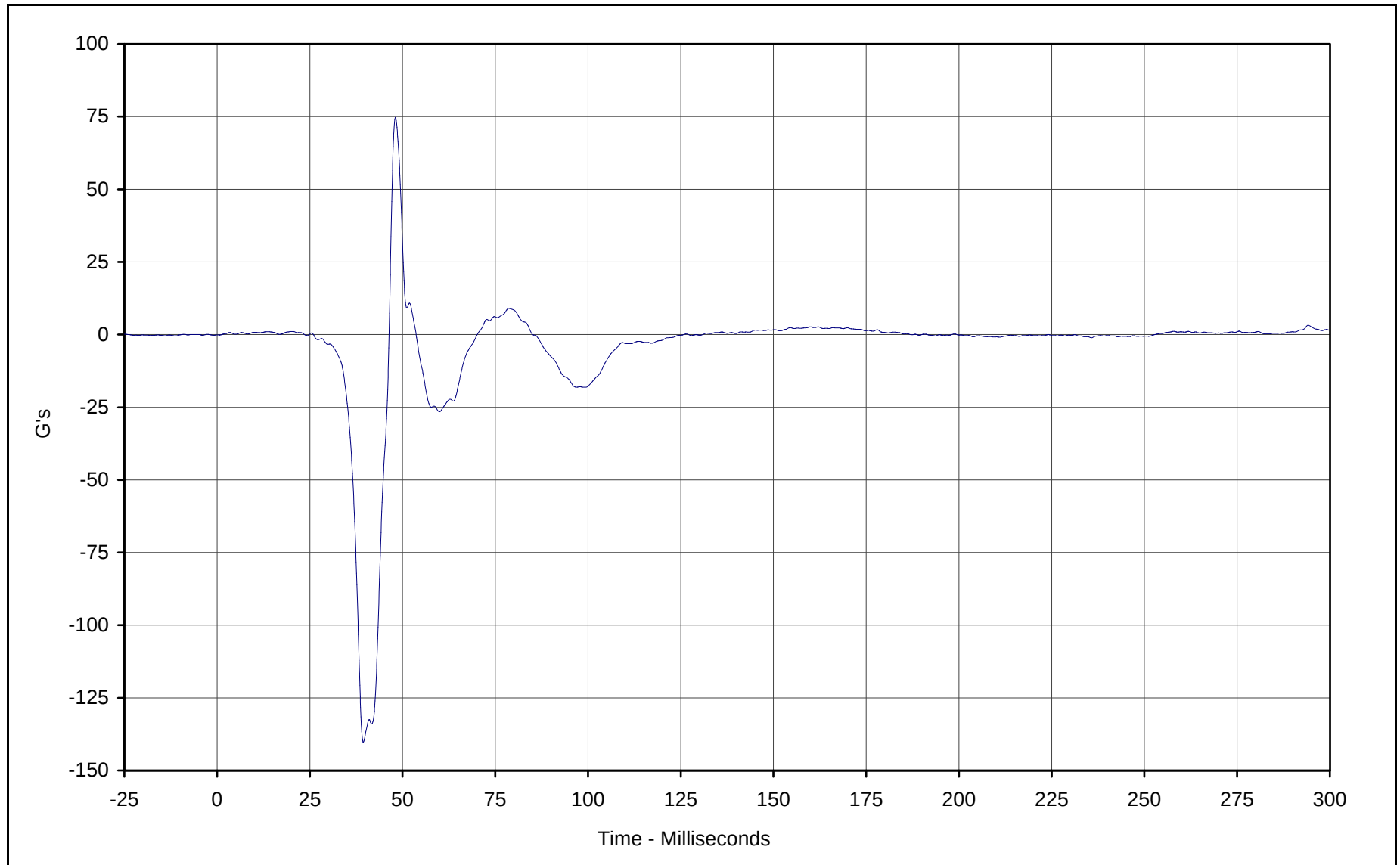


Curve Description: Passenger Left Foot Aft X
Maximum Value: 35.7 at 50.7 Milliseconds
Minimum Value: -149.2 at 40.1 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-083

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

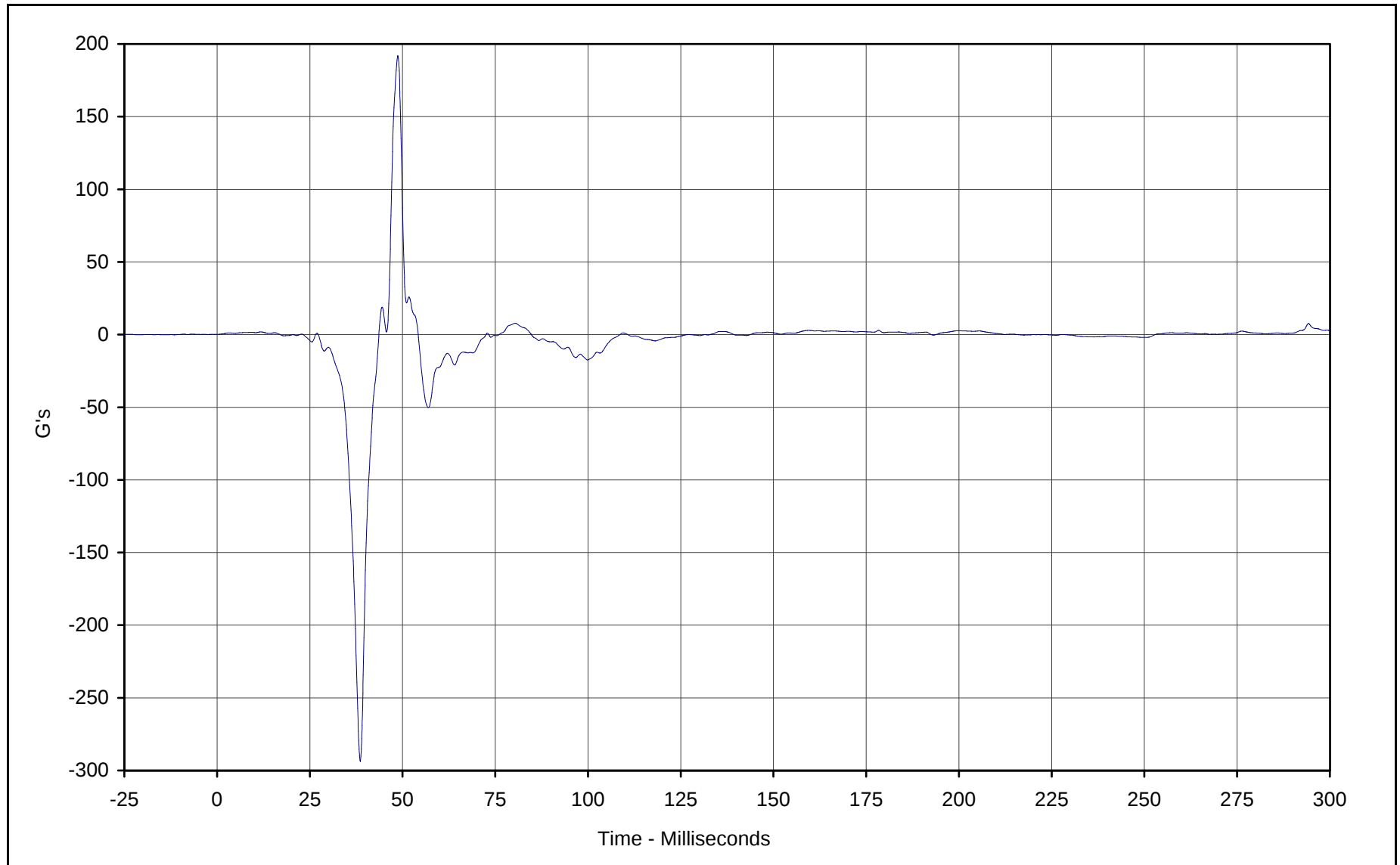


Curve Description: Passenger Left Foot Aft Z
Maximum Value: 74.7 at 48.1 Milliseconds
Minimum Value: -140.3 at 39.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-084

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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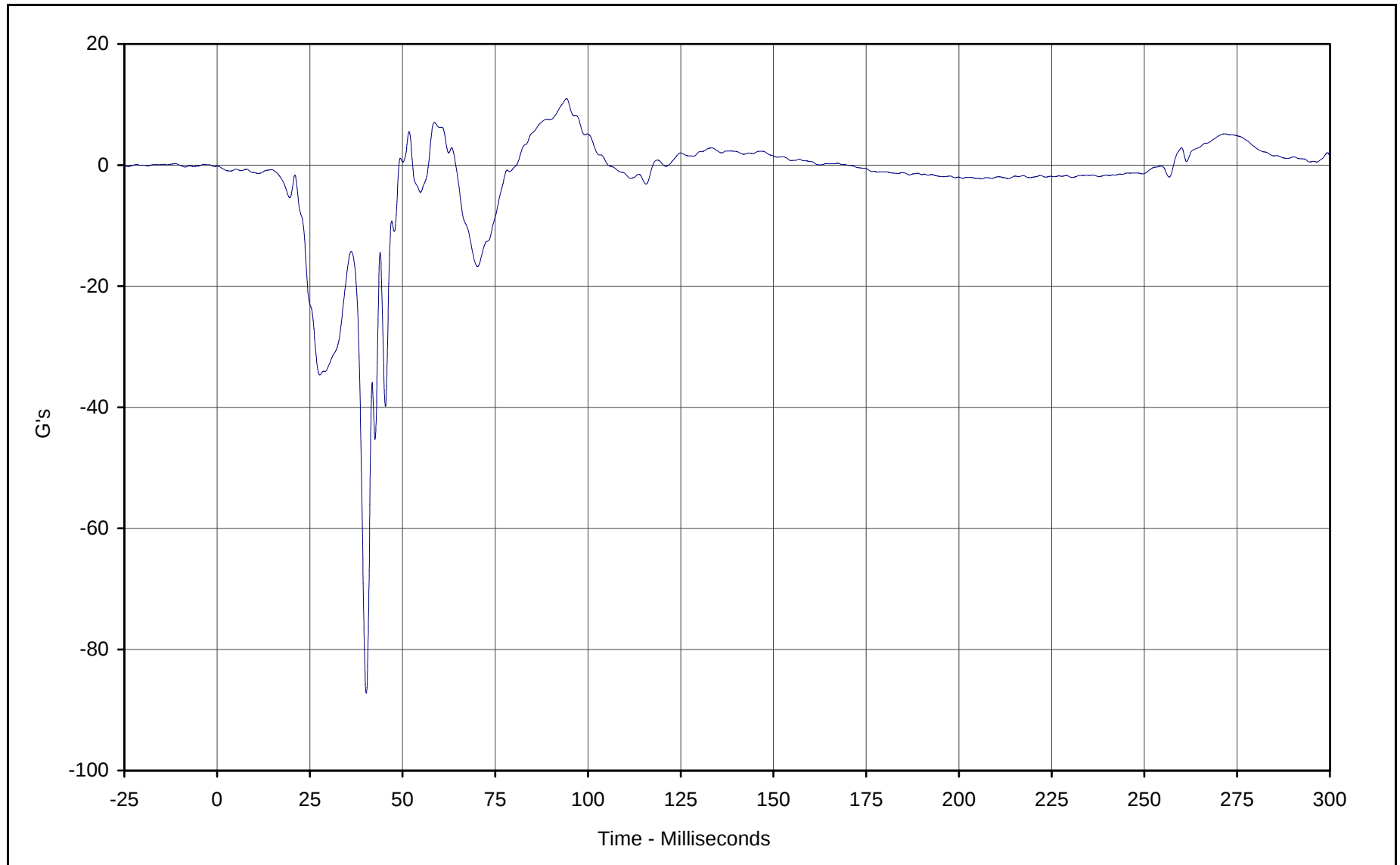
Curve Description: Passenger Left Foot Fore Z
Maximum Value: 192.0 at 48.7 Milliseconds
Minimum Value: -293.9 at 38.6 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-085

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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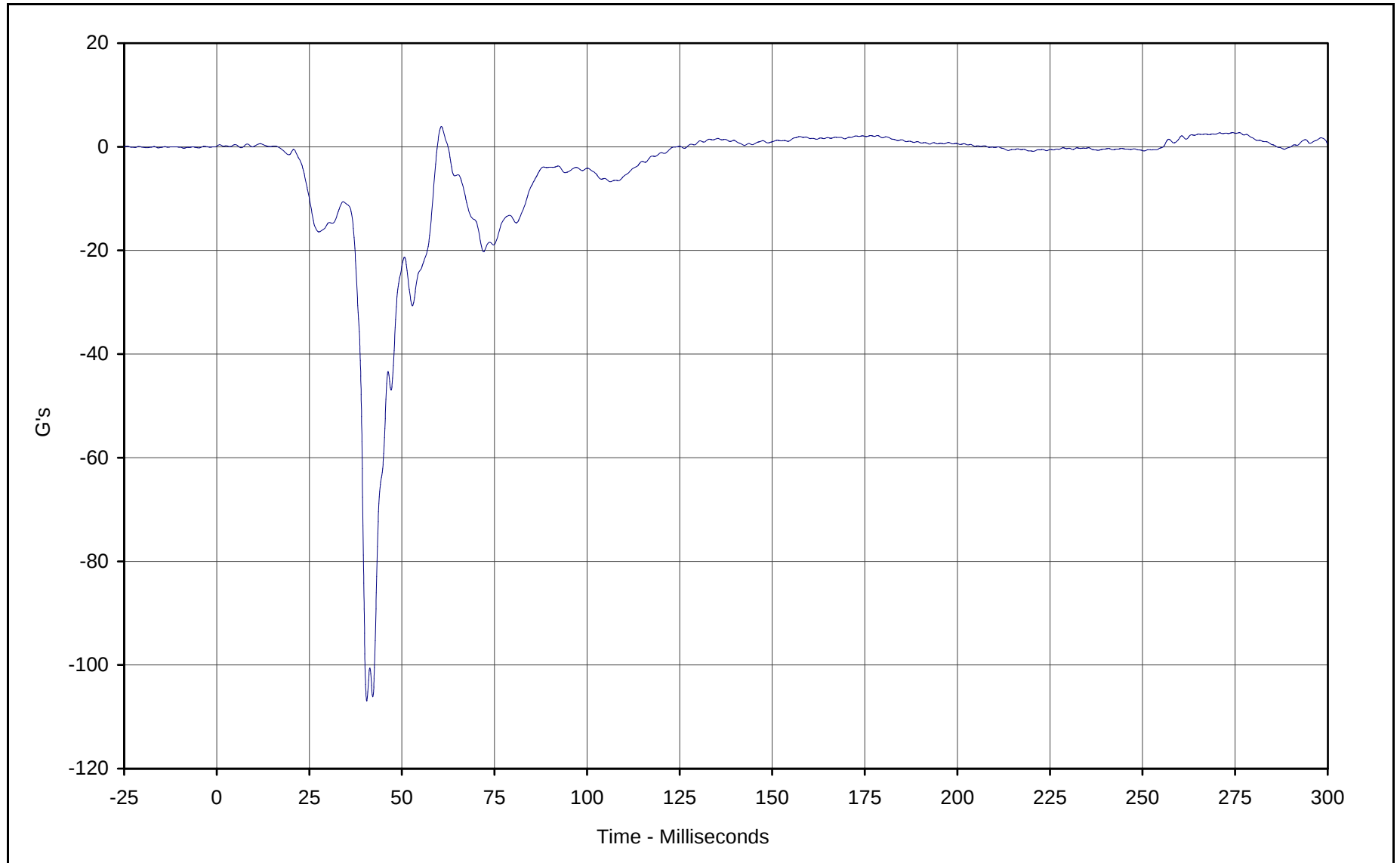
Curve Description: Passenger Right Foot Aft X
Maximum Value: 11.0 at 94.2 Milliseconds
Minimum Value: -87.2 at 40.2 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-086

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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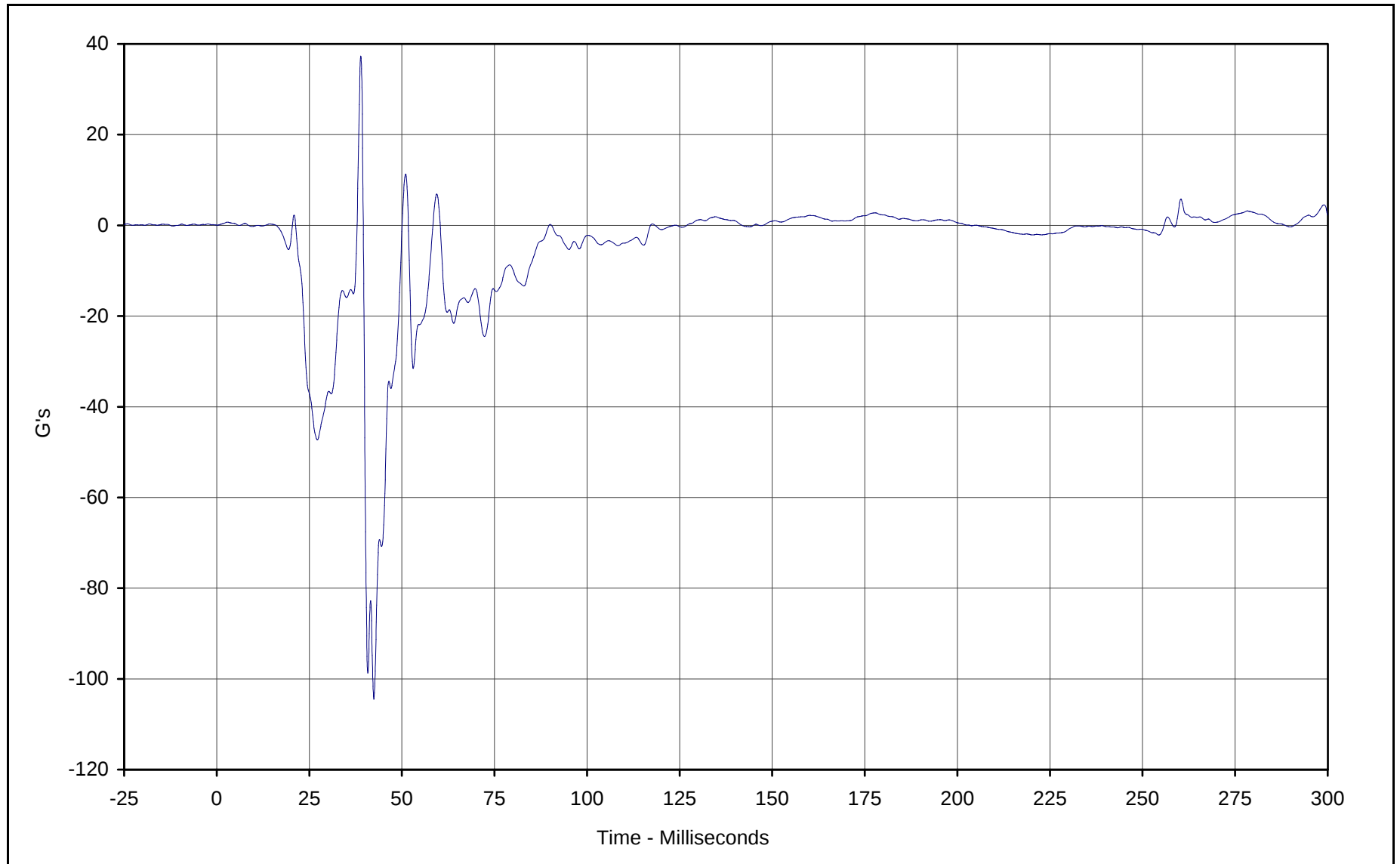
Curve Description: Passenger Right Foot Aft Z
Maximum Value: 3.9 at 60.7 Milliseconds
Minimum Value: -107.0 at 40.5 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-087

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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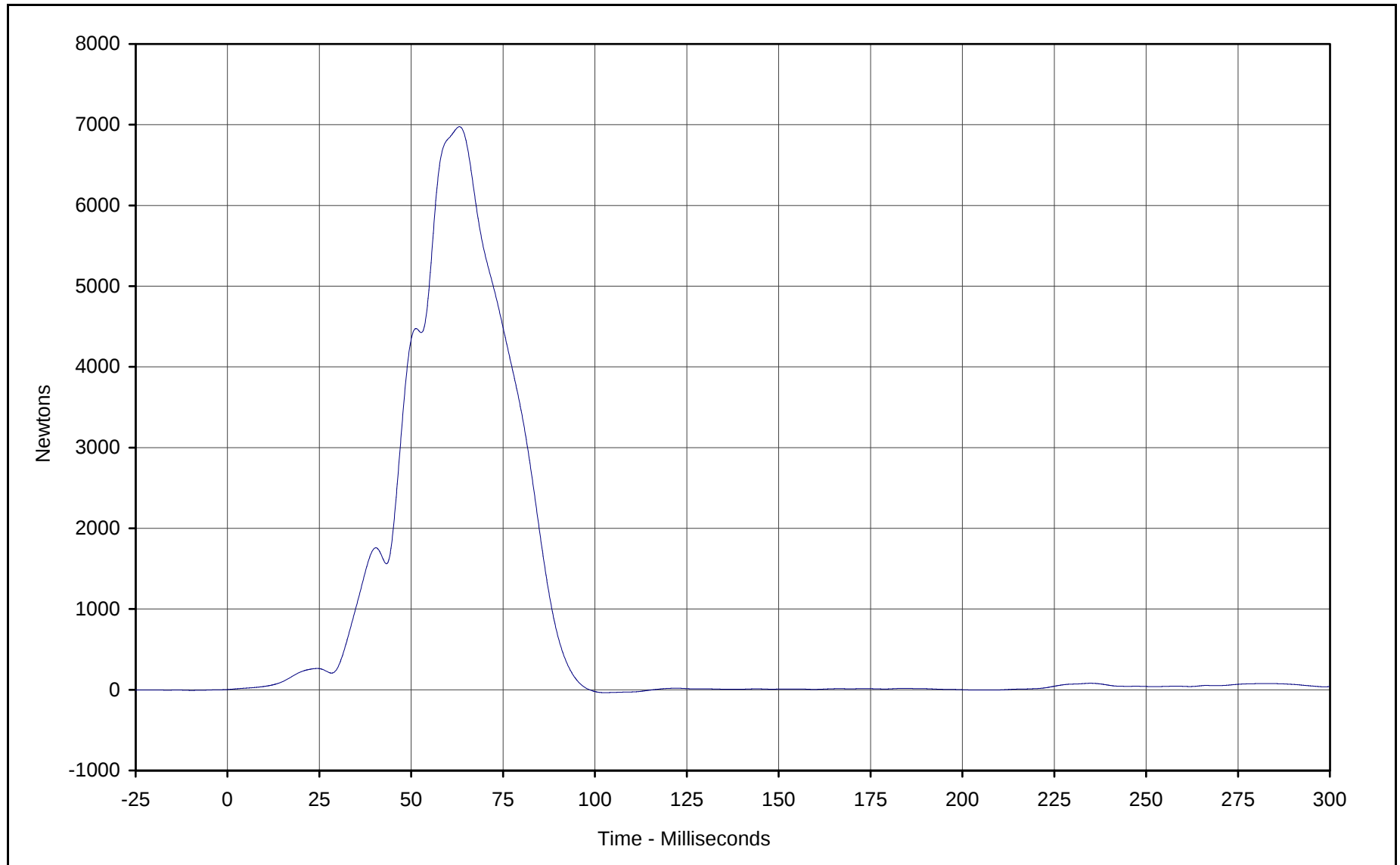
Curve Description: Passenger Right Foot Fore Z
Maximum Value: 37.4 at 38.9 Milliseconds
Minimum Value: -104.5 at 42.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: FIL-088

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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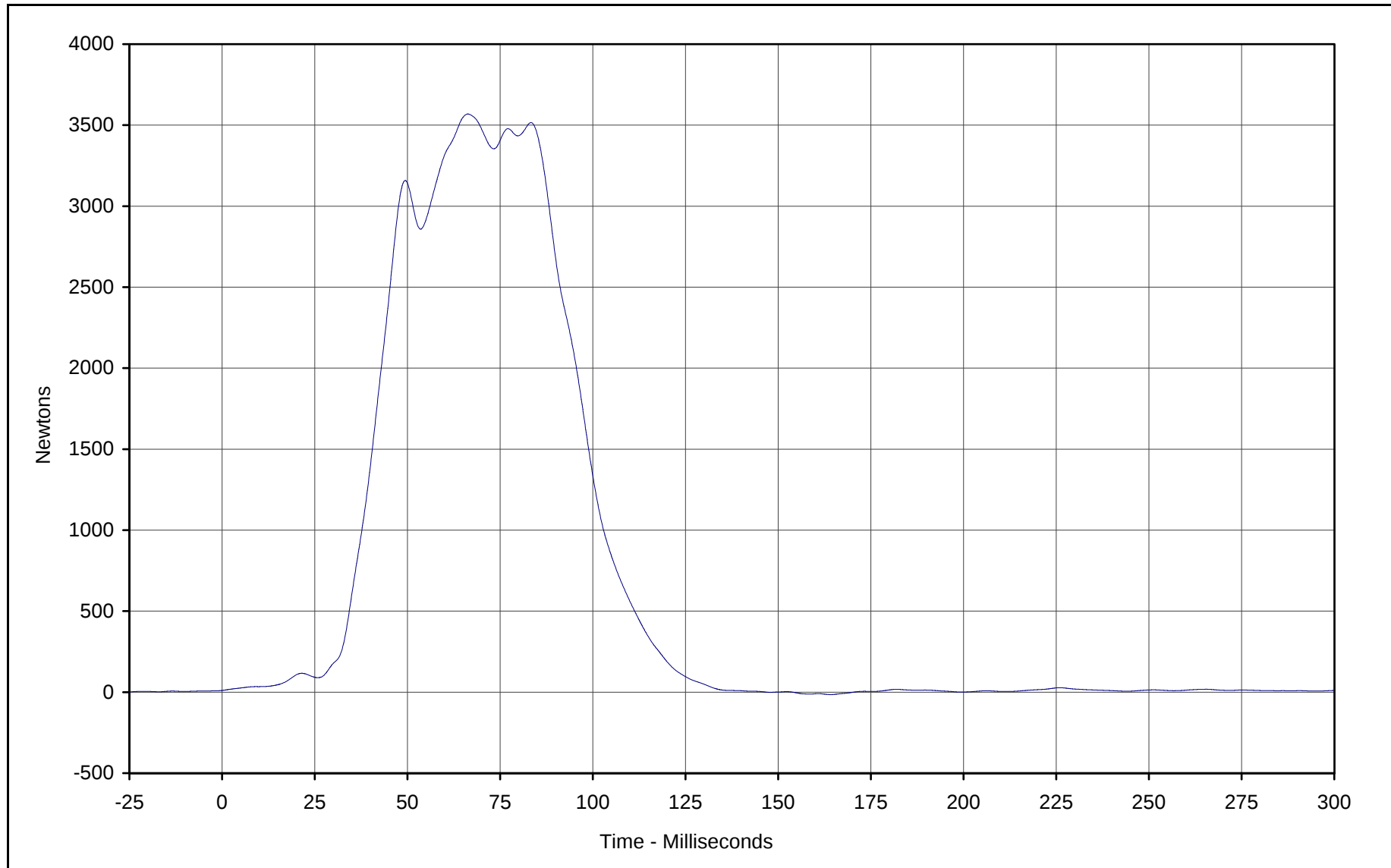


Curve Description: Passenger Lap Belt Force
Maximum Value: 6975.4 at 63.1 Milliseconds
Minimum Value: -35.7 at 102.6 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-089

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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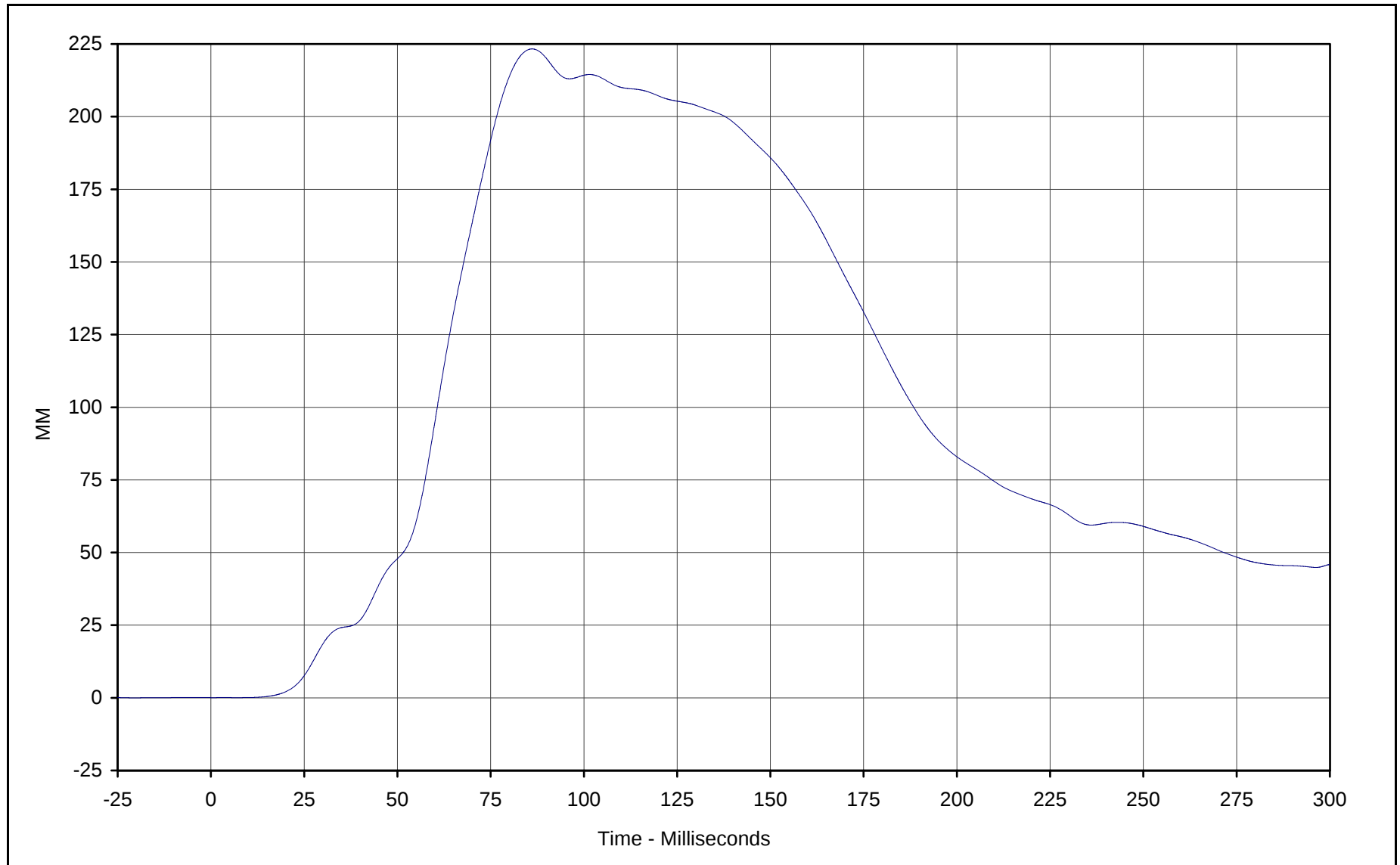


Curve Description: Passenger Shoulder Belt Force
Maximum Value: 3568.7 at 66.3 Milliseconds
Minimum Value: -15.1 at 164.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-090

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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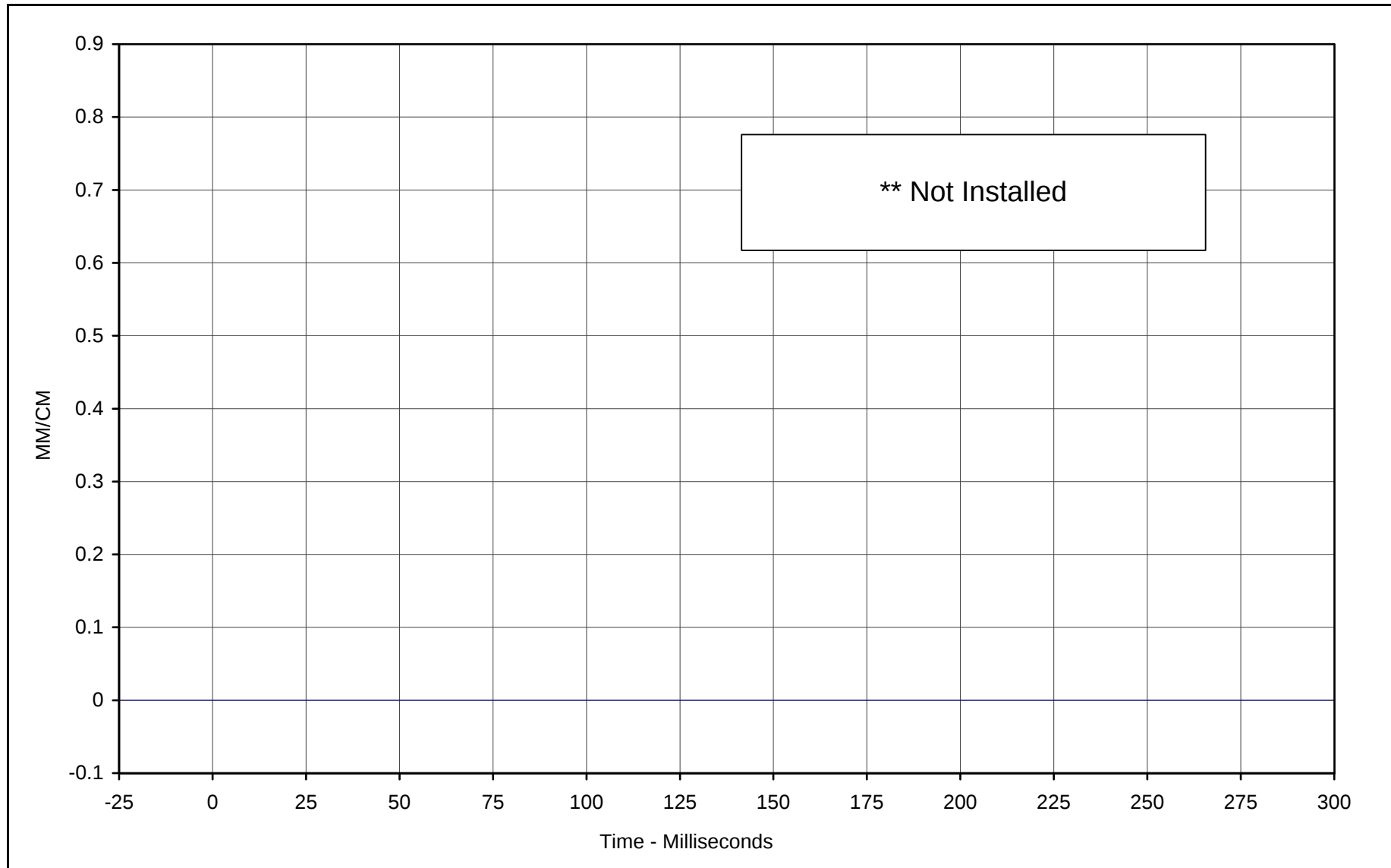


Curve Description: Passenger Shoulder Belt Pullout
Maximum Value: 223.3 at 86.1 Milliseconds
Minimum Value: 0.1 at 6.6 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-091

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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Curve Description: Passenger Shoulder Belt Elongation **

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Minimum Value: 0.0 at 0.0 Milliseconds

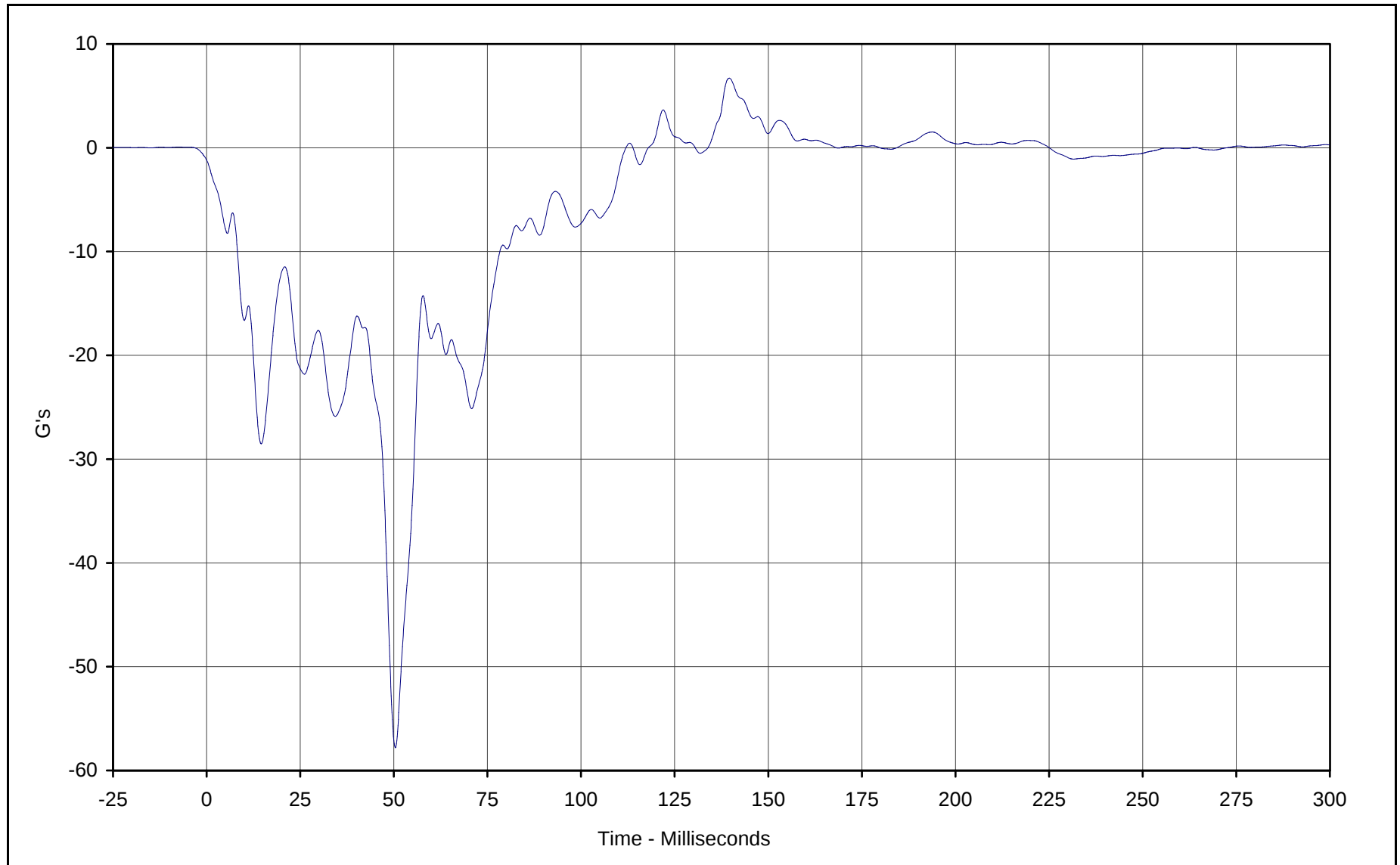
SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-092

** Not installed



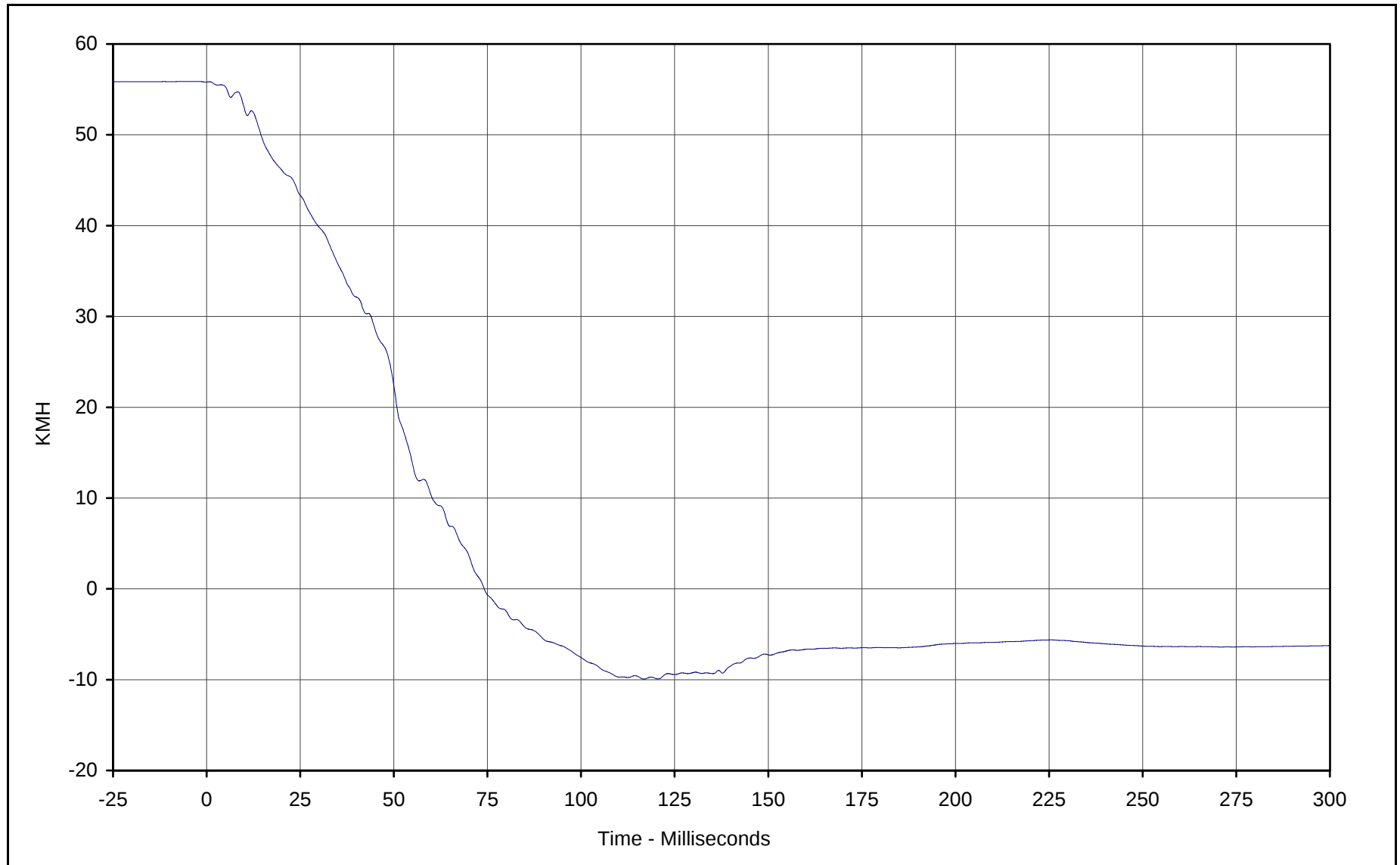


Curve Description: Vehicle Left Rear X
Maximum Value: 6.7 at 139.6 Milliseconds
Minimum Value: -57.8 at 50.4 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-093

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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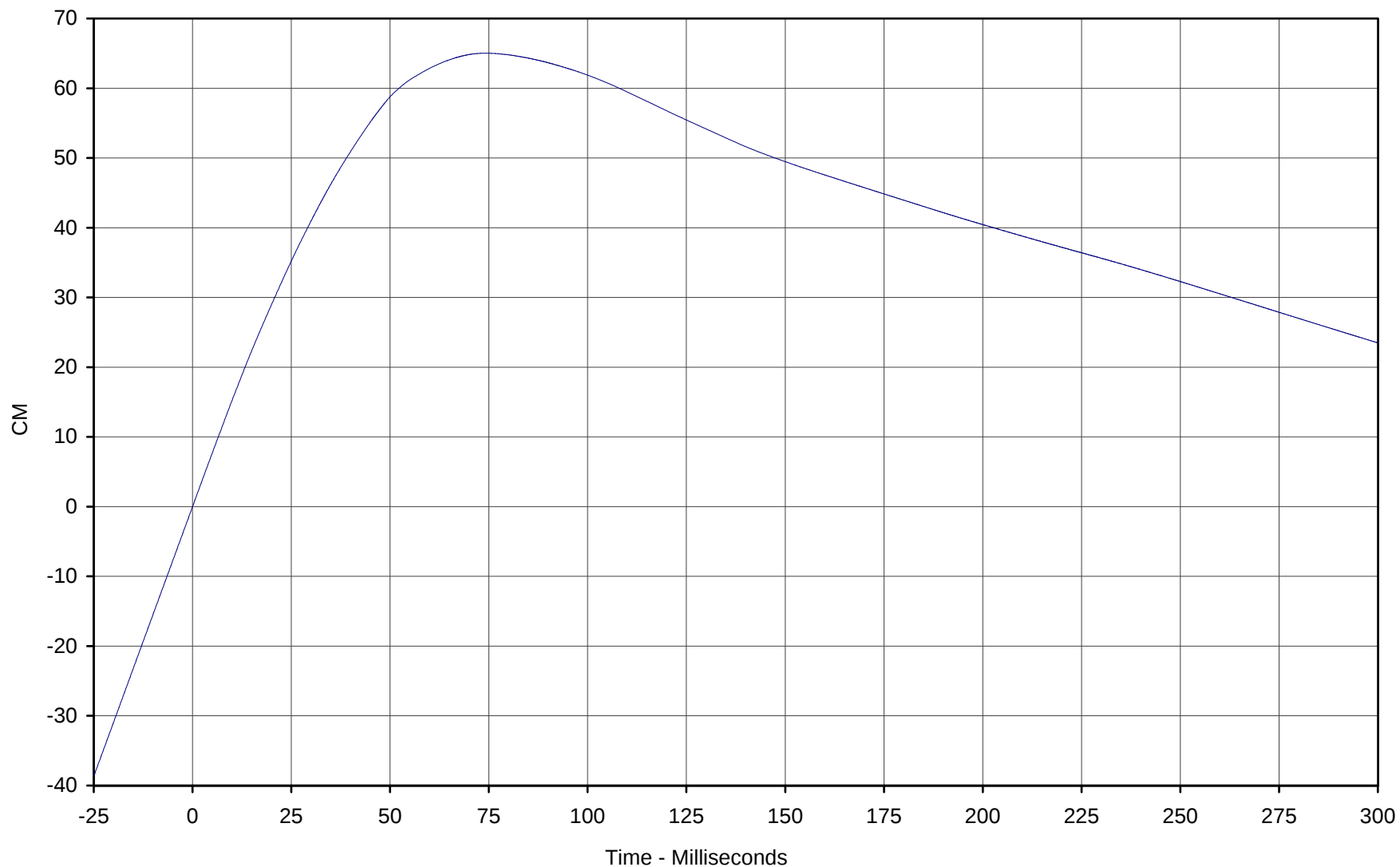
Curve Description: Vehicle Left Rear X Velocity
Maximum Value: 55.8 at 0.8 Milliseconds
Minimum Value: -9.9 at 116.8 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-093

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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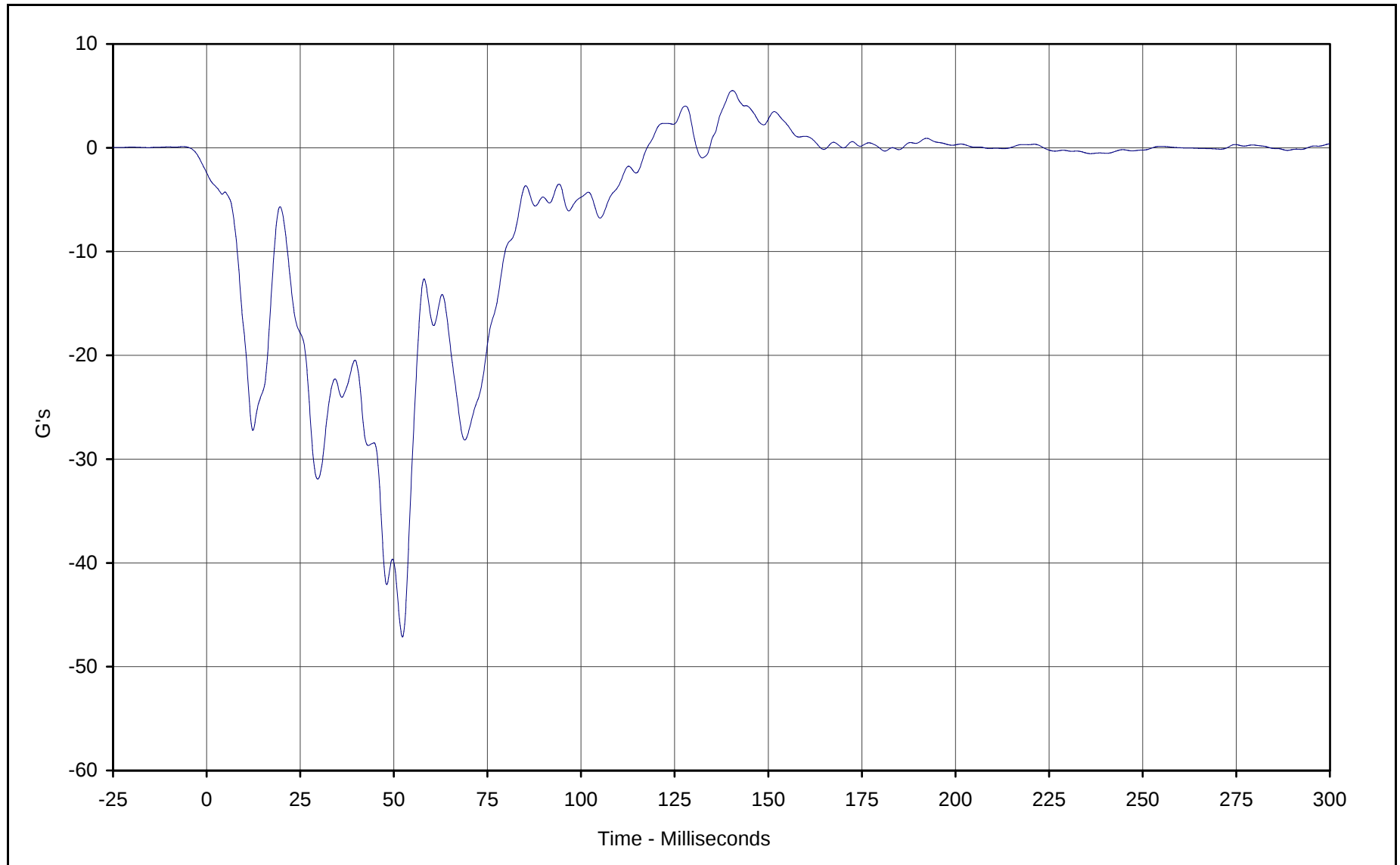
Curve Description: Vehicle Left Rear X Displ.
Maximum Value: 65.0 at 74.1 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-093

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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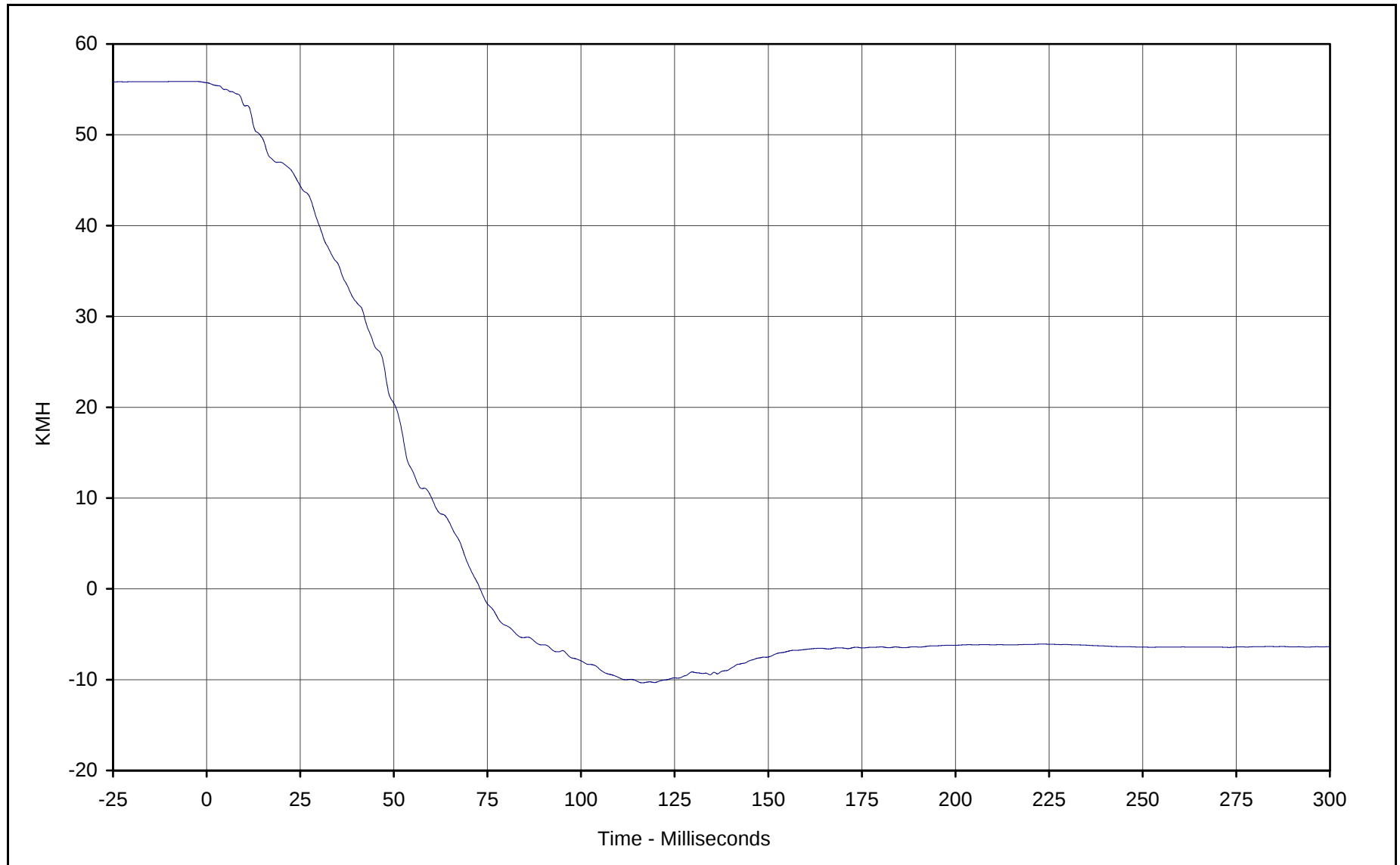
Curve Description: Vehicle Right Rear X
Maximum Value: 5.5 at 140.5 Milliseconds
Minimum Value: -47.1 at 52.3 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-094

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



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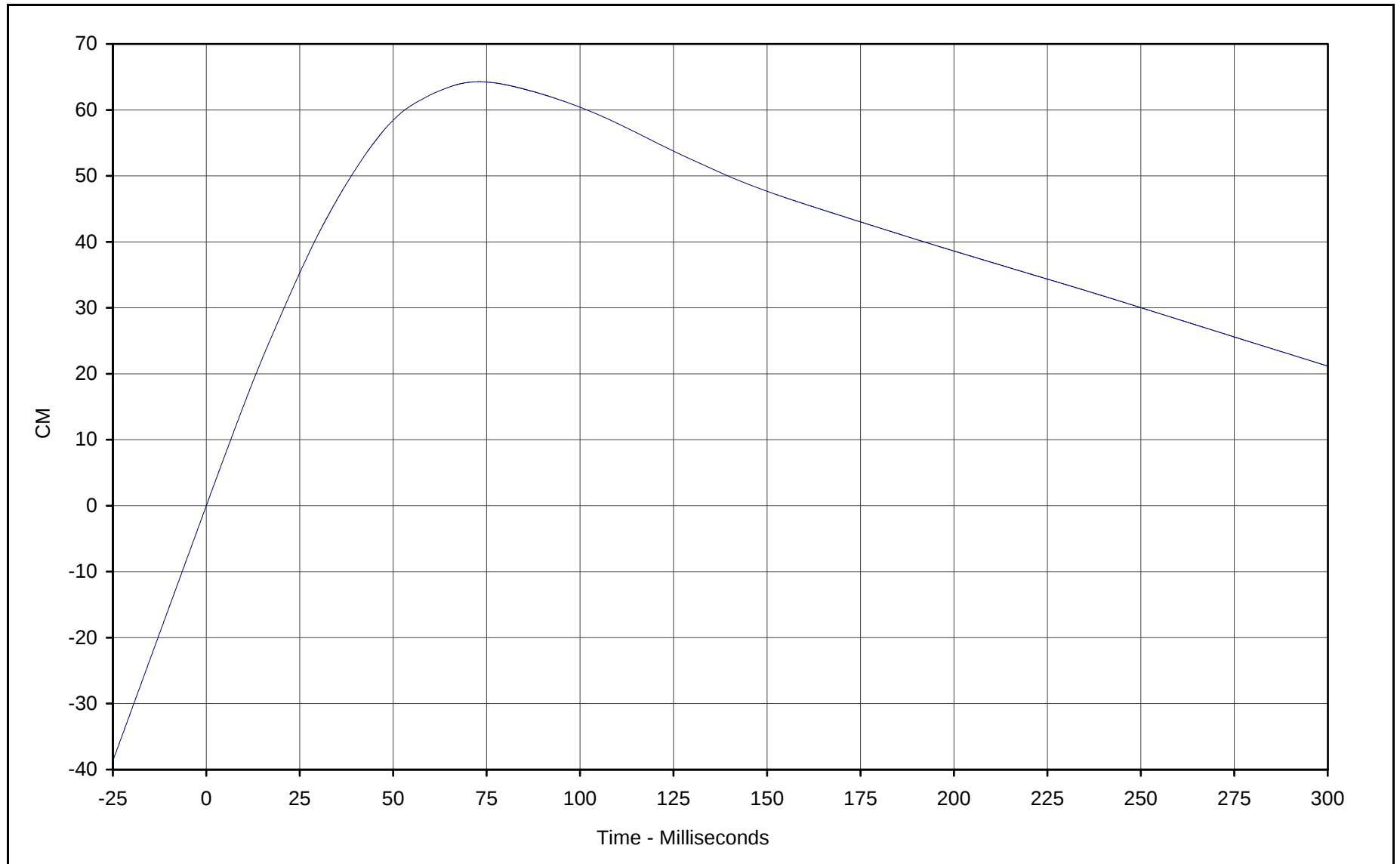
Curve Description: Vehicle Right Rear X Velocity
Maximum Value: 55.7 at 0.0 Milliseconds
Minimum Value: -10.4 at 116.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-094

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-132



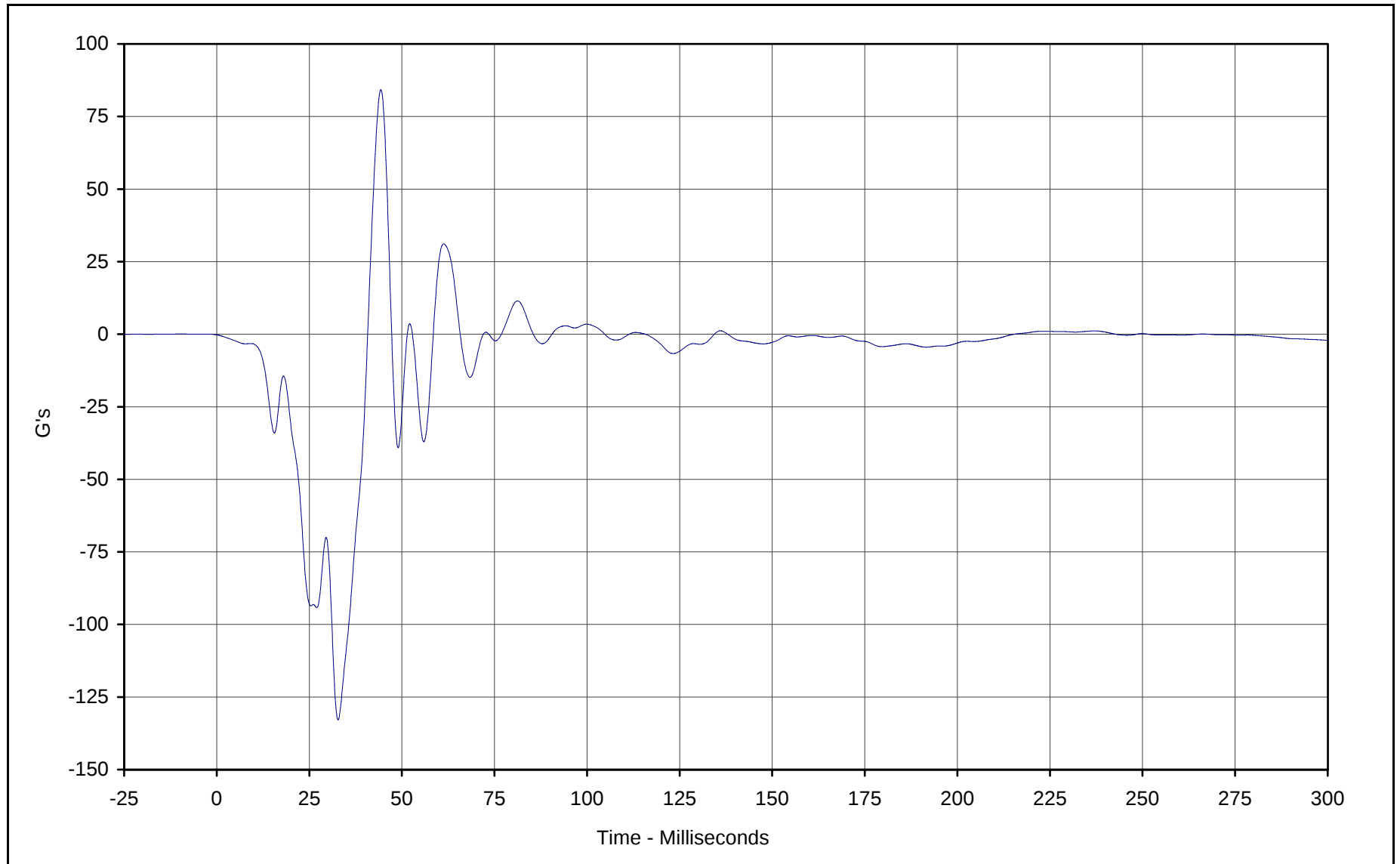
Curve Description: Vehicle Right Rear X Displ.
Maximum Value: 64.3 at 73.0 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-094

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-133



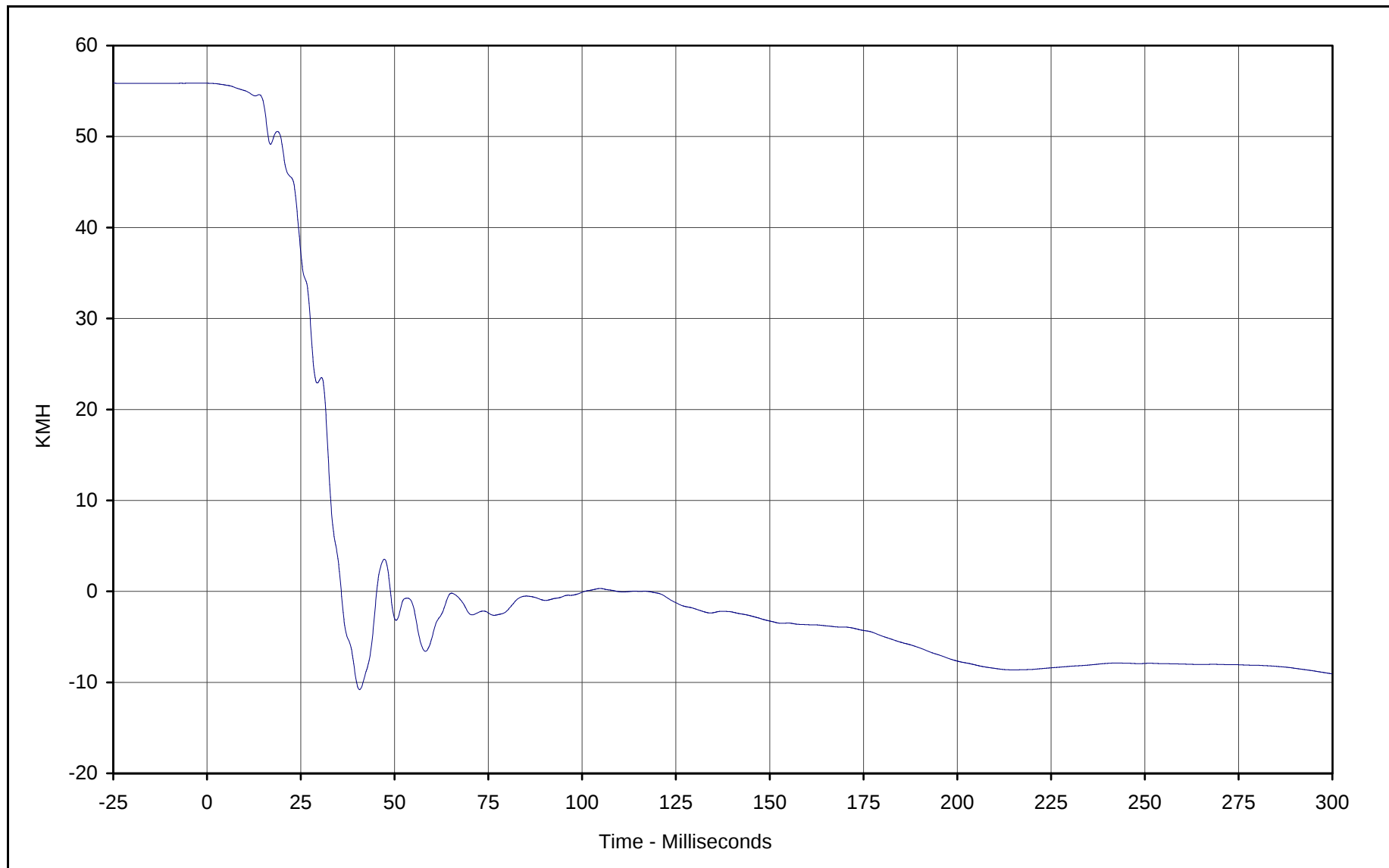
Curve Description: Vehicle Engine Top
Maximum Value: 84.3 at 44.3 Milliseconds
Minimum Value: -132.8 at 32.8 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-095

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-134



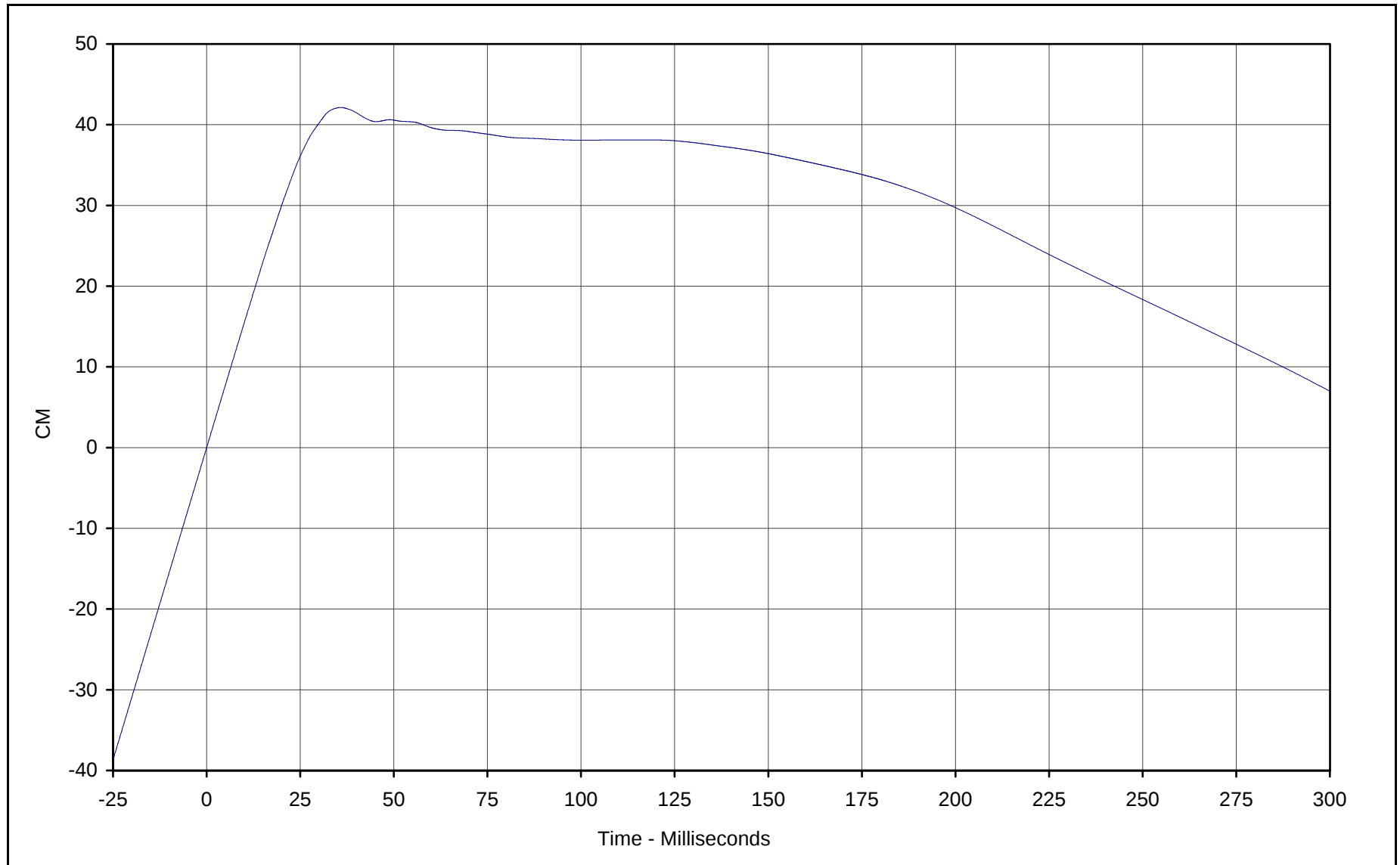
Curve Description: Vehicle Engine Top Velocity
Maximum Value: 55.9 at 0.0 Milliseconds
Minimum Value: -10.8 at 40.7 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-095

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-135

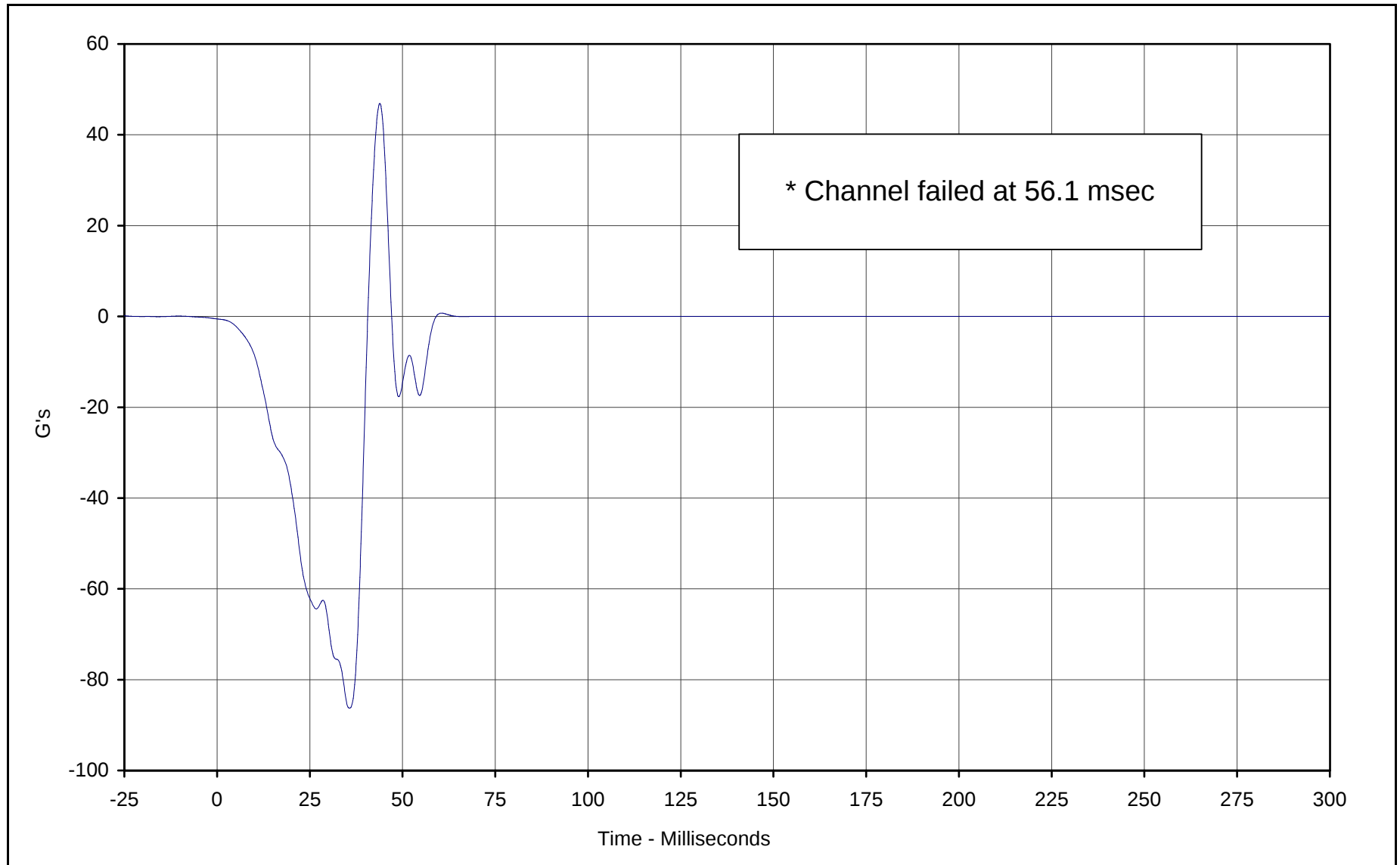


Curve Description: Vehicle Engine Top Displacement
Maximum Value: 42.1 at 35.8 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-095

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



Curve Description: Vehicle Engine Bottom *

Maximum Value: 46.9 at 43.9 Milliseconds

Minimum Value: -86.3 at 35.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

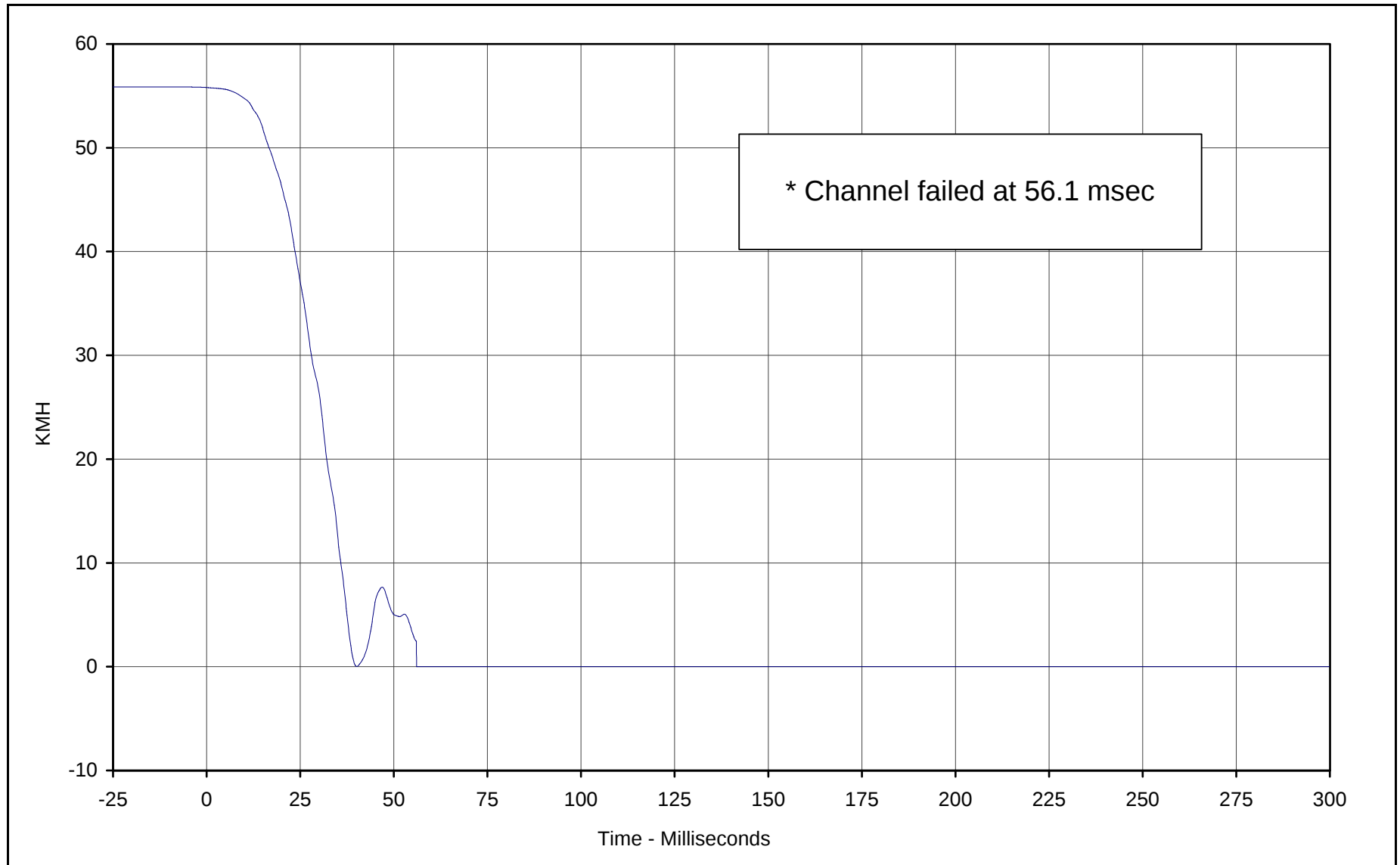
Curve Number: FIL-096

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec





Curve Description: Vehicle Engine Bottom Velocity *

Maximum Value: 55.8 at 0.0 Milliseconds

Minimum Value: 0.0 at 56.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

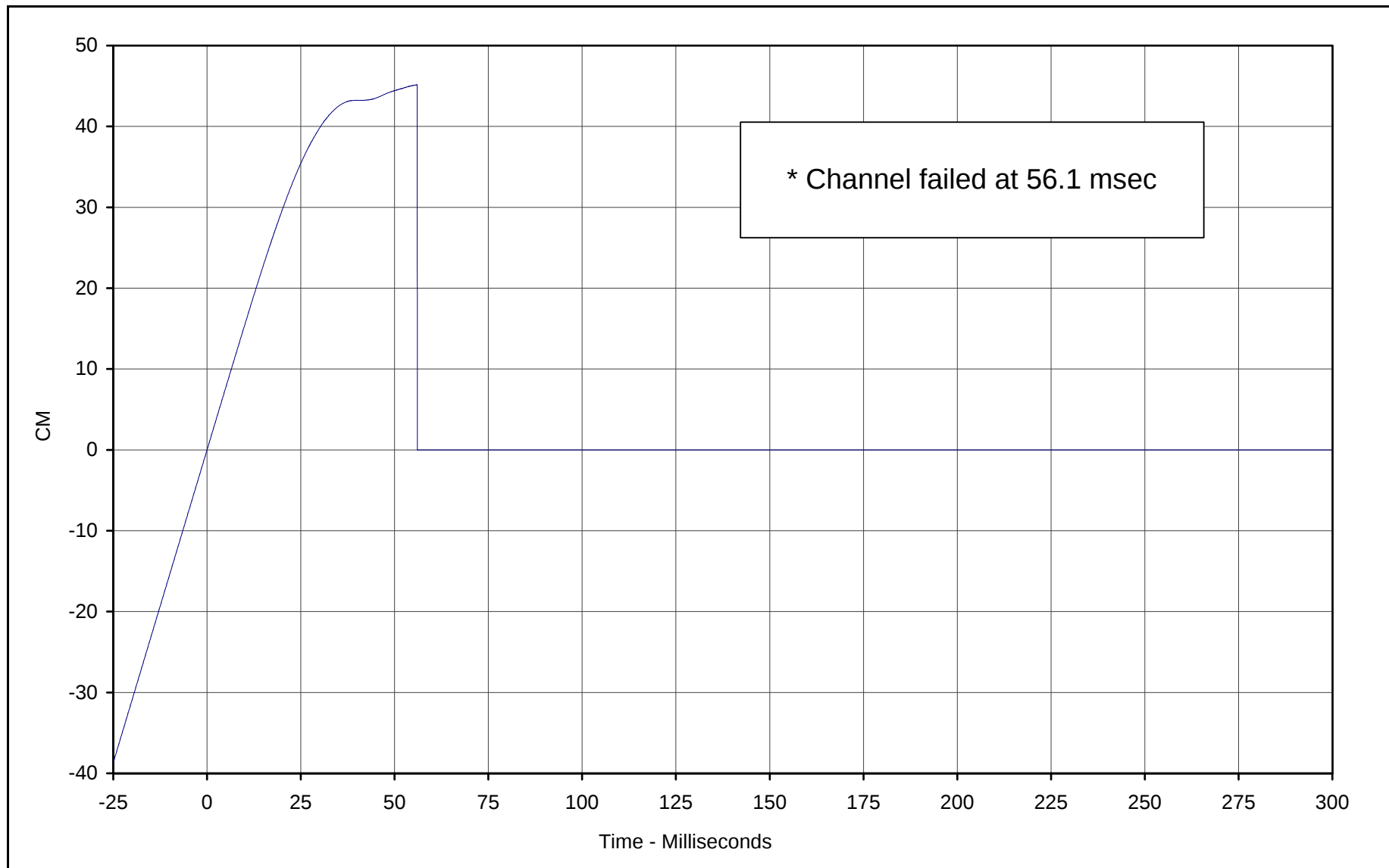
Curve Number: IN1-096

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec





Curve Description: Vehicle Engine Bottom Displacement *

Maximum Value: 45.2 at 56.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

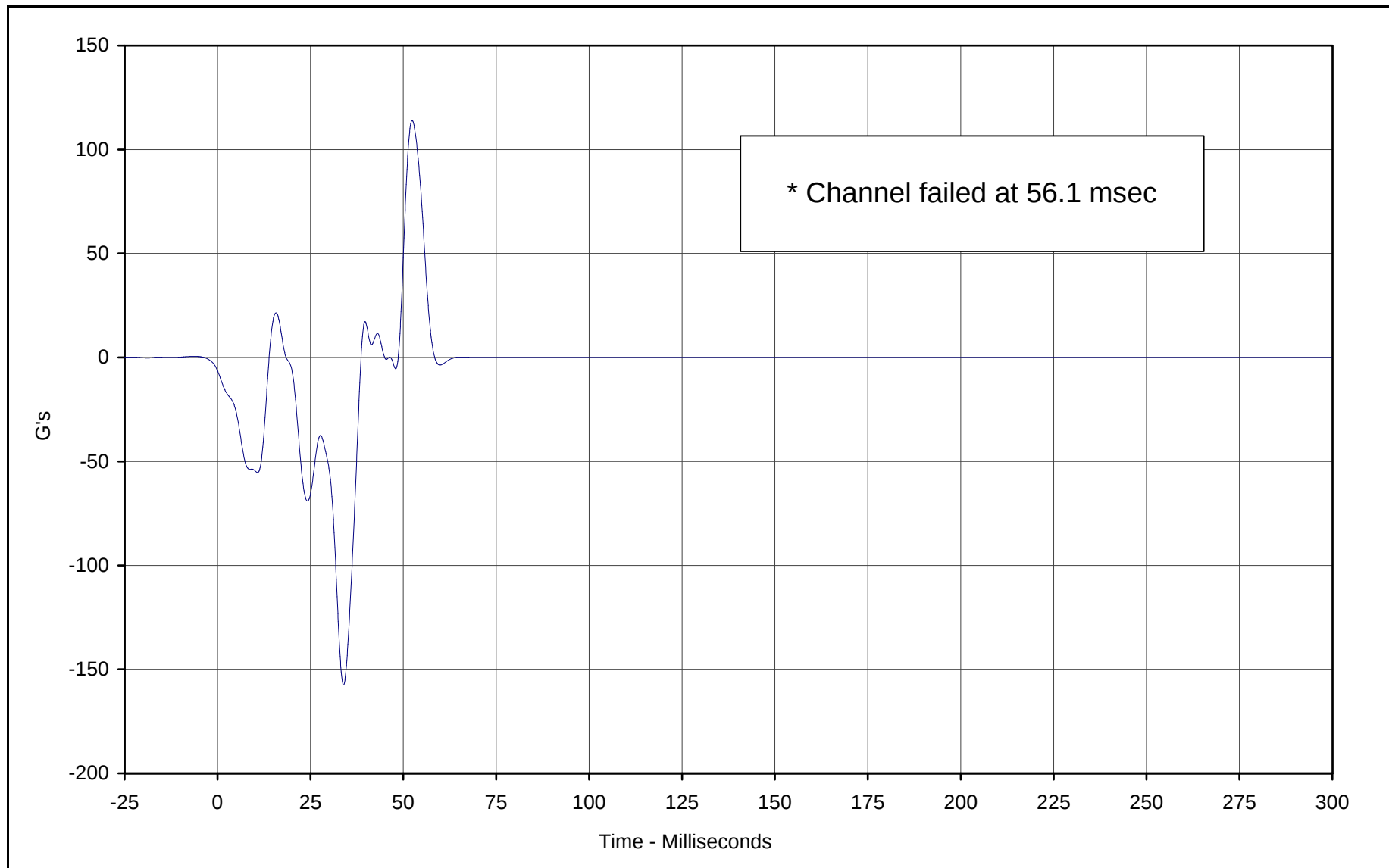
Curve Number: IN2-096

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec





Curve Description: Vehicle Left Brake Caliper *

Maximum Value: 114.1 at 52.4 Milliseconds

Minimum Value: -157.6 at 33.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

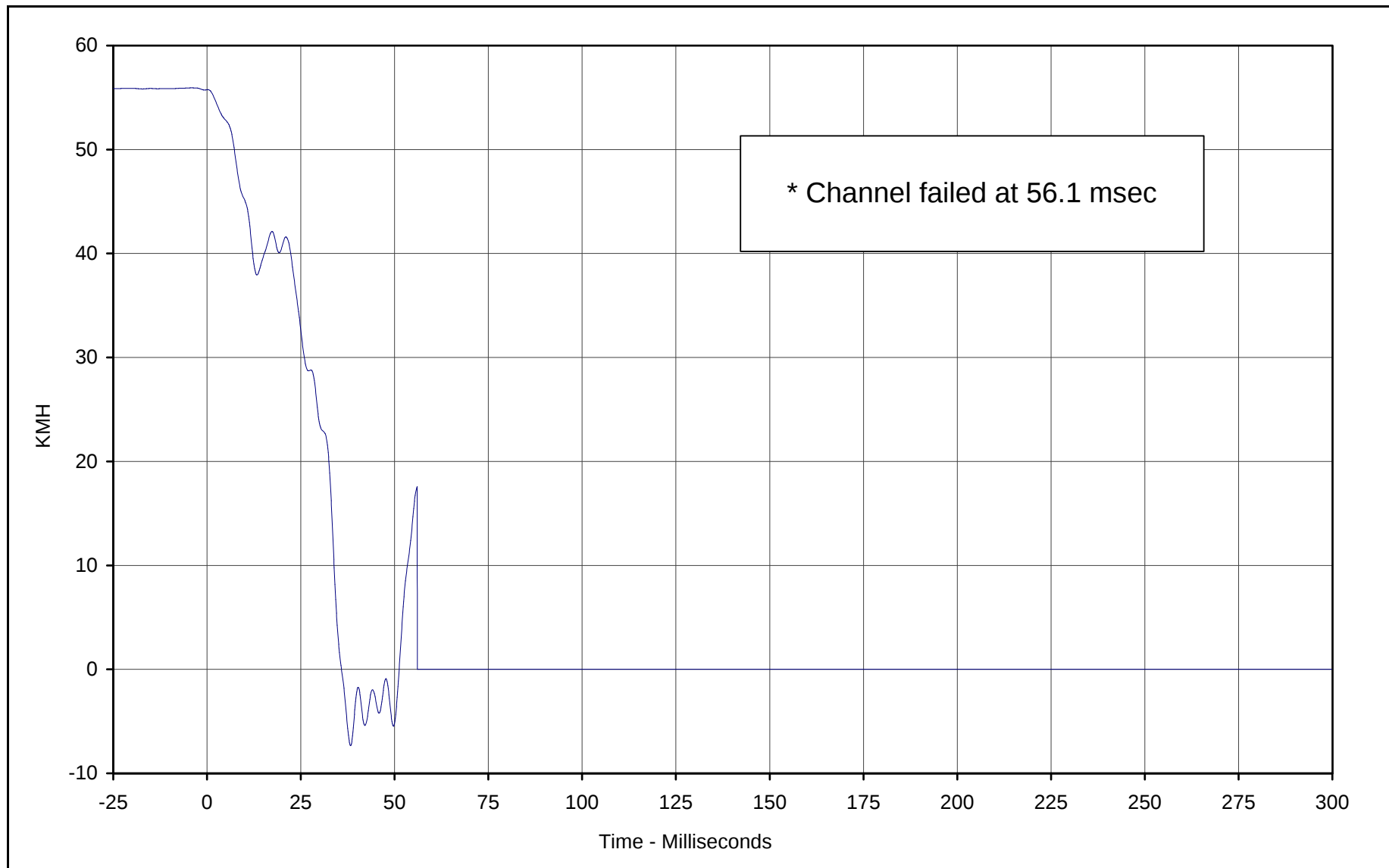
Curve Number: FIL-097

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec





Curve Description: Vehicle Left Brake Caliper Velocity *

Maximum Value: 55.8 at 0.2 Milliseconds

Minimum Value: -7.3 at 38.3 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

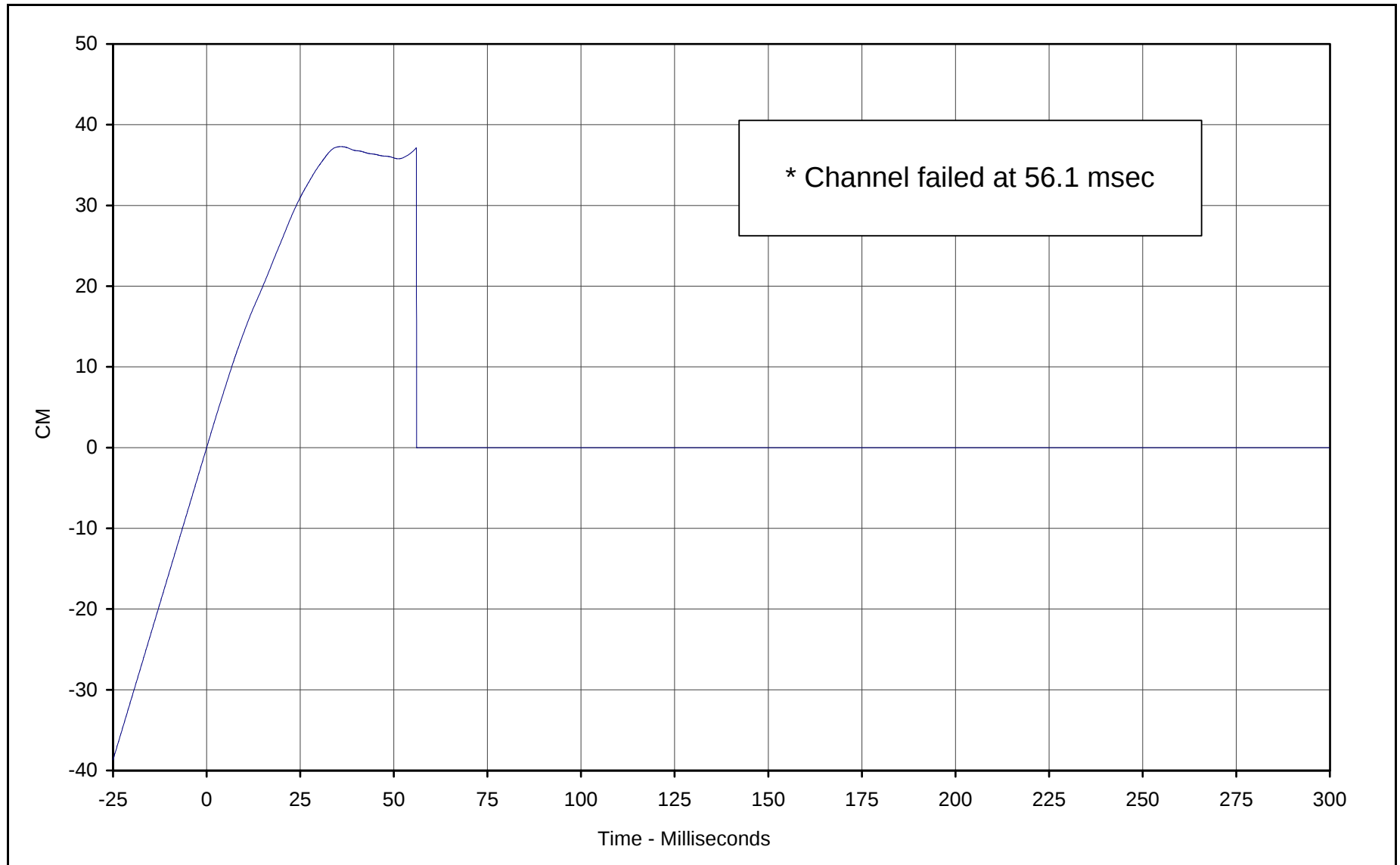
Curve Number: IN1-097

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec





Curve Description: Vehicle Left Brake Caliper Displ. *

Maximum Value: 37.3 at 35.8 Milliseconds

Minimum Value: 0.0 at 56.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: IN2-097

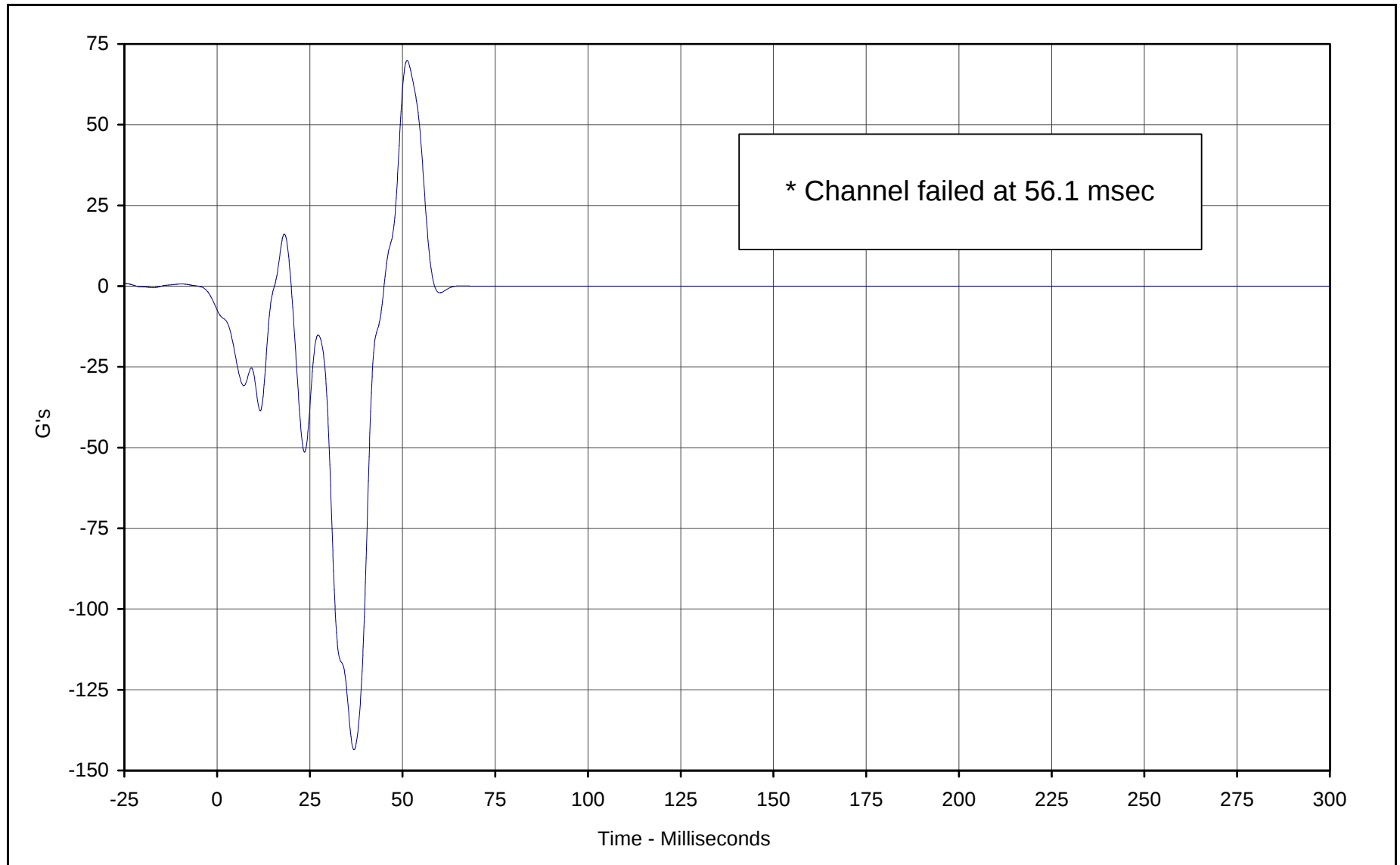
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec



B-142



Curve Description: Vehicle Right Brake Caliper *

Maximum Value: 69.9 at 51.2 Milliseconds

Minimum Value: -143.6 at 36.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-098

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

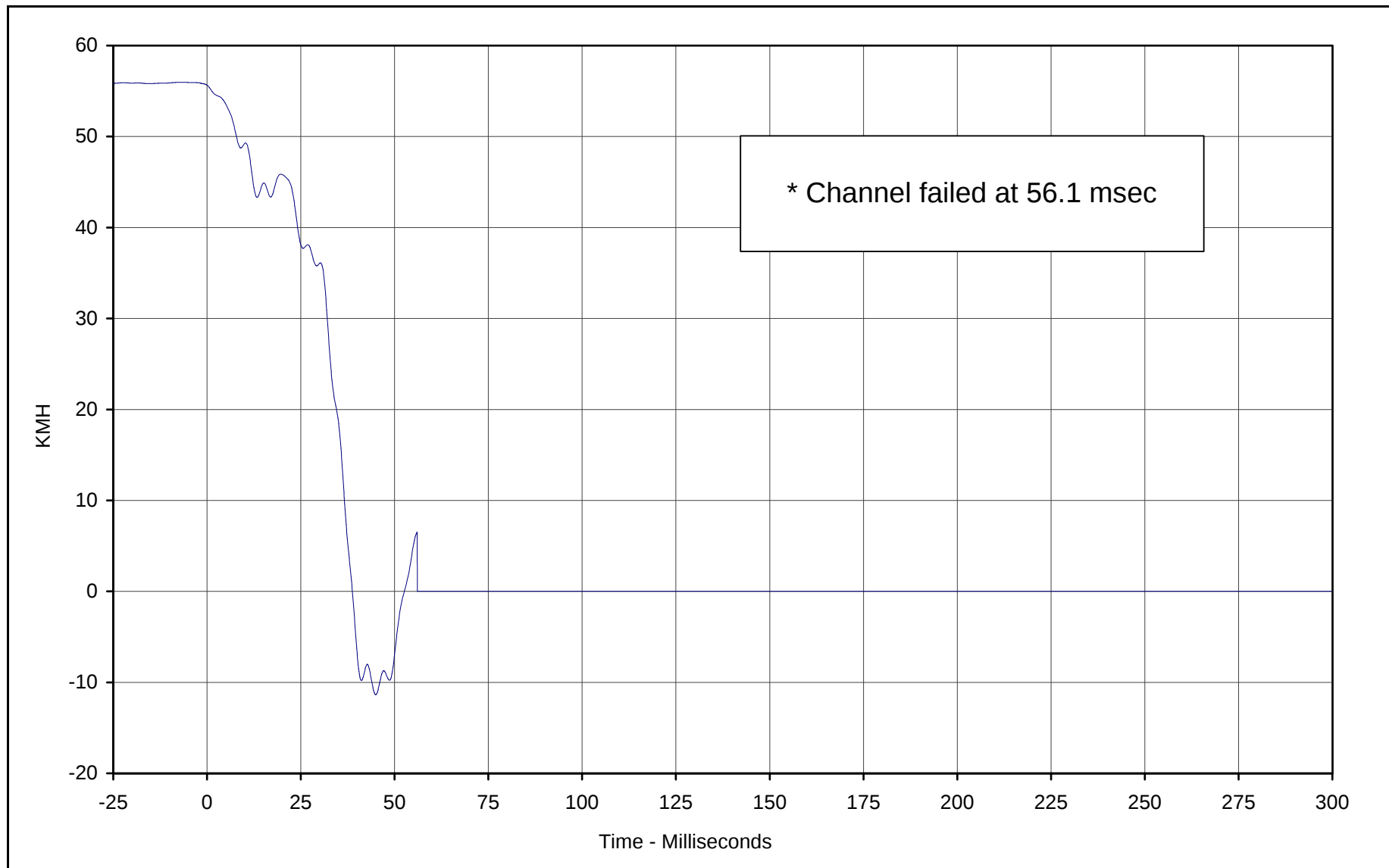
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec



KAR22001-02

B-143



Curve Description: Vehicle Right Brake Caliper Velocity *

Maximum Value: 55.7 at 0.0 Milliseconds

Minimum Value: -11.4 at 45.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: IN1-098

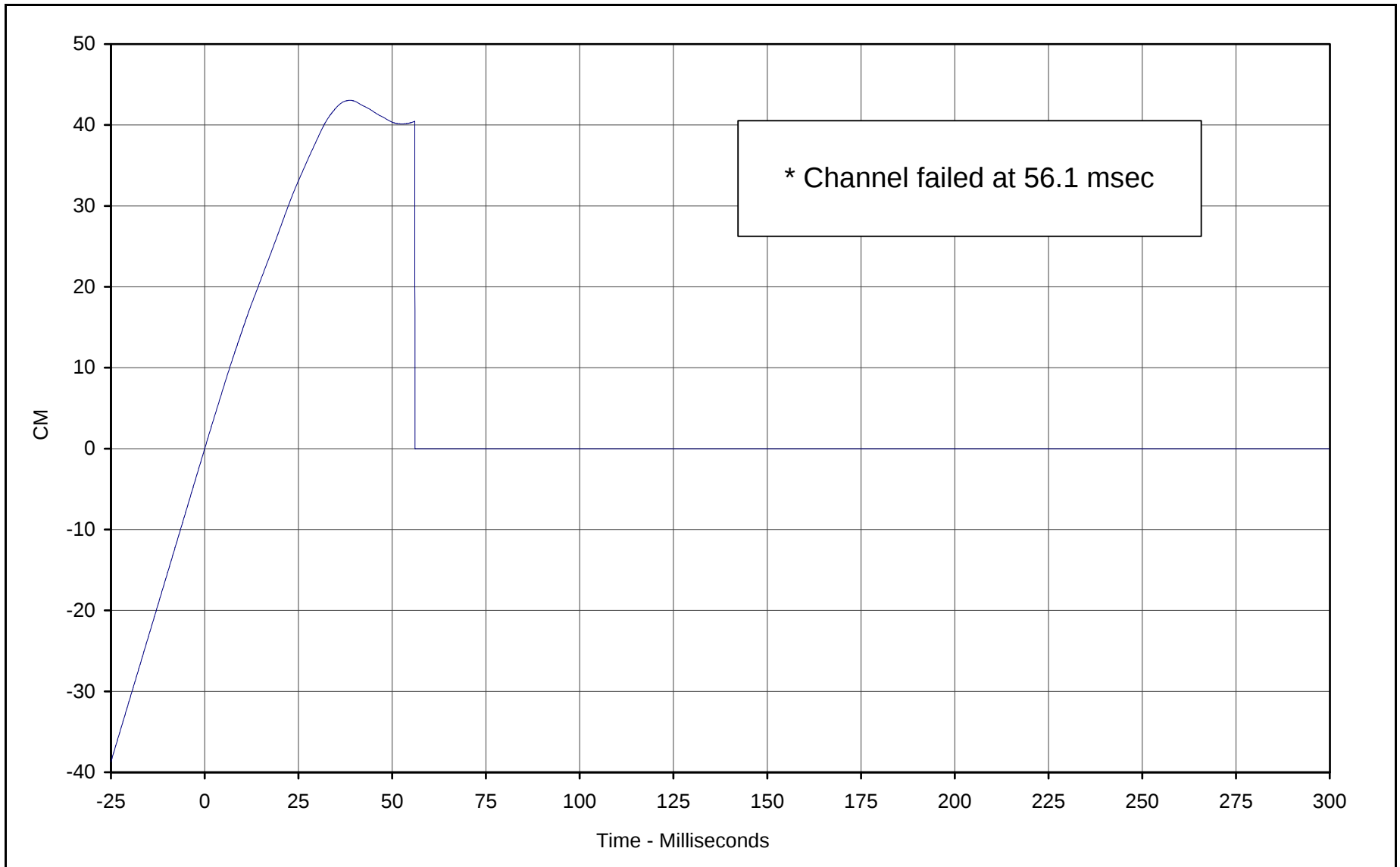
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec



KAR22001-02



Curve Description: Vehicle Right Brake Caliper Displ. *

Maximum Value: 43.1 at 38.8 Milliseconds

Minimum Value: 0.0 at 56.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/13/01

Curve Number: IN2-098

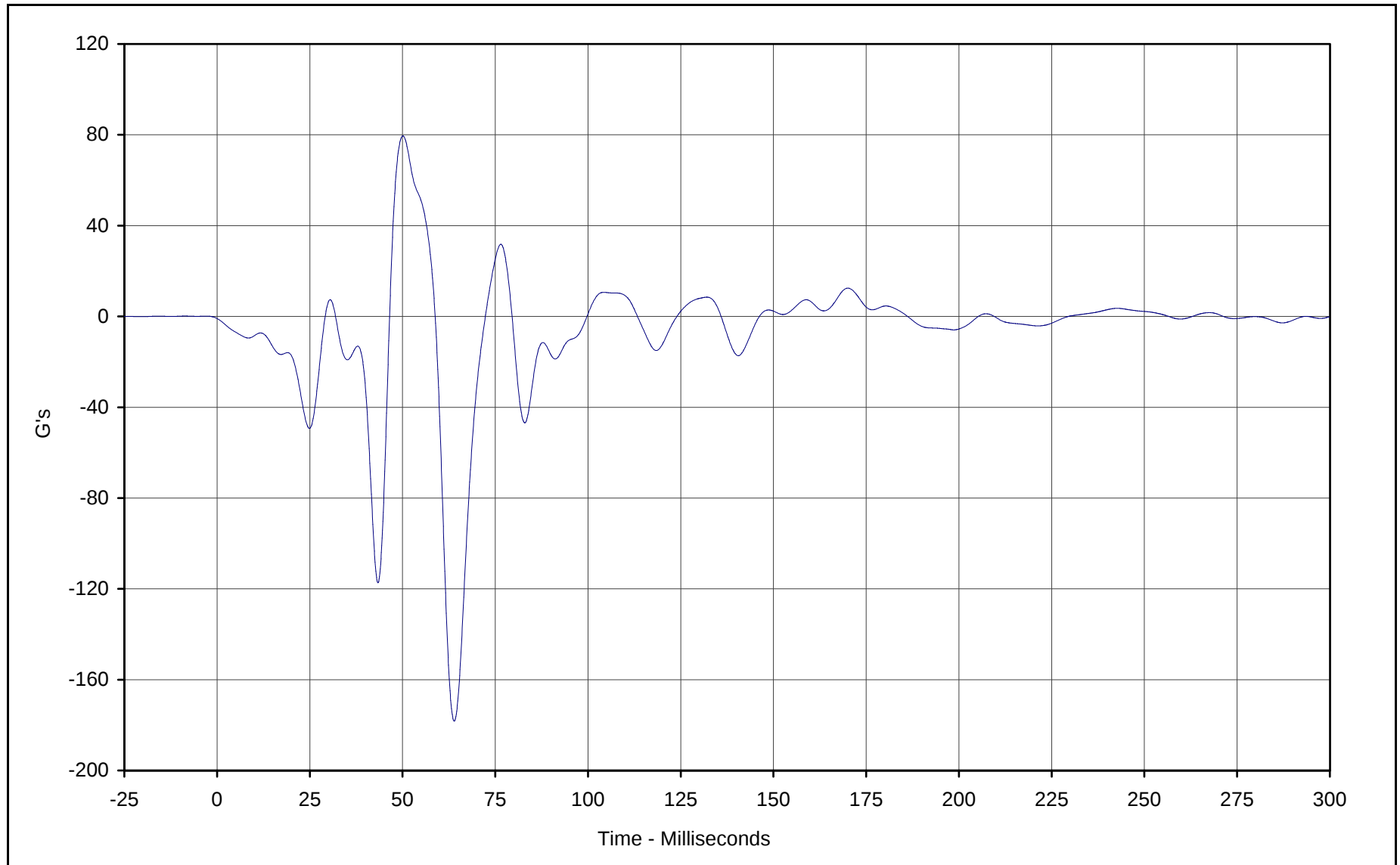
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed at 56.1 msec



B-145



Curve Description: Vehicle Instrument Panel

Maximum Value: 79.5 at 50.1 Milliseconds

Minimum Value: -178.3 at 63.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

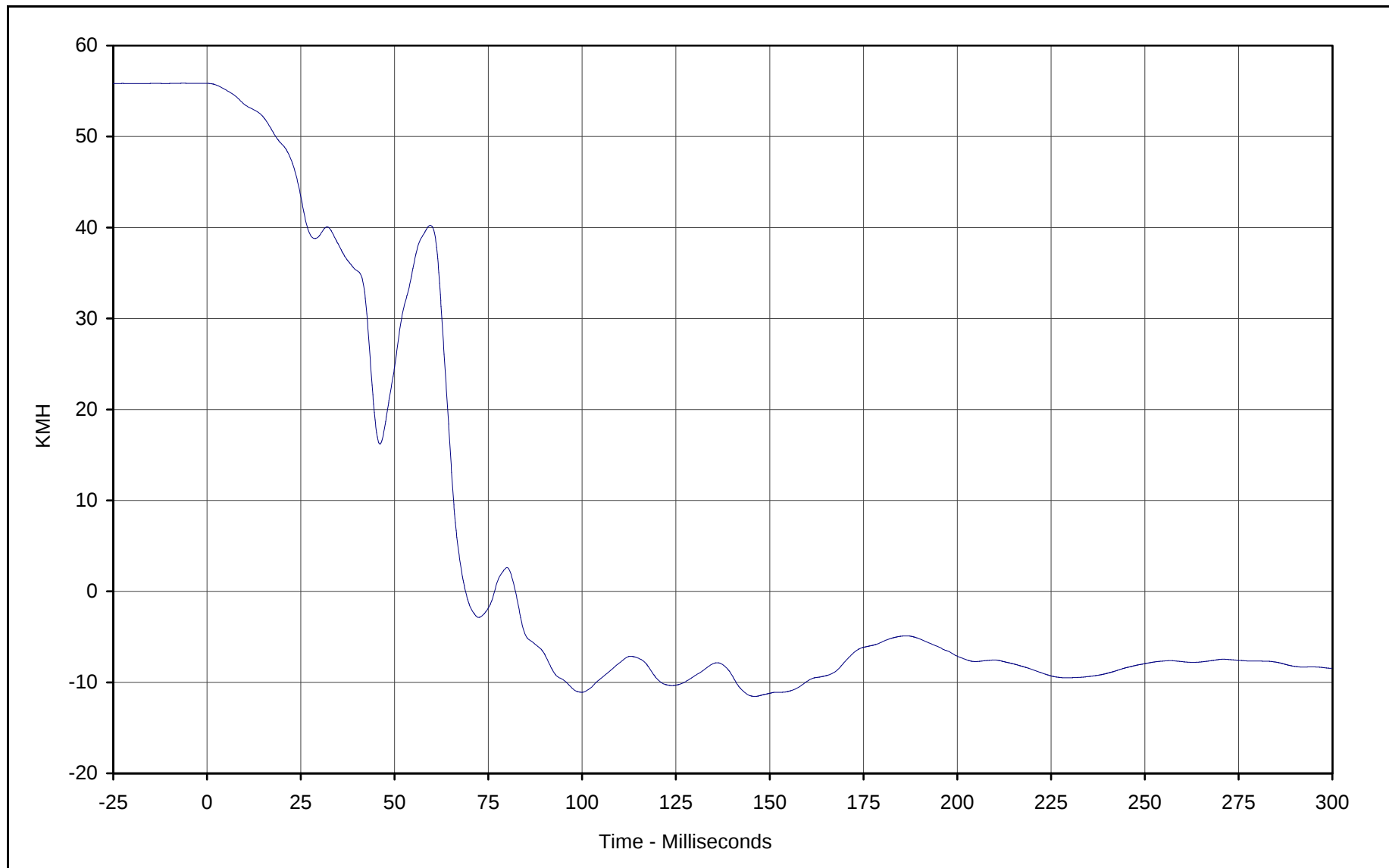
Curve Number: FIL-099

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



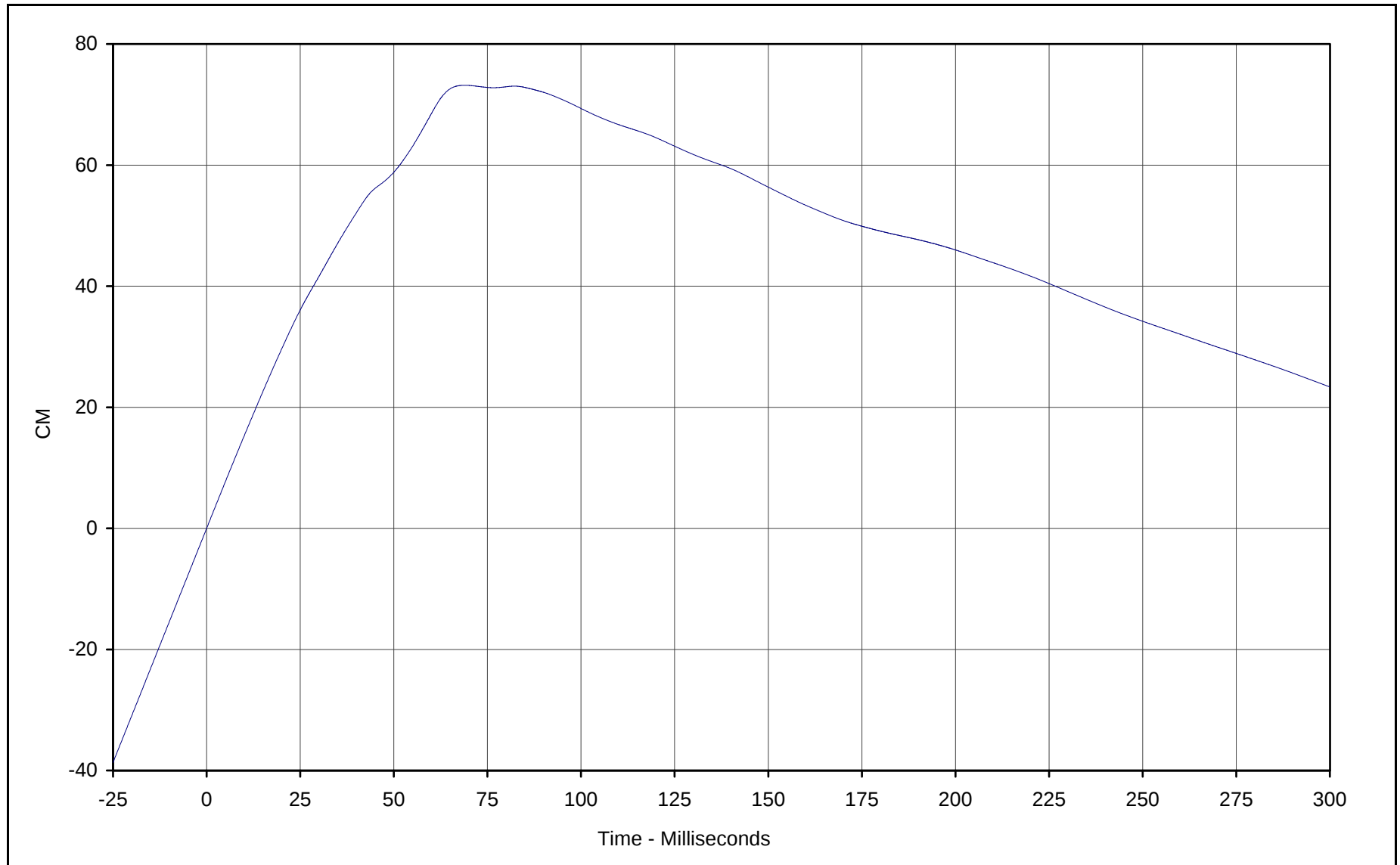
KAR22001-02



Curve Description: Vehicle Instrument Panel Velocity
Maximum Value: 55.8 at 0.0 Milliseconds
Minimum Value: -11.5 at 146.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-099

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





Curve Description: Vehicle Instrument Panel Displacement

Maximum Value: 73.2 at 68.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

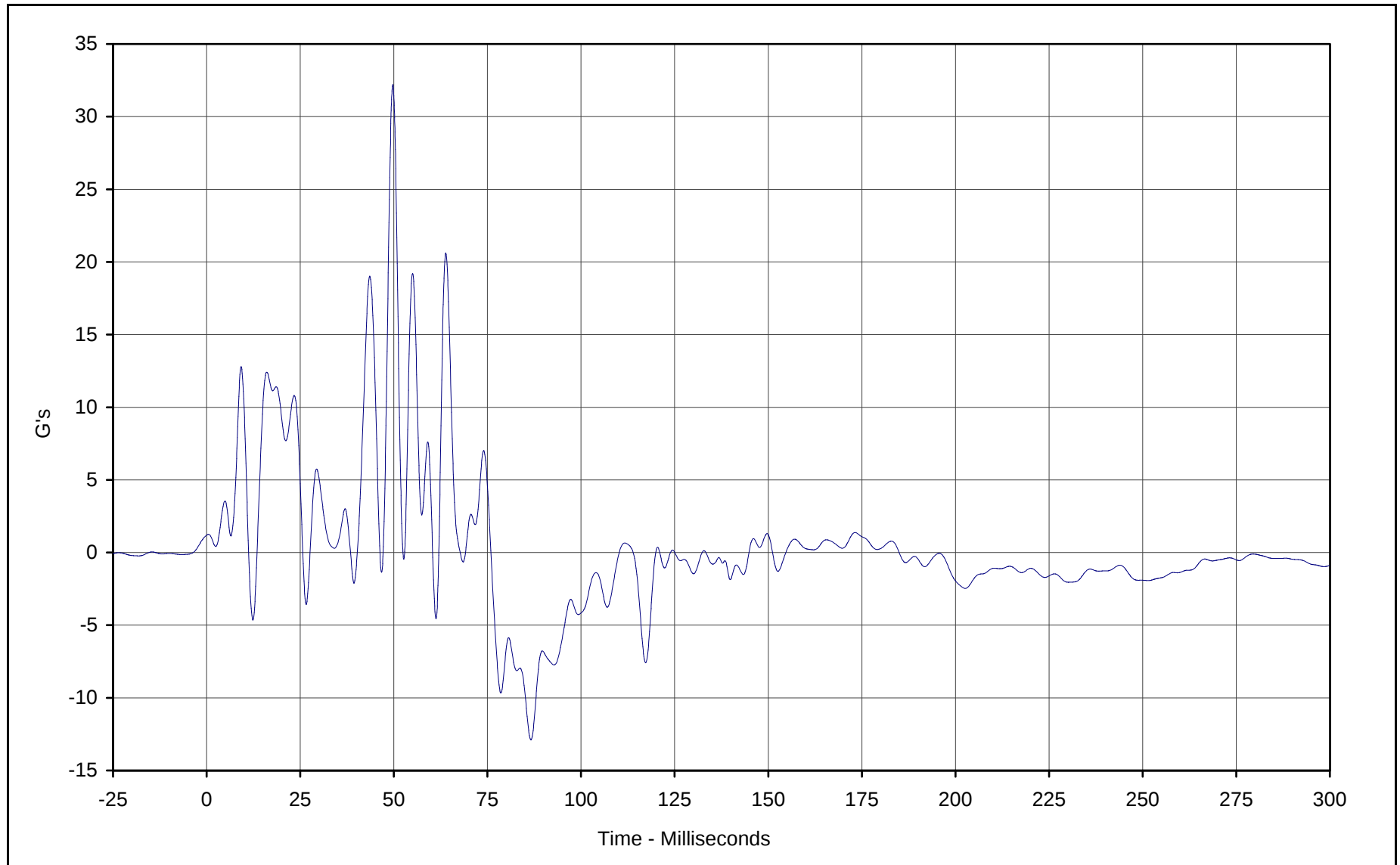
Date of Test: 12/13/01

Curve Number: IN2-099

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

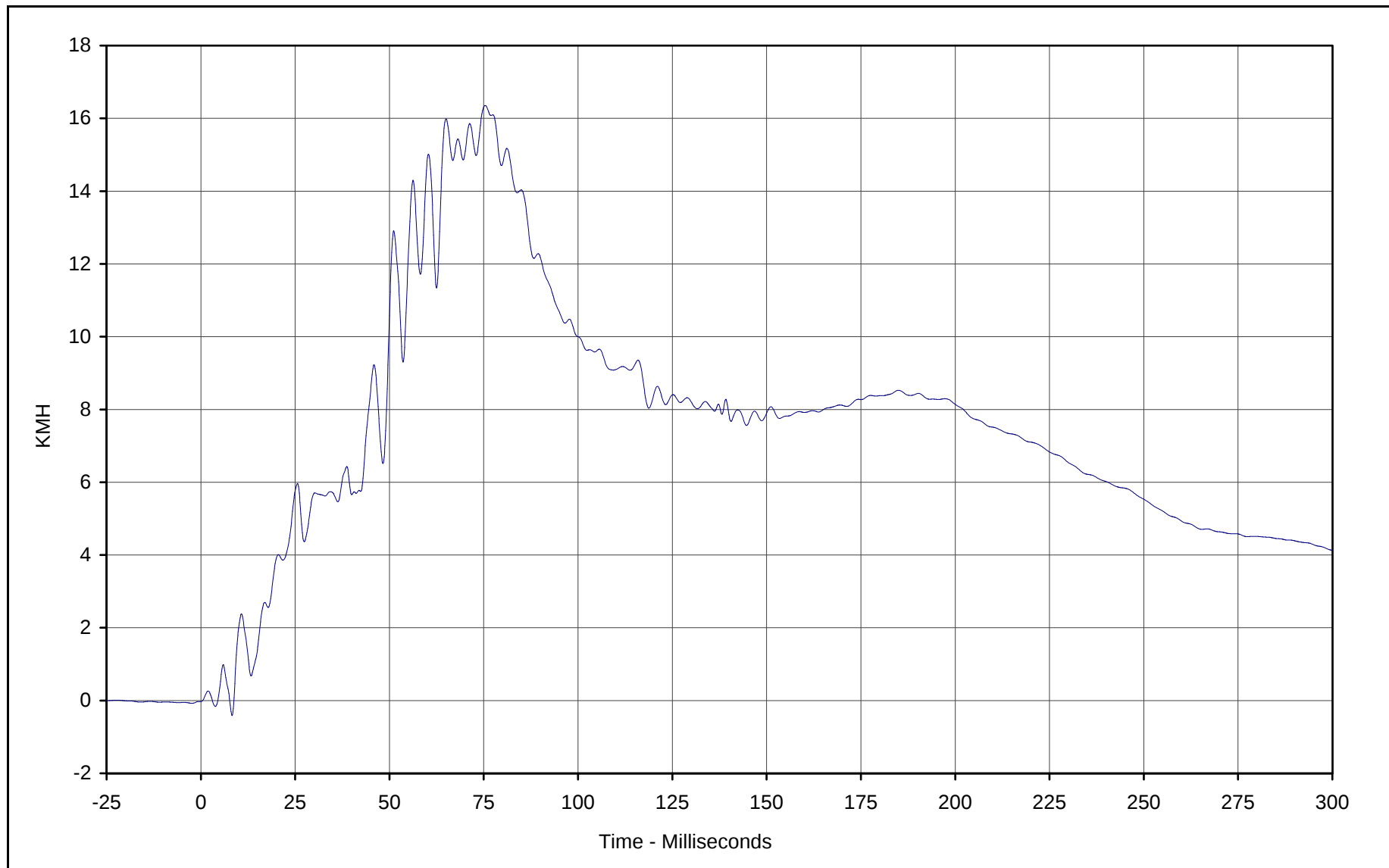




Curve Description: Vehicle Left Rear Z
Maximum Value: 32.2 at 49.7 Milliseconds
Minimum Value: -12.9 at 86.6 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-100

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV





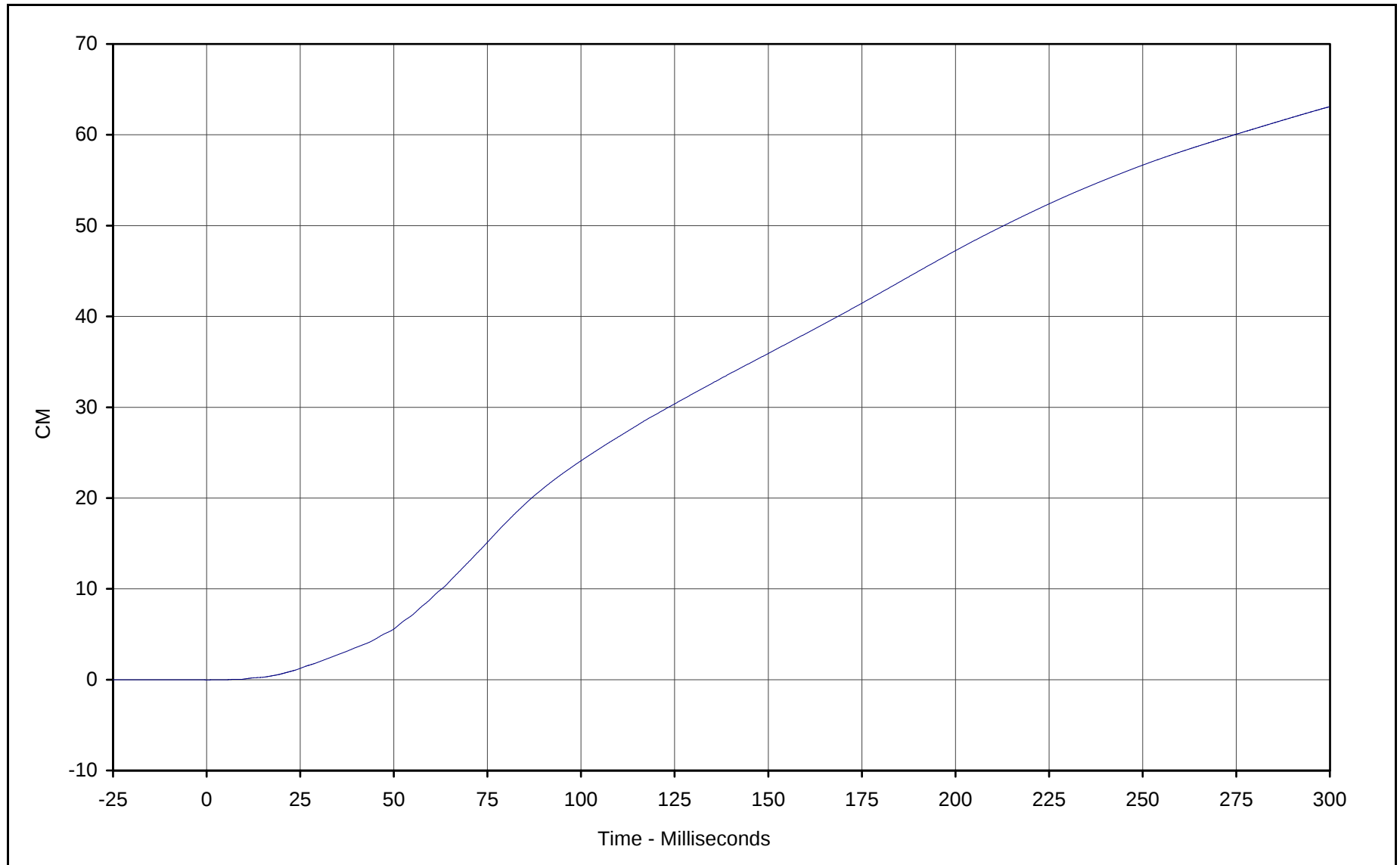
Curve Description: Vehicle Left Rear Z Velocity
Maximum Value: 16.4 at 75.4 Milliseconds
Minimum Value: -0.4 at 8.3 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-100

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



B-150



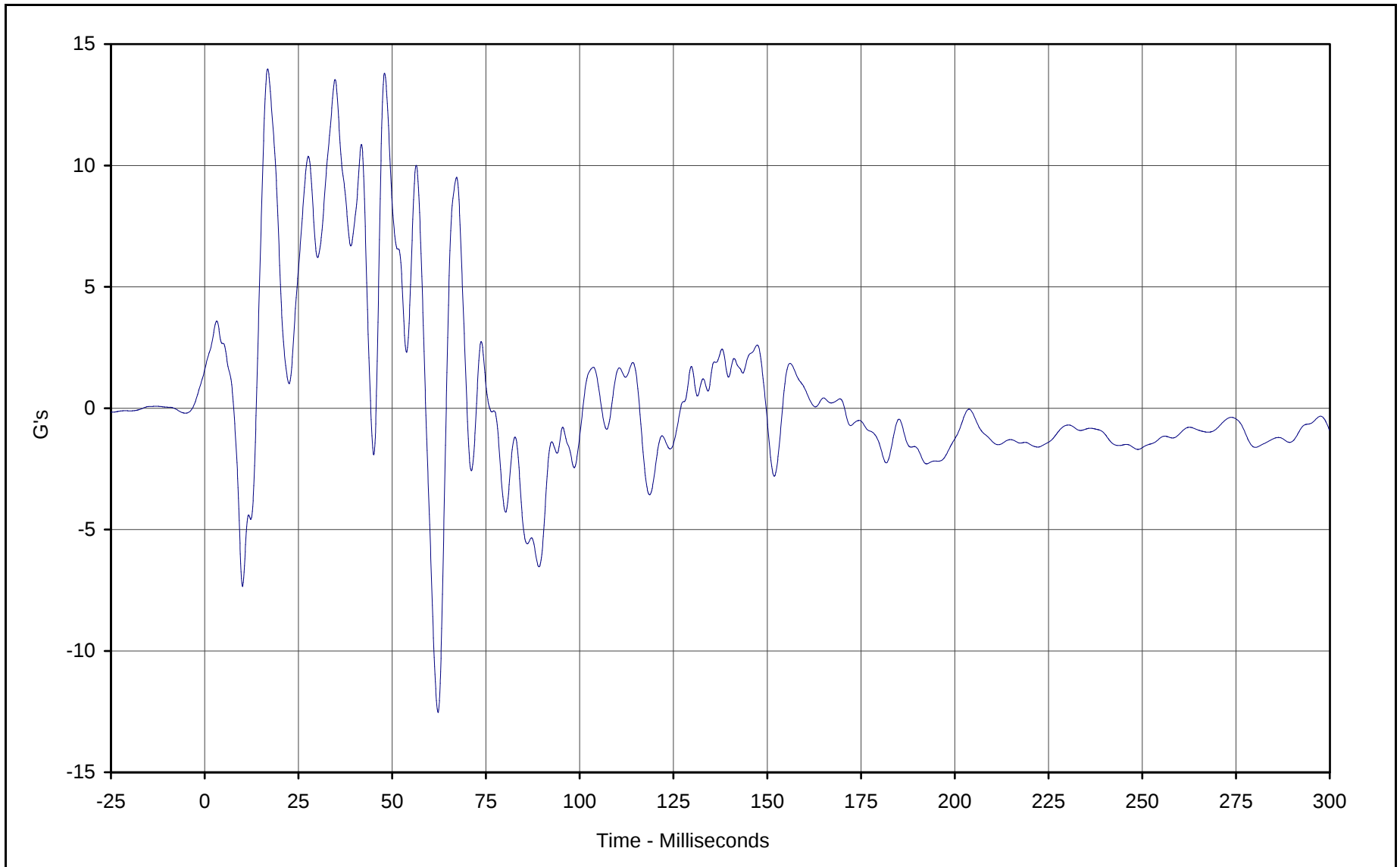
Curve Description: Vehicle Left Rear Z Displ.
Maximum Value: 63.1 at 299.9 Milliseconds
Minimum Value: 0.0 at 0.4 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-100

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-151



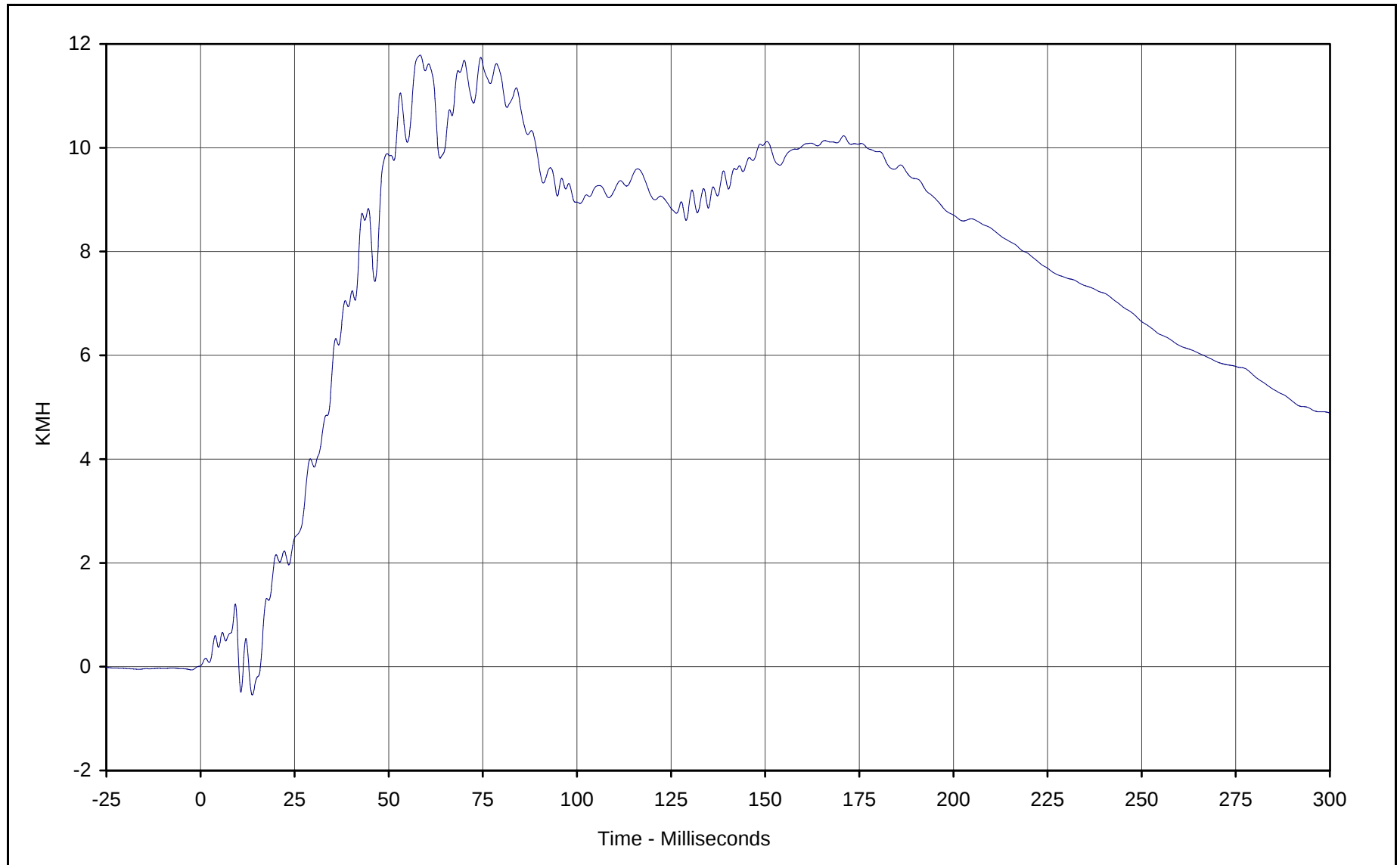
Curve Description: Vehicle Right Rear Z
Maximum Value: 14.0 at 16.8 Milliseconds
Minimum Value: -12.5 at 62.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-101

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

B-152

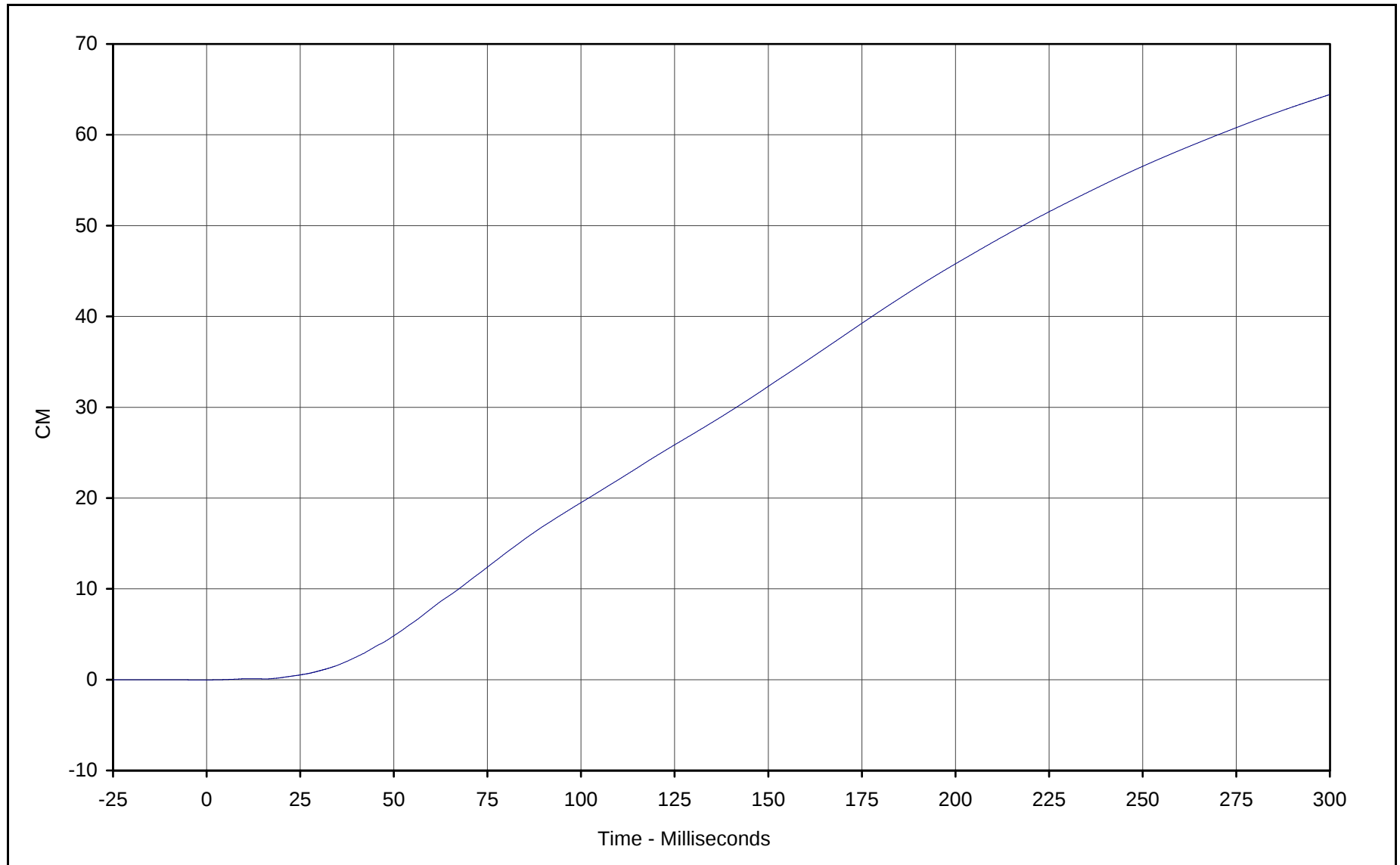


Curve Description: Vehicle Right Rear Z Velocity
Maximum Value: 11.8 at 58.4 Milliseconds
Minimum Value: -0.5 at 13.7 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN1-101

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



Curve Description: Vehicle Right Rear Z Displ.
Maximum Value: 64.4 at 299.9 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/13/01
Curve Number: IN2-101

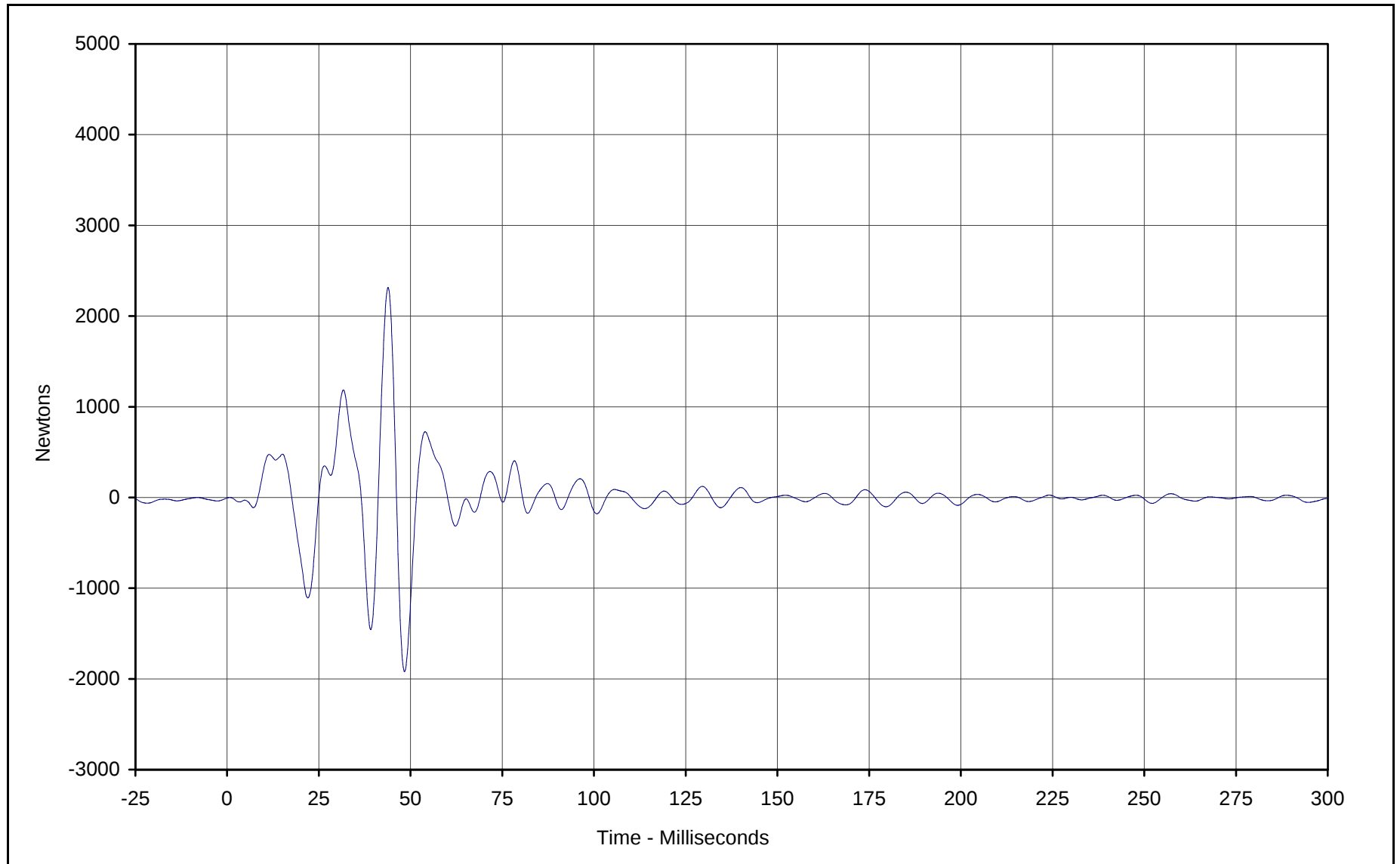
Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



APPENDIX C

LOAD CELL BARRIER DATA PLOTS

C-1



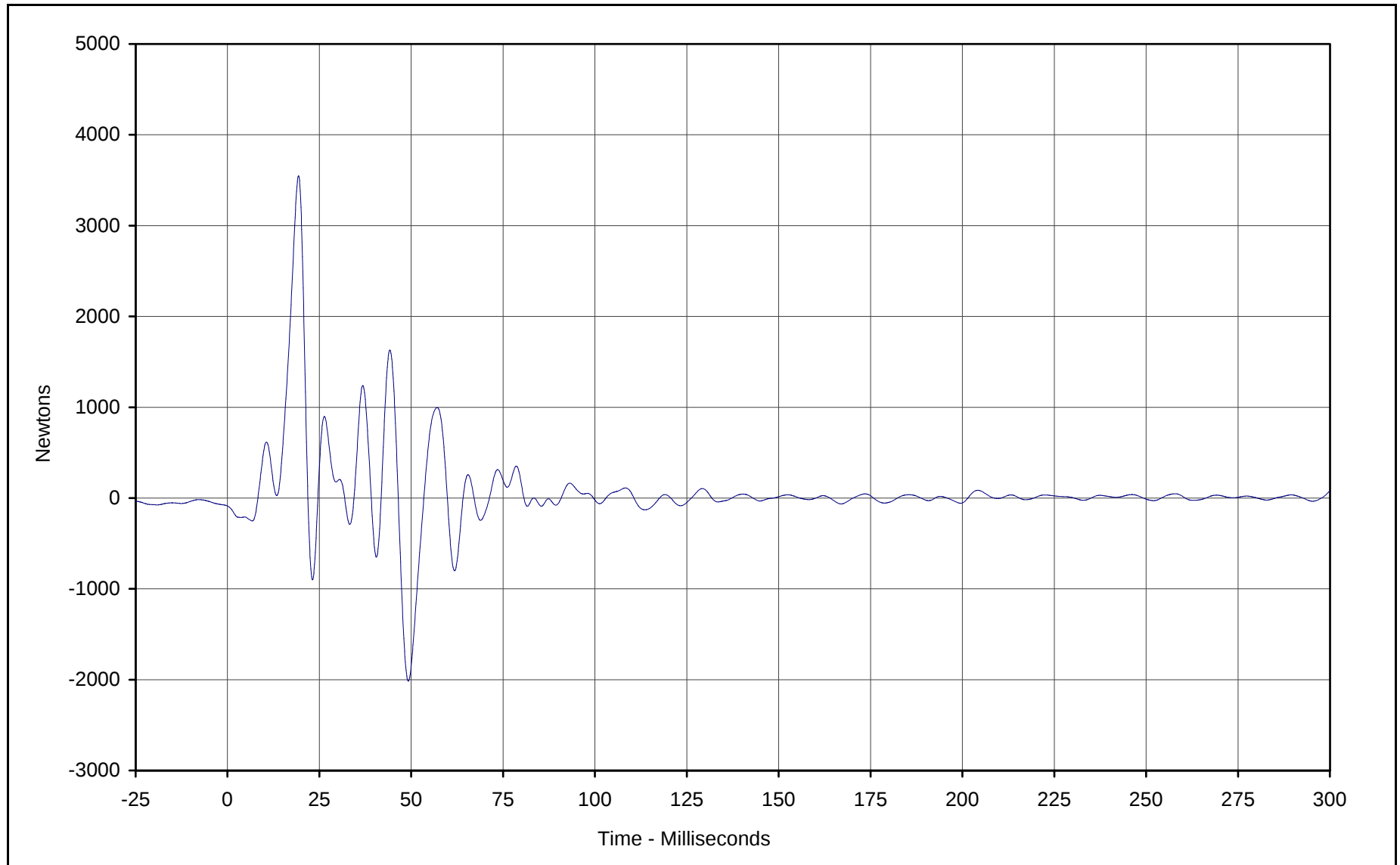
Curve Description:	Barrier Force A2		
Maximum Value:	2314.6	at	43.9 Milliseconds
Minimum Value:	-1919.8	at	48.4 Milliseconds
SAE Filter Class:	60		
Date of Test:	12/13/01		
Curve Number:	FIL-103		

Test Program:	2002 NHTSA 35mph NCAP	No.: M20105
Test Vehicle:	2002 Chevrolet Blazer LS ZR2 SUV	



KAR22001-02

C-2



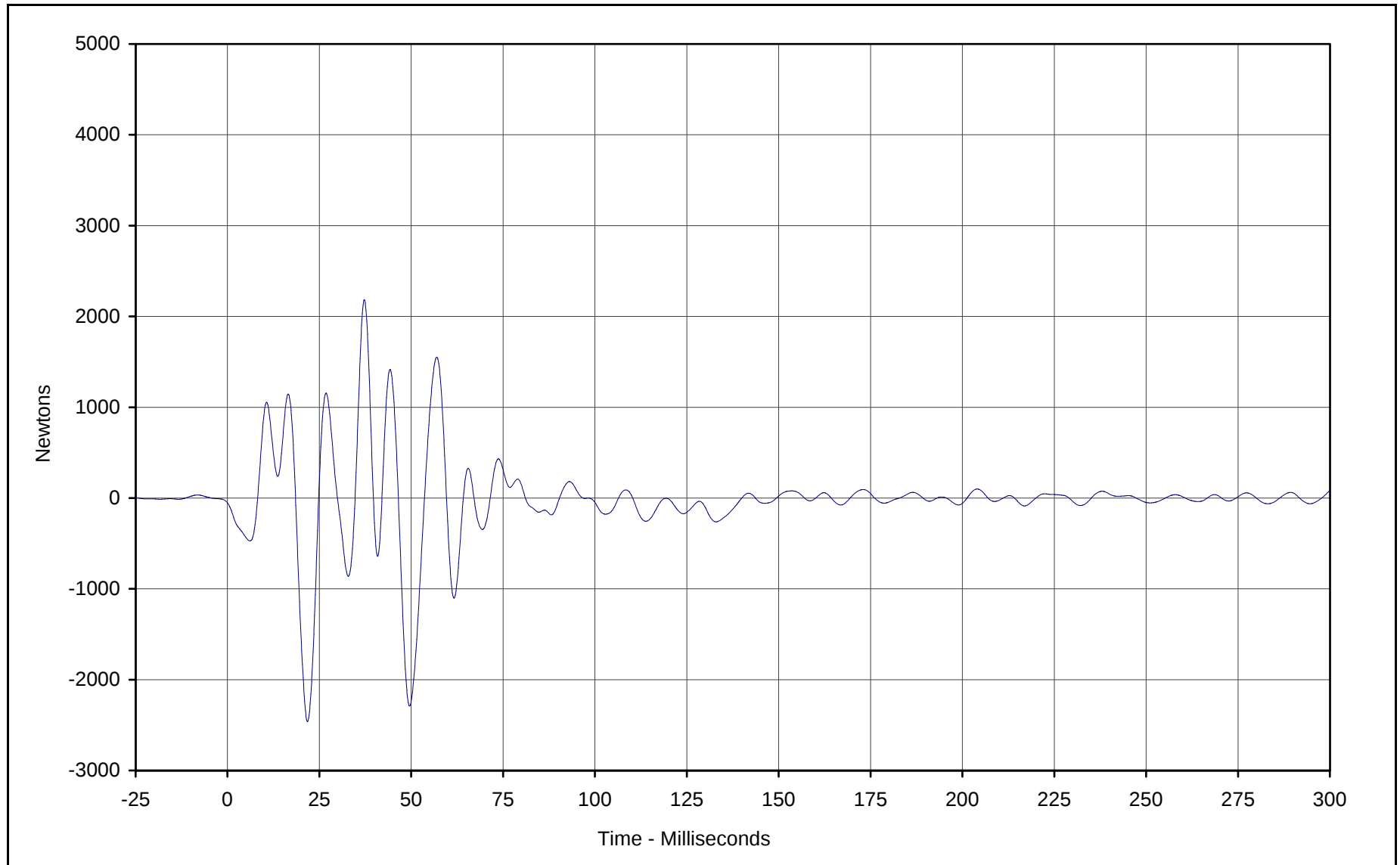
Curve Description: Barrier Force A3
Maximum Value: 3547.6 at 19.3 Milliseconds
Minimum Value: -2016.8 at 49.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-104

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-3



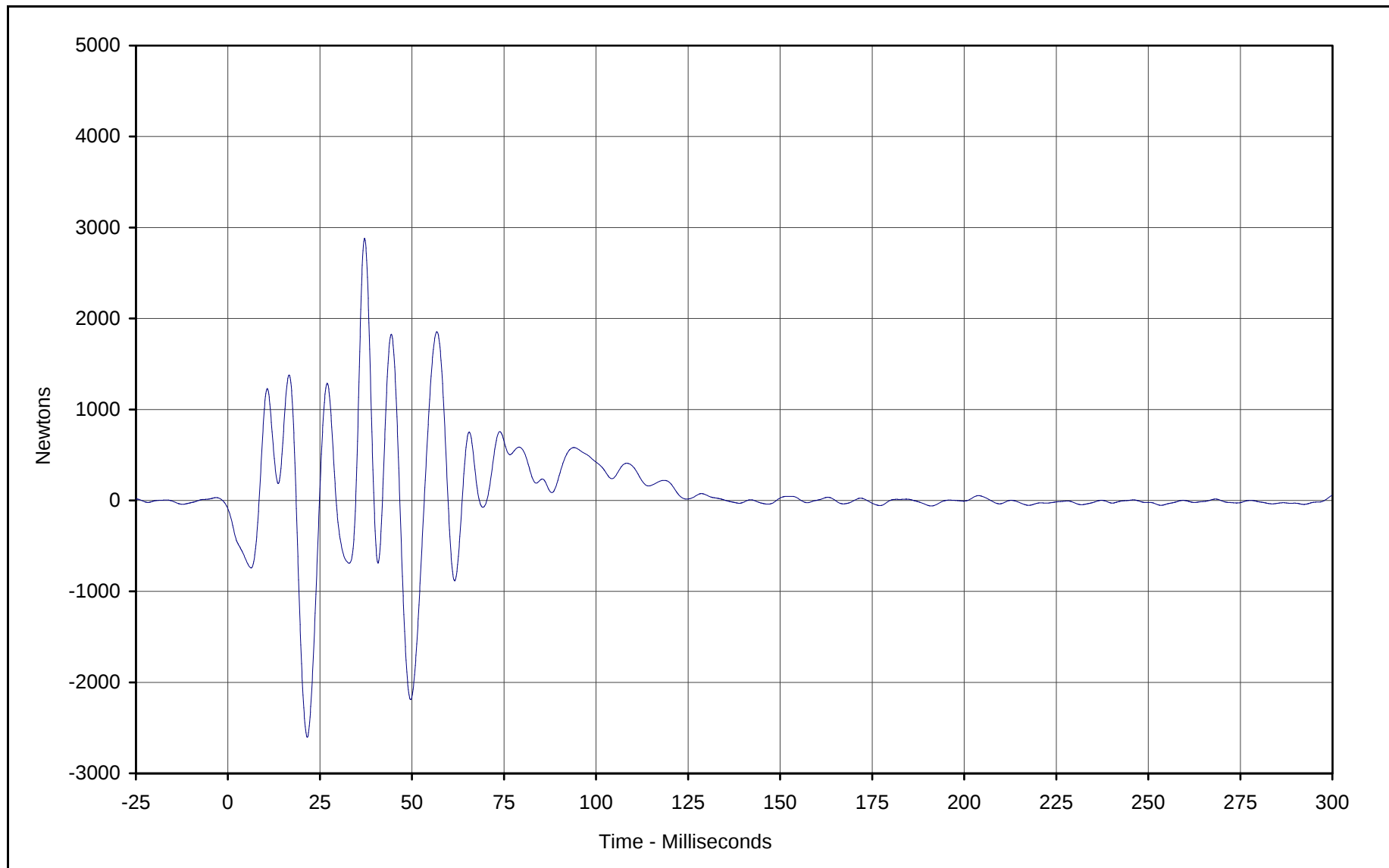
Curve Description: Barrier Force A4
Maximum Value: 2184.7 at 37.2 Milliseconds
Minimum Value: -2461.7 at 21.8 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-105

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-4



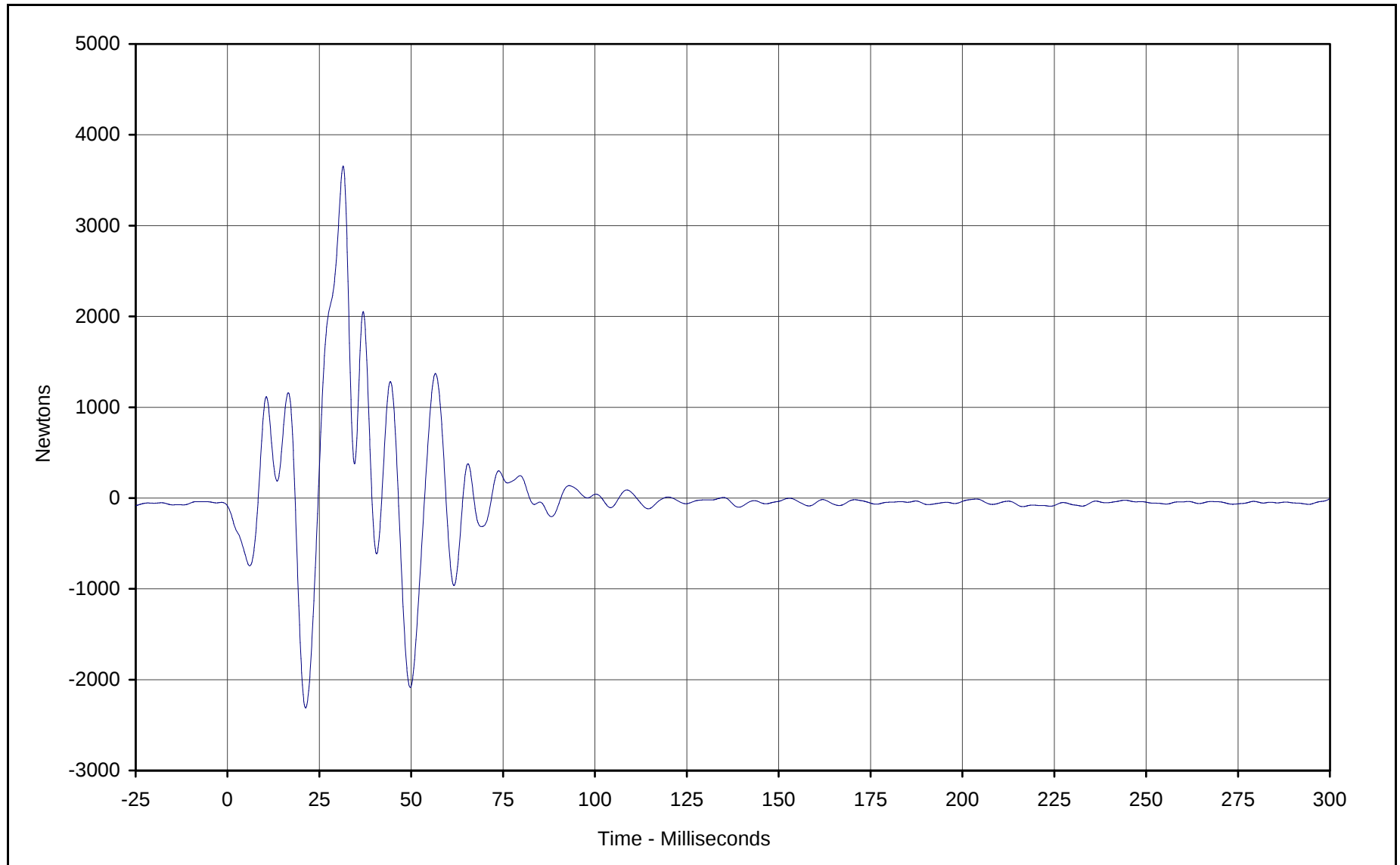
Curve Description: Barrier Force A5
Maximum Value: 2881.5 at 37.1 Milliseconds
Minimum Value: -2602.9 at 21.6 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-106

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-5



Curve Description: Barrier Force A6

Maximum Value: 3657.3 at 31.5 Milliseconds

Minimum Value: -2311.7 at 21.2 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-107

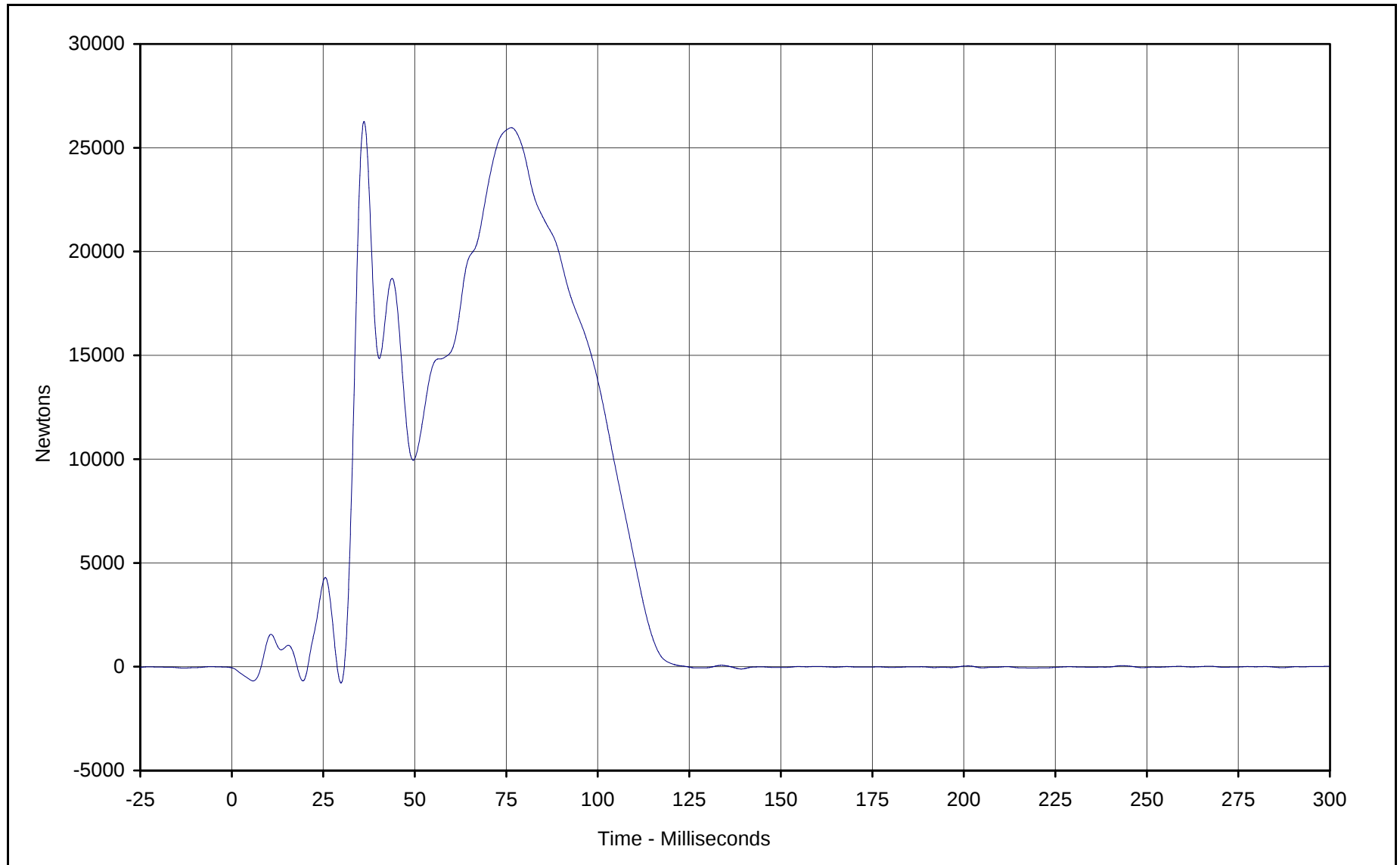
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-6



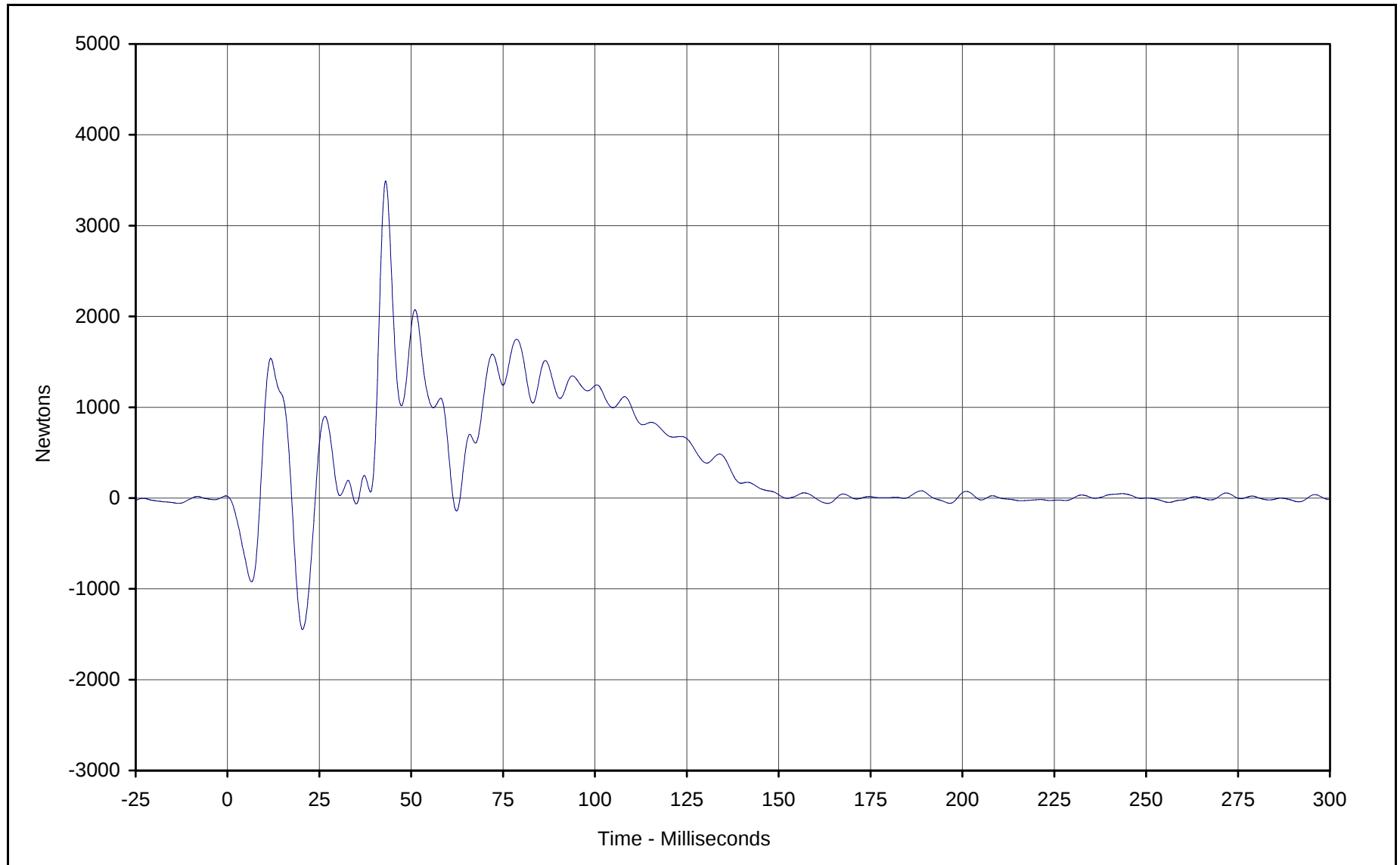
Curve Description: Barrier Force A7
Maximum Value: 26274.6 at 36.1 Milliseconds
Minimum Value: -781.8 at 29.8 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-108

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-7



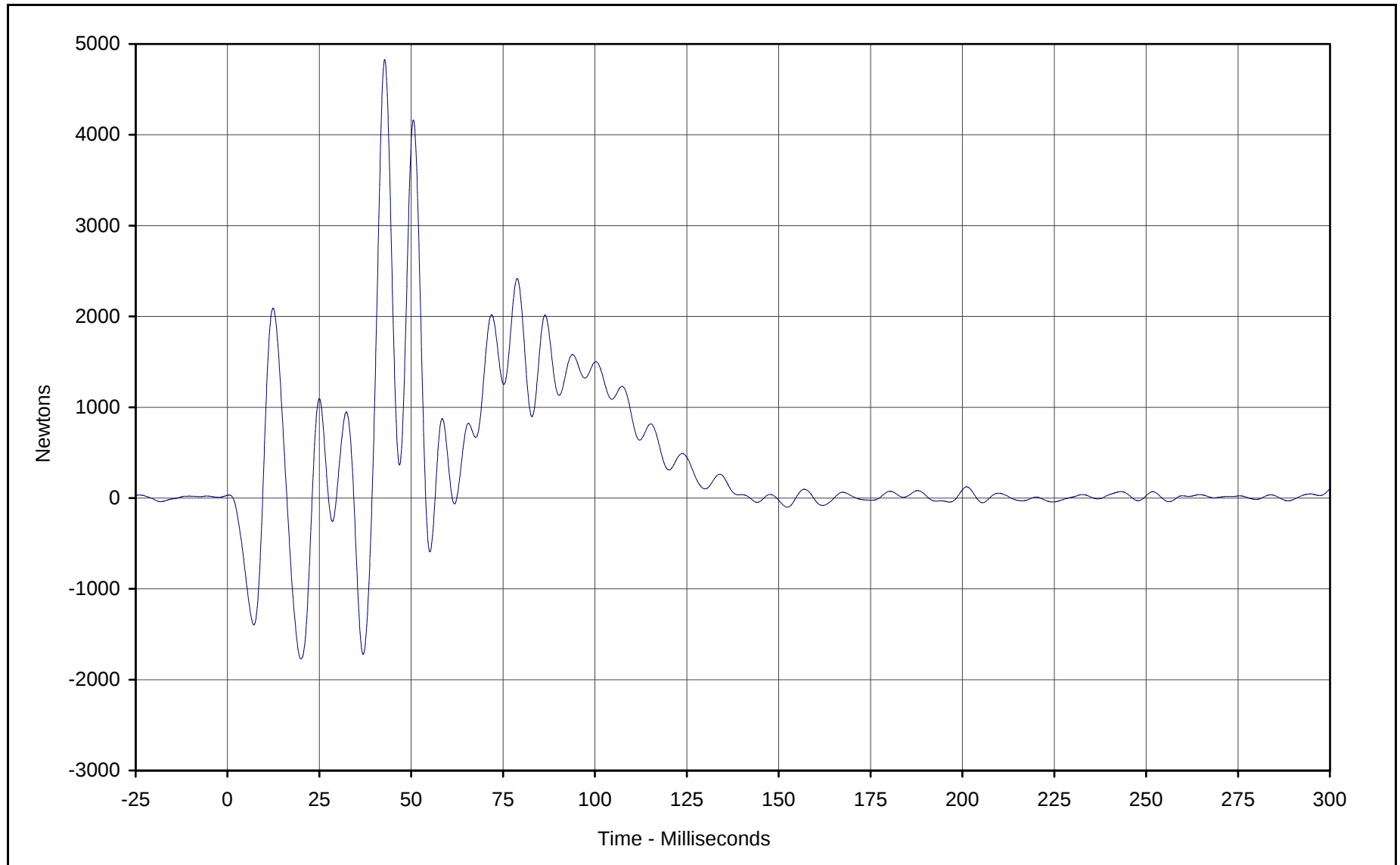
Curve Description: Barrier Force A8
Maximum Value: 3491.3 at 43.0 Milliseconds
Minimum Value: -1447.6 at 20.4 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-109

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-8



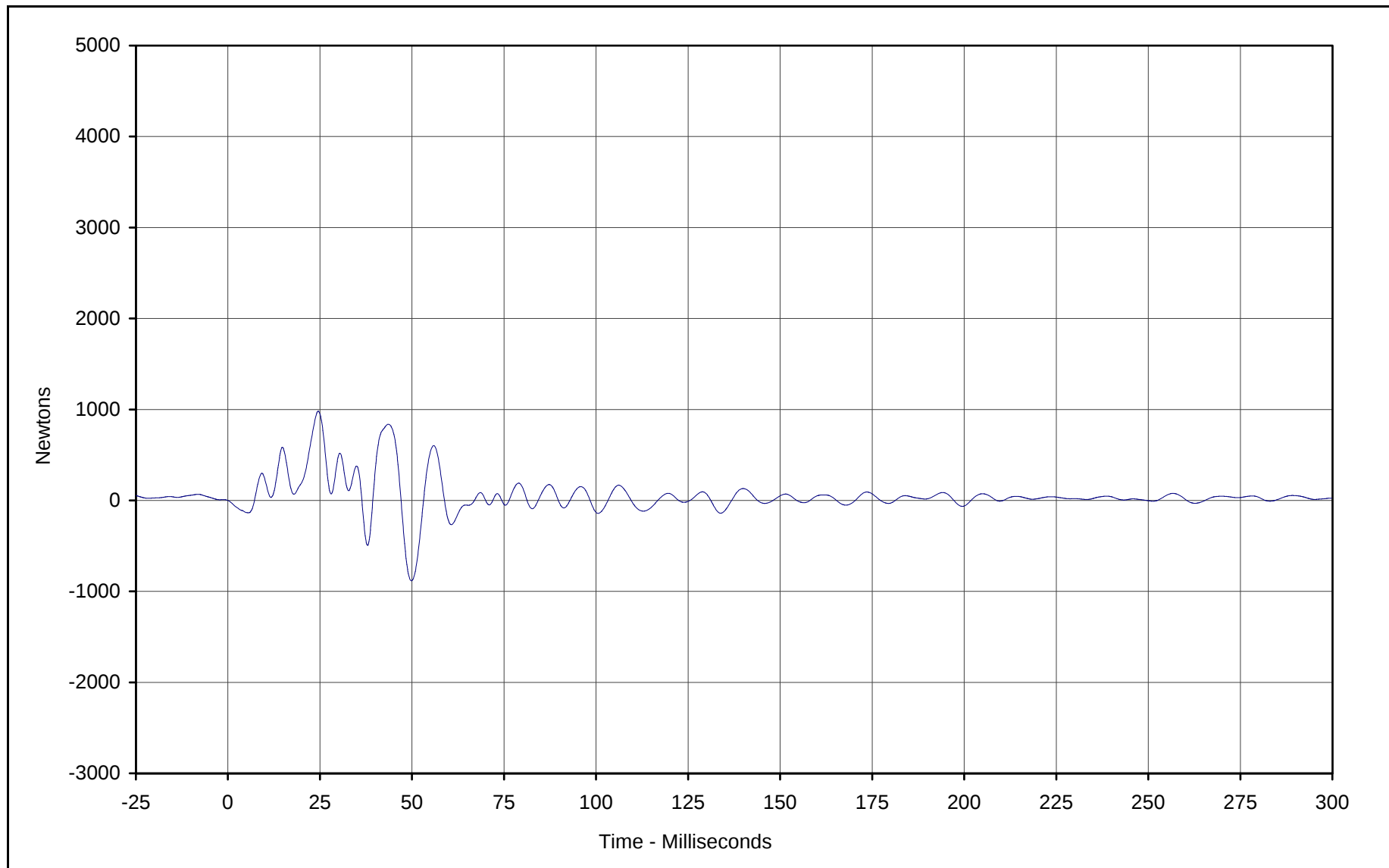
Curve Description: Barrier Force A9
Maximum Value: 4828.0 at 42.8 Milliseconds
Minimum Value: -1771.5 at 20.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-110

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-9



Curve Description: Barrier Force B2

Maximum Value: 980.4 at 24.5 Milliseconds

Minimum Value: -883.1 at 49.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

Curve Number: FIL-112

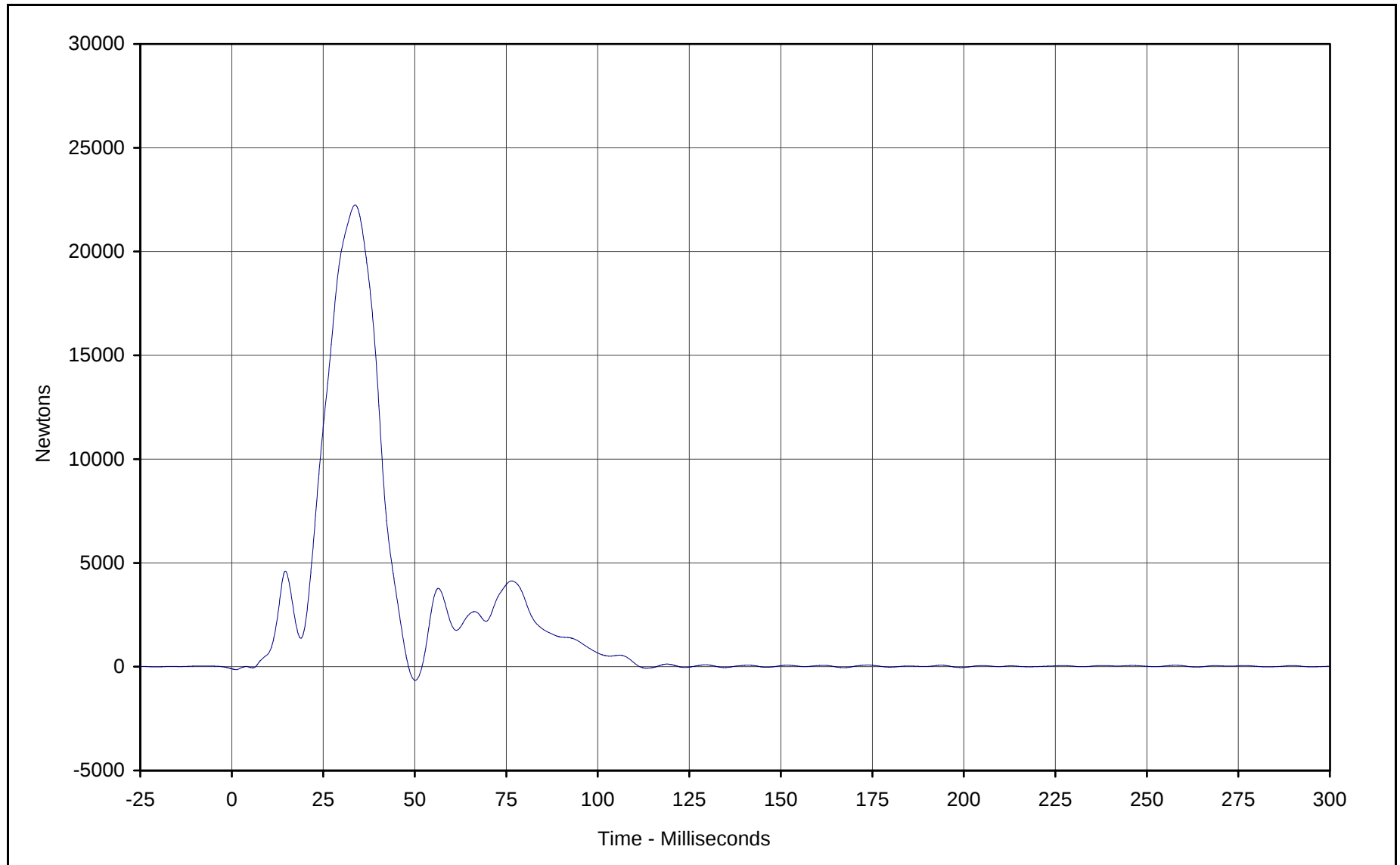
Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-10



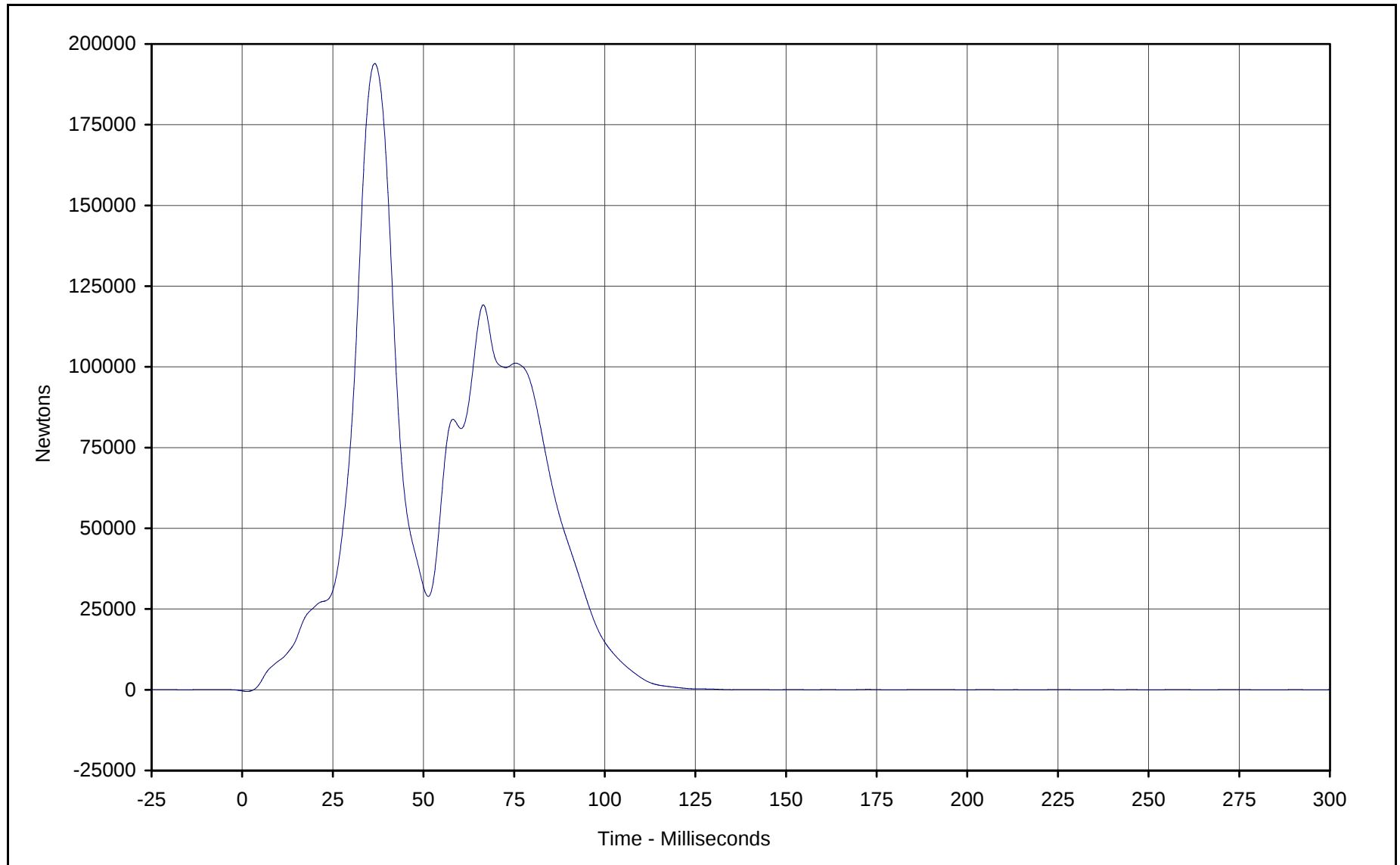
Curve Description: Barrier Force B3
Maximum Value: 22248.7 at 33.7 Milliseconds
Minimum Value: -655.8 at 50.1 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-113

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-11



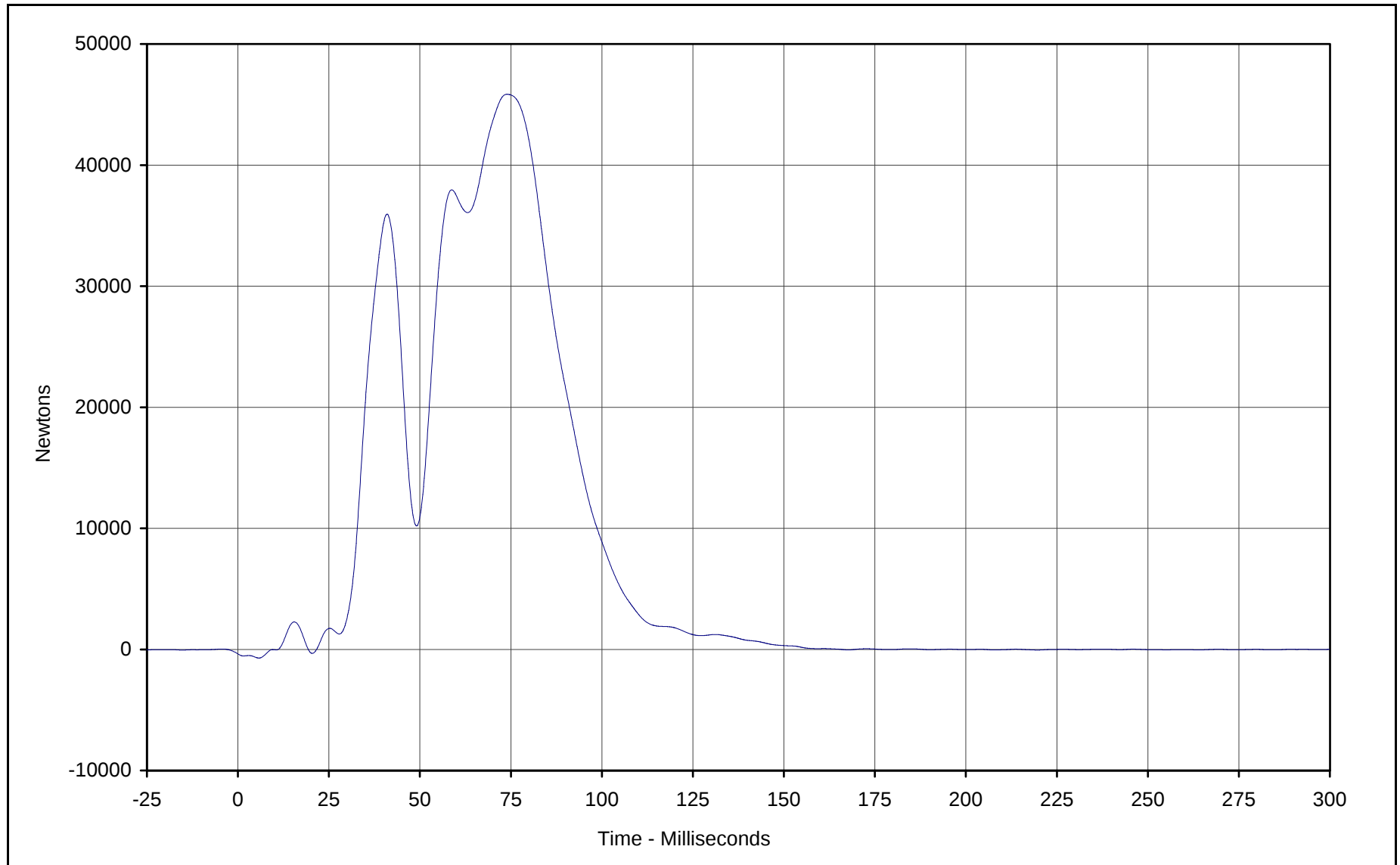
Curve Description: Barrier Force B4
Maximum Value: 193971.9 at 36.6 Milliseconds
Minimum Value: -526.6 at 1.3 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-114

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-12

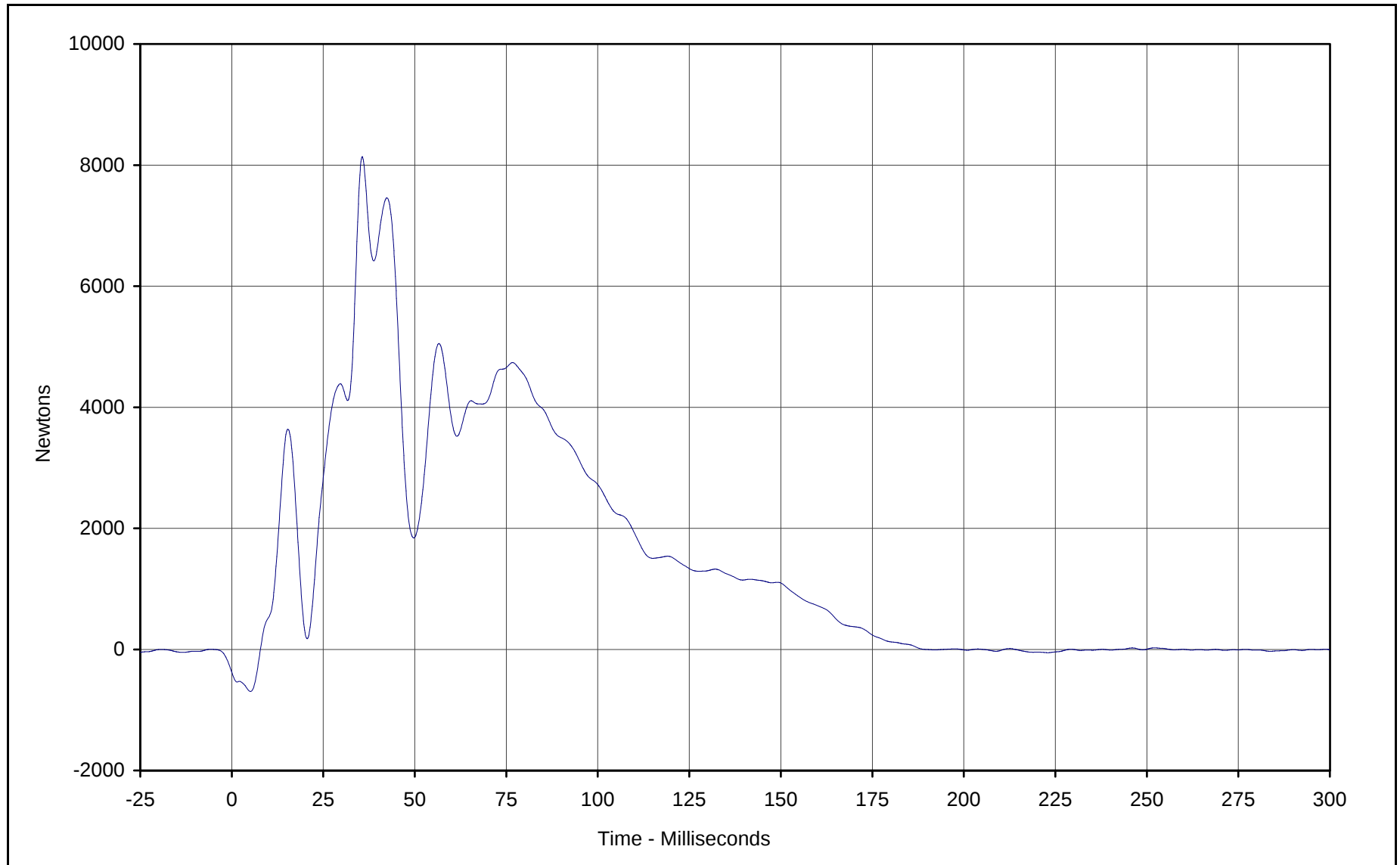


Curve Description: Barrier Force B5
Maximum Value: 45847.4 at 74.0 Milliseconds
Minimum Value: -716.8 at 5.8 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-115

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

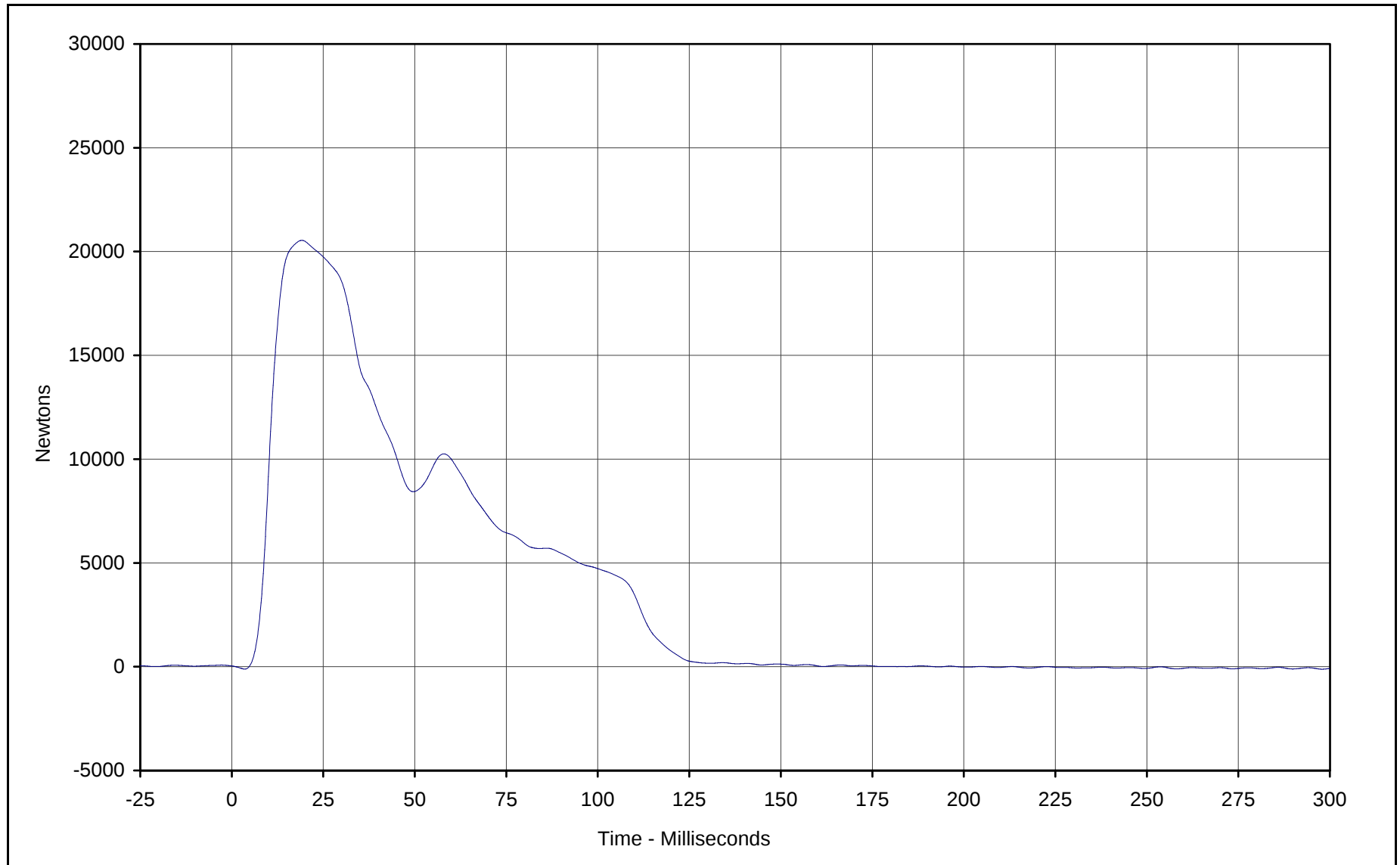


Curve Description: Barrier Force B6
Maximum Value: 8138.6 at 35.6 Milliseconds
Minimum Value: -694.0 at 5.1 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-116

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



C-14



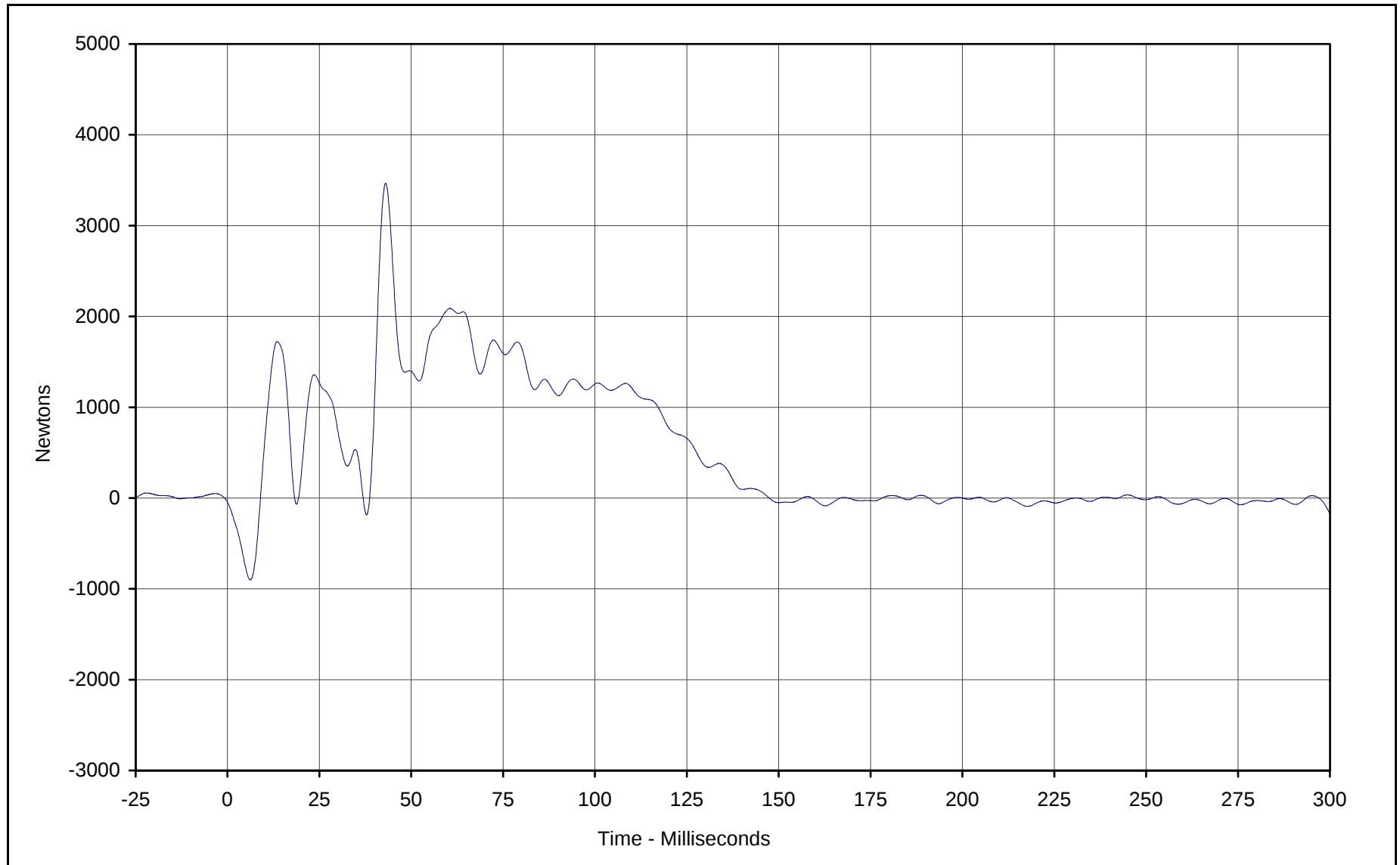
Curve Description: Barrier Force B7
Maximum Value: 20541.4 at 19.1 Milliseconds
Minimum Value: -119.9 at 297.9 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-117

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-15



Curve Description: Barrier Force B8

Maximum Value: 3466.8 at 43.0 Milliseconds

Minimum Value: -900.7 at 6.2 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

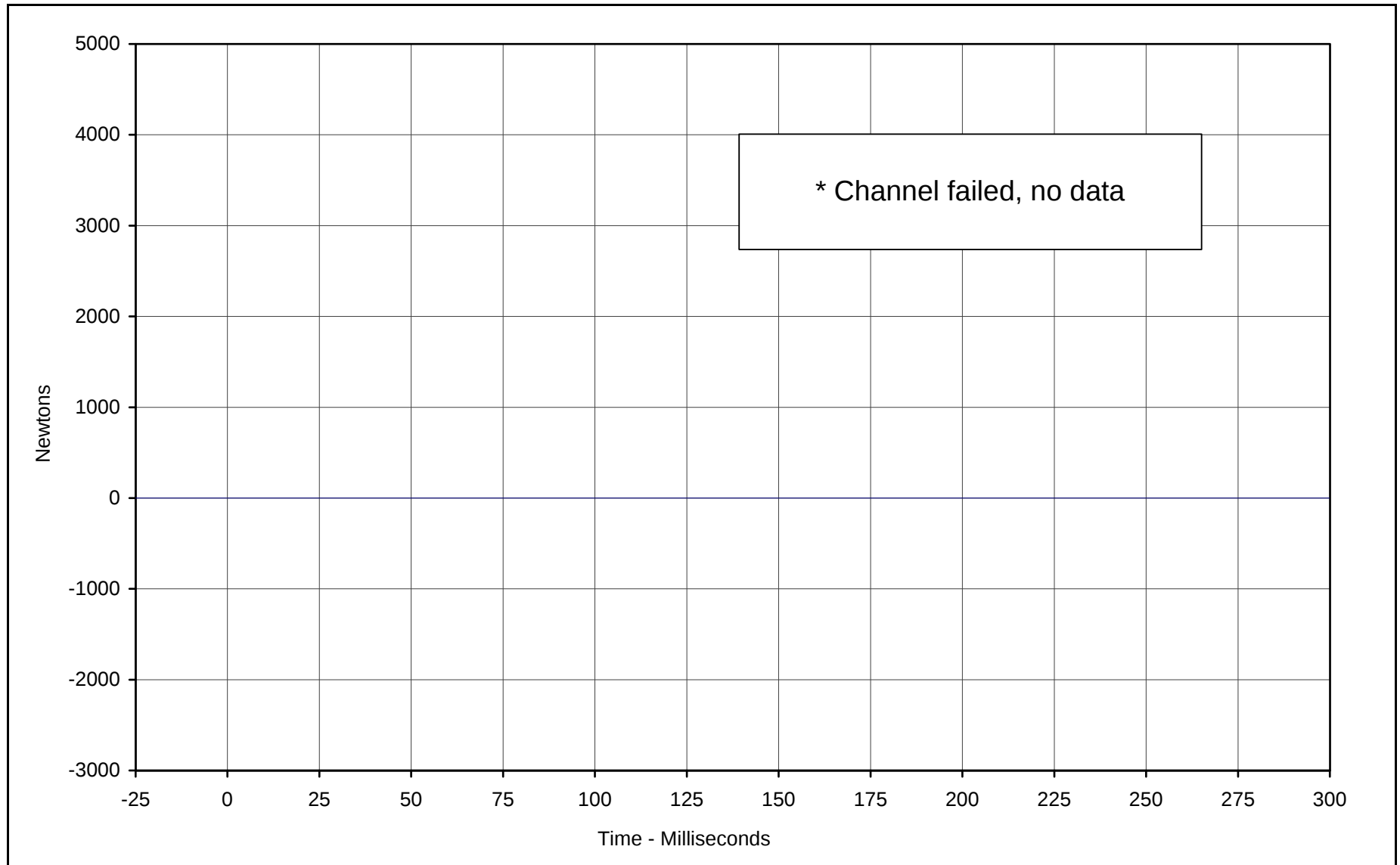
Curve Number: FIL-118

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02



Curve Description: Barrier Force B9 *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/13/01

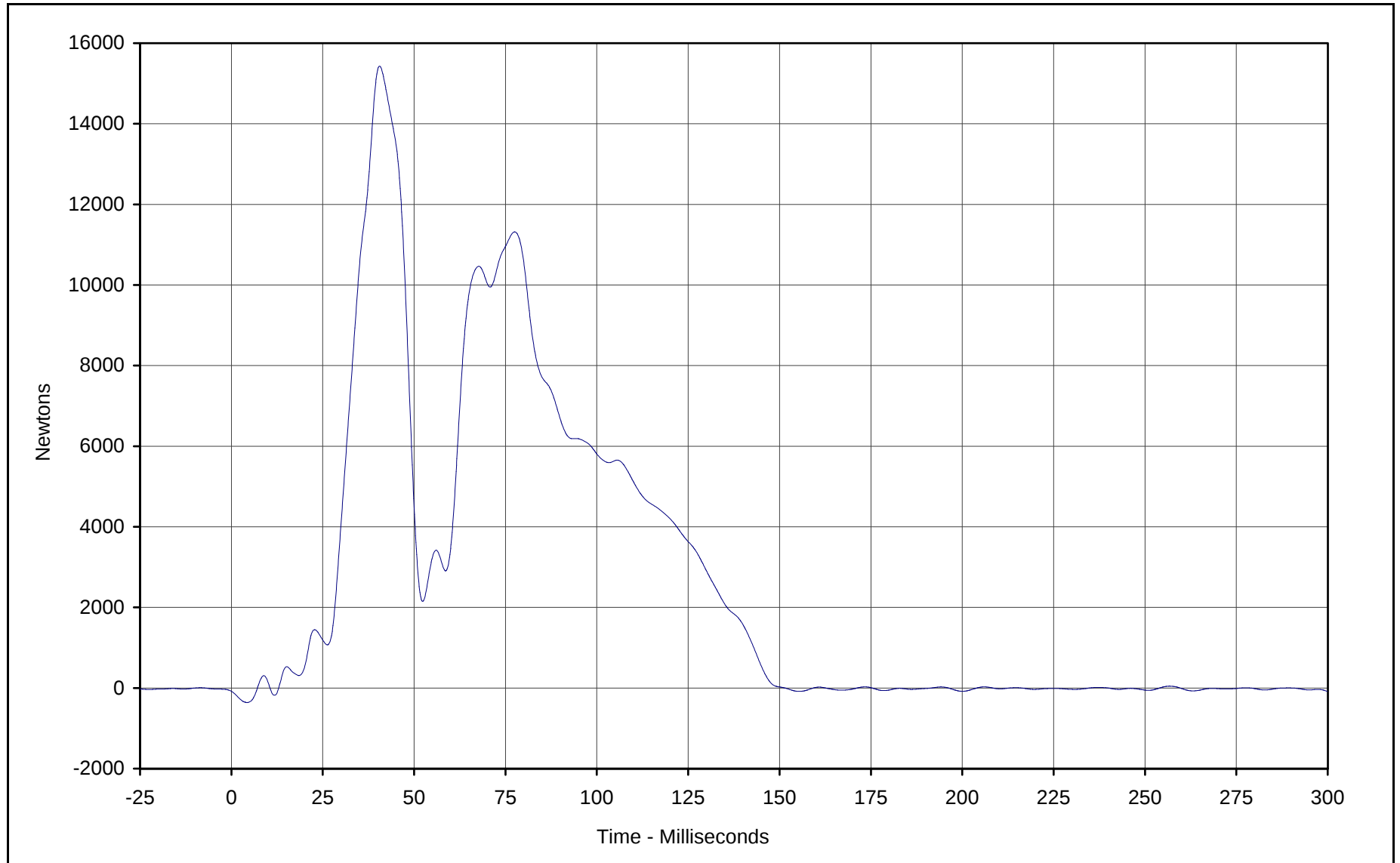
Curve Number: FIL-119

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

* Channel failed, no data

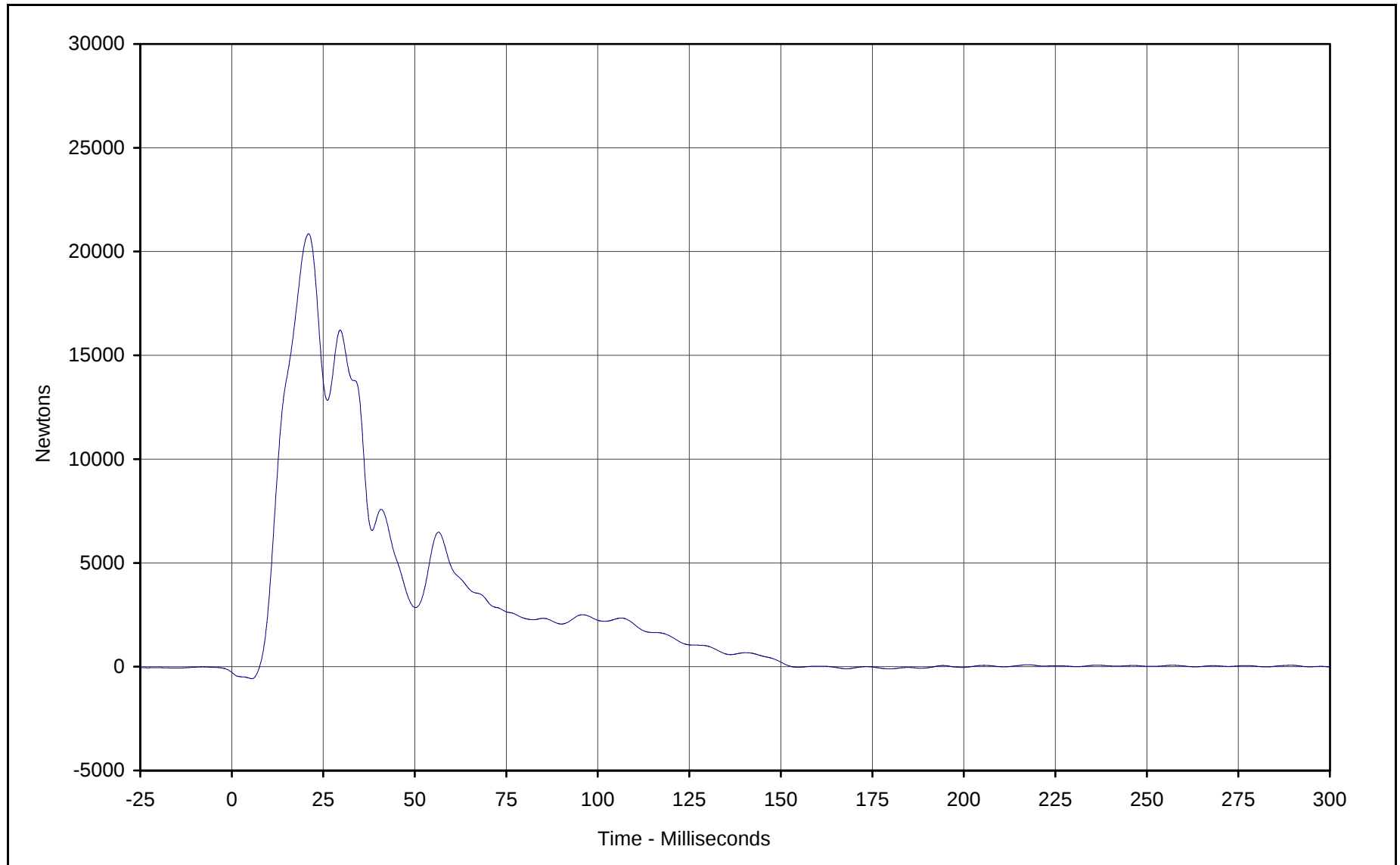




Curve Description: Barrier Force C2
Maximum Value: 15432.1 at 40.5 Milliseconds
Minimum Value: -361.7 at 4.3 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-121

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

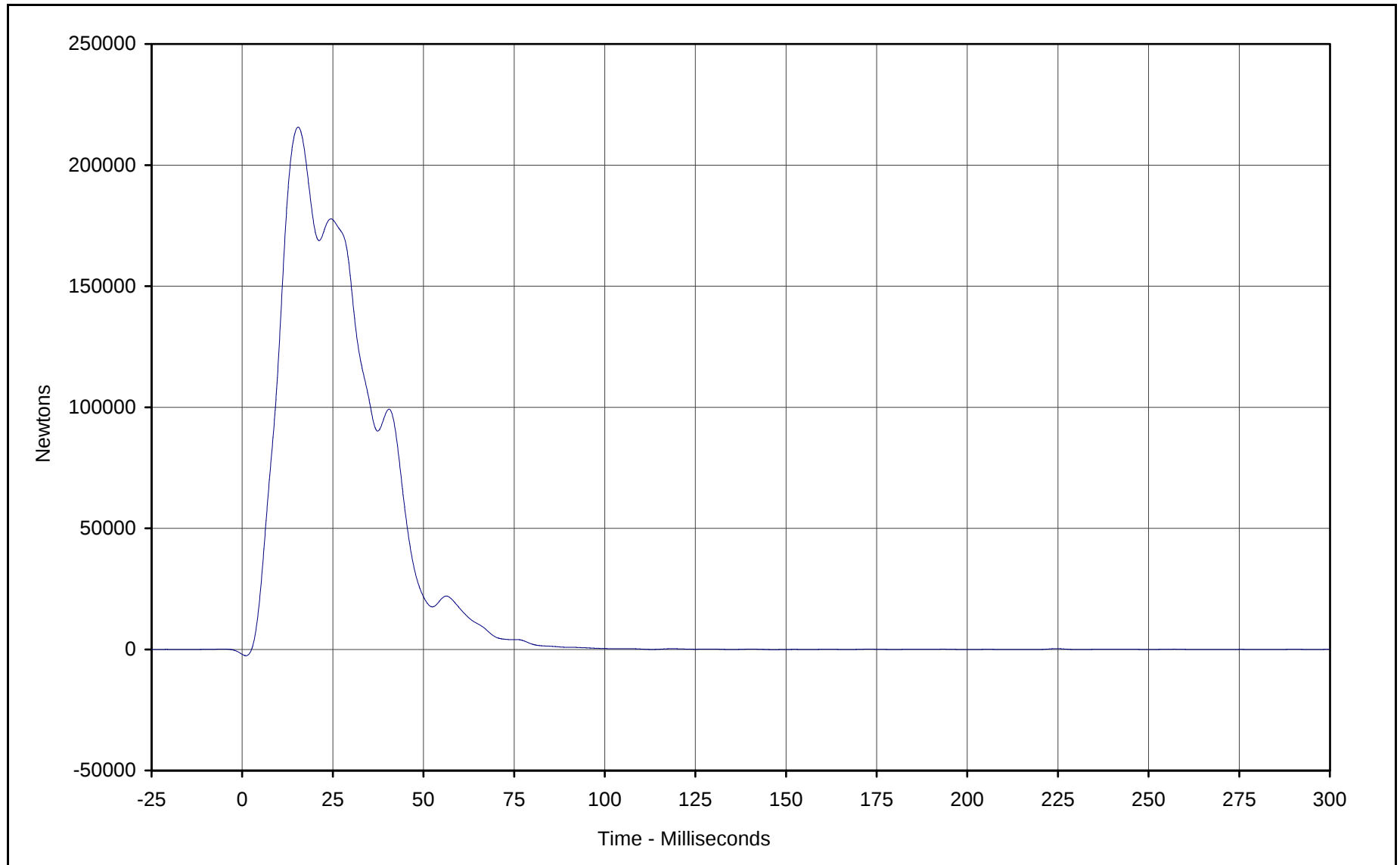




Curve Description: Barrier Force C3
Maximum Value: 20858.4 at 21.0 Milliseconds
Minimum Value: -575.8 at 5.5 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-122

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



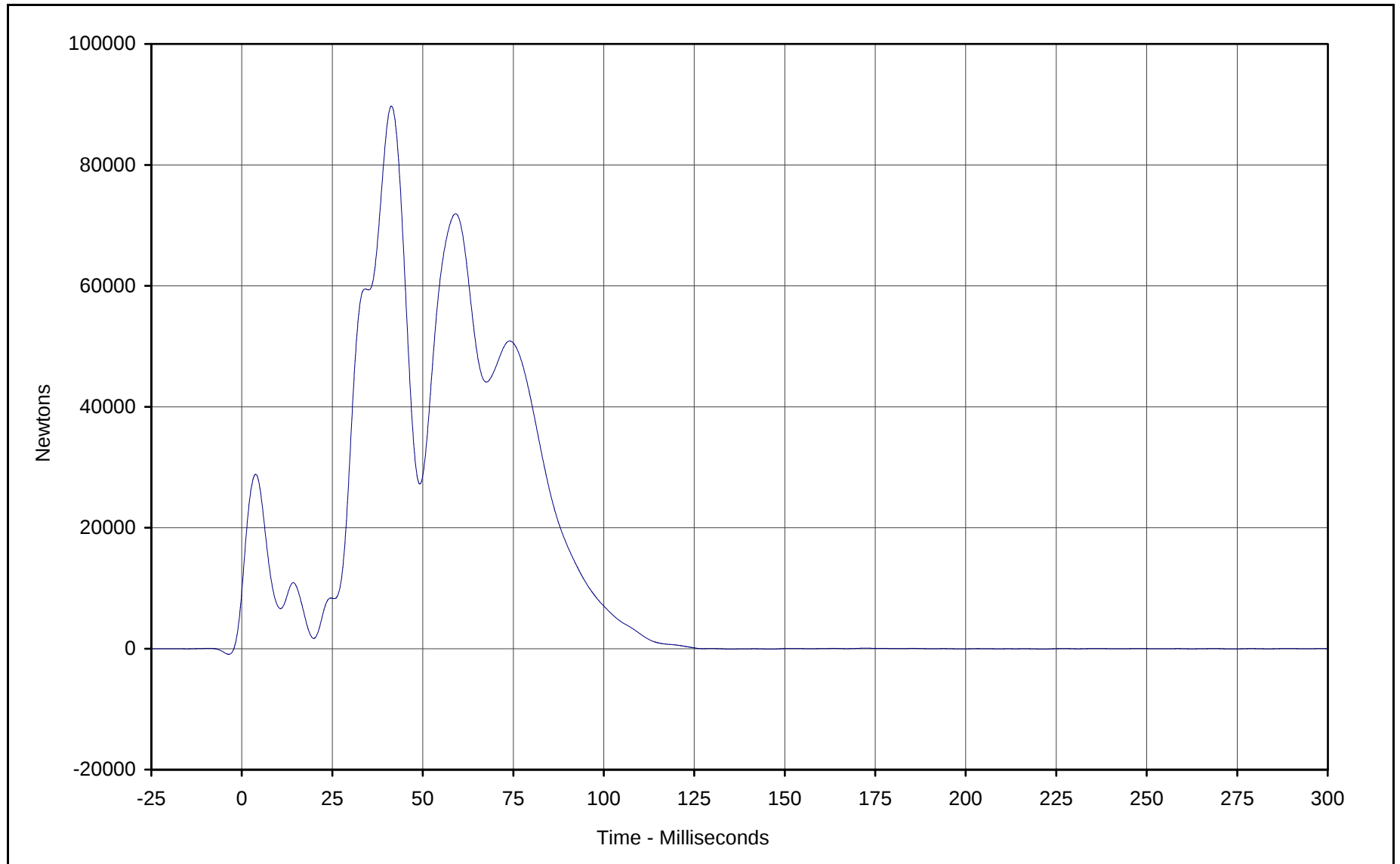


Curve Description: Barrier Force C4
Maximum Value: 215684.5 at 15.4 Milliseconds
Minimum Value: -2604.7 at 1.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-123

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



C-20



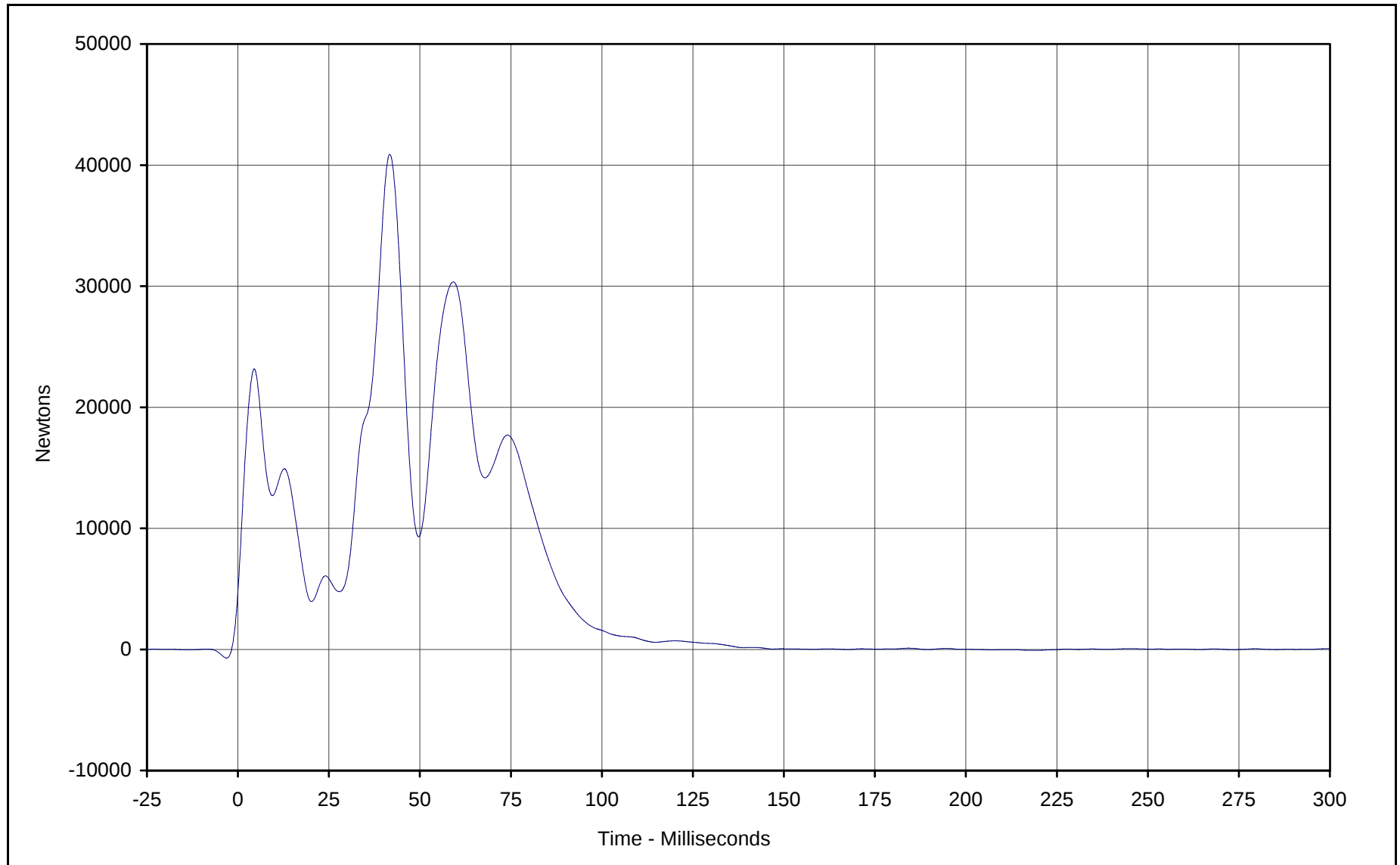
Curve Description: Barrier Force C5
Maximum Value: 89726.2 at 41.3 Milliseconds
Minimum Value: -91.0 at 135.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-124

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-21



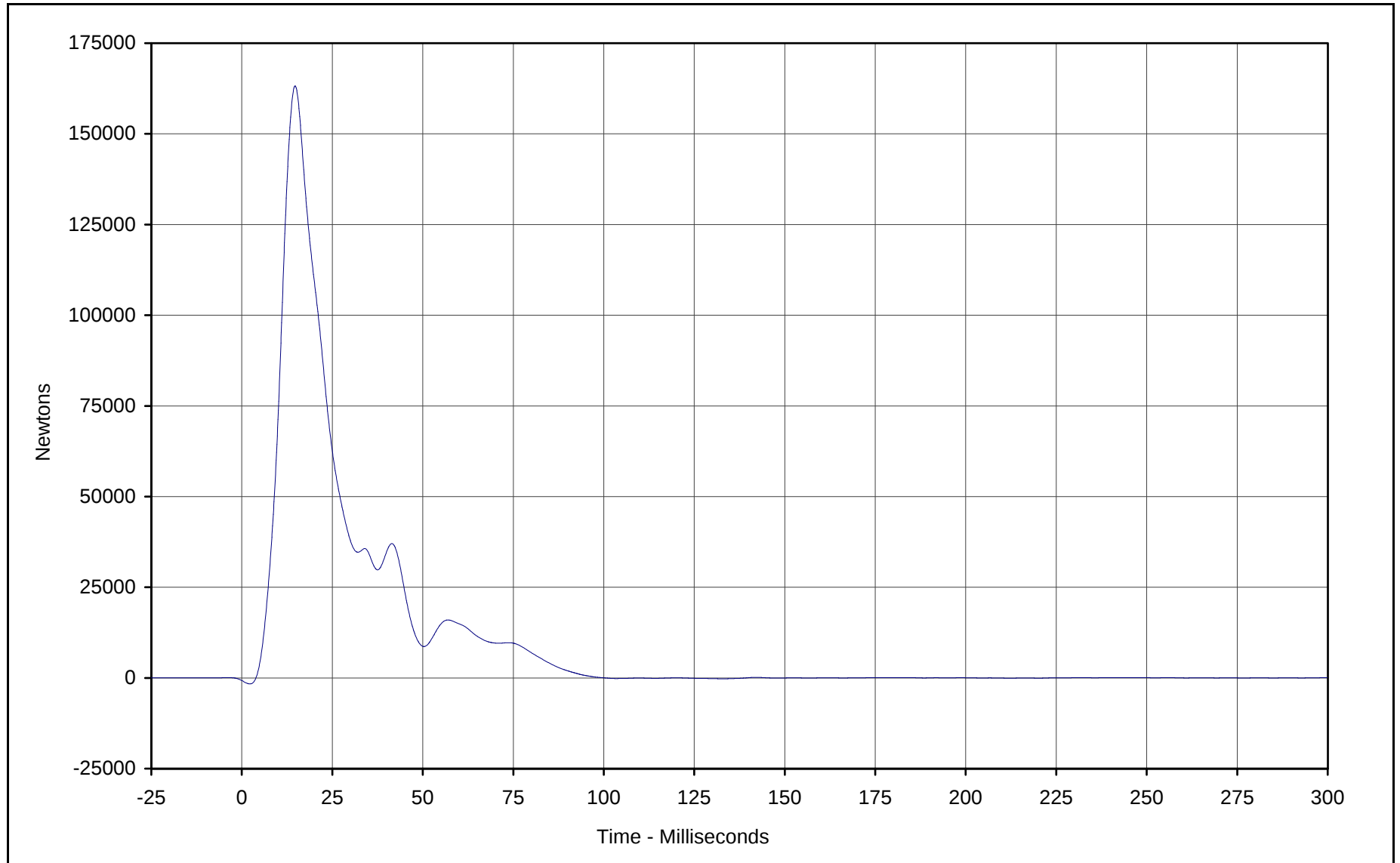
Curve Description: Barrier Force C6
Maximum Value: 40890.8 at 41.7 Milliseconds
Minimum Value: -82.3 at 219.5 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-125

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-22



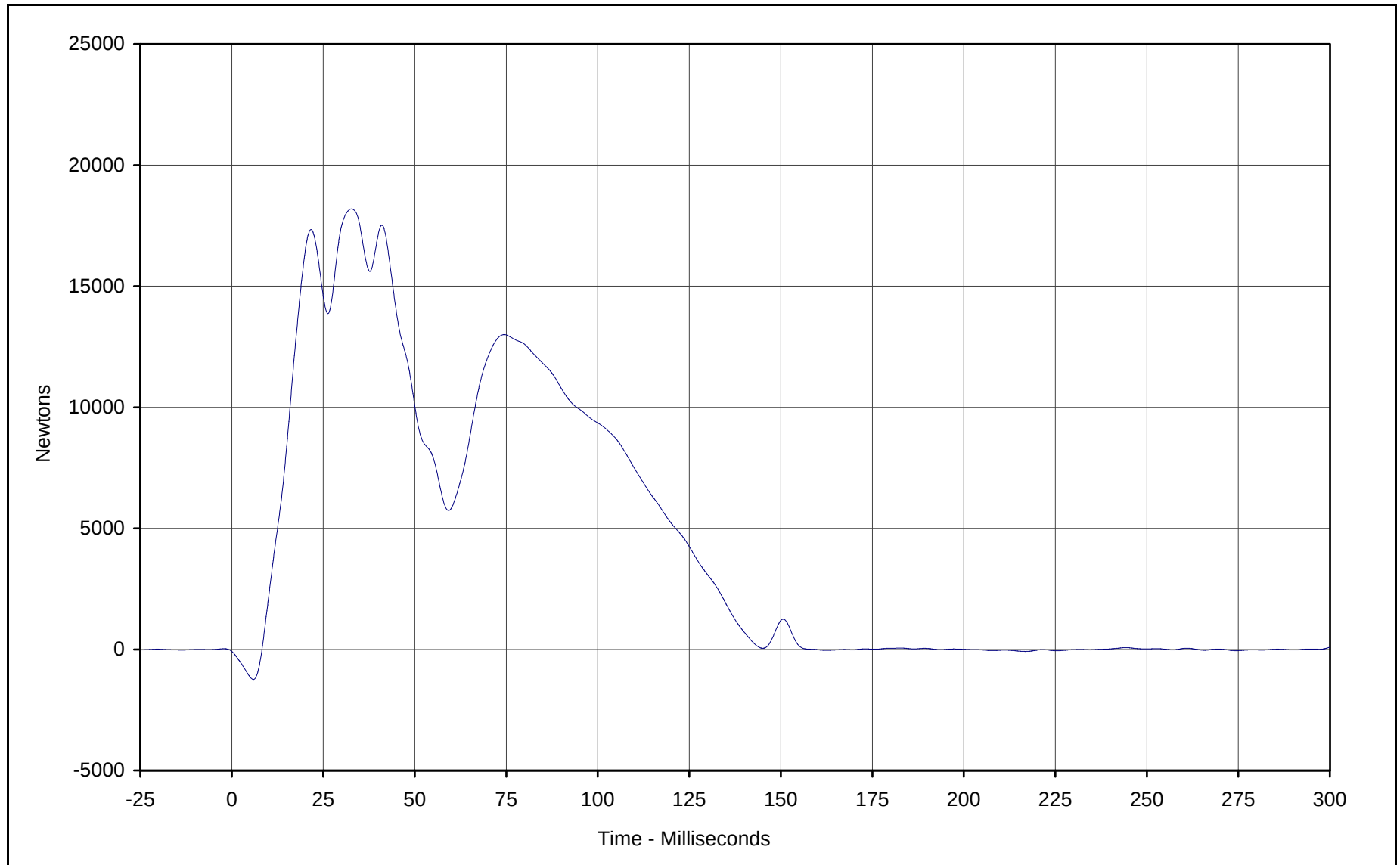
Curve Description: Barrier Force C7
Maximum Value: 163221.7 at 14.7 Milliseconds
Minimum Value: -1654.0 at 2.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-126

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-23



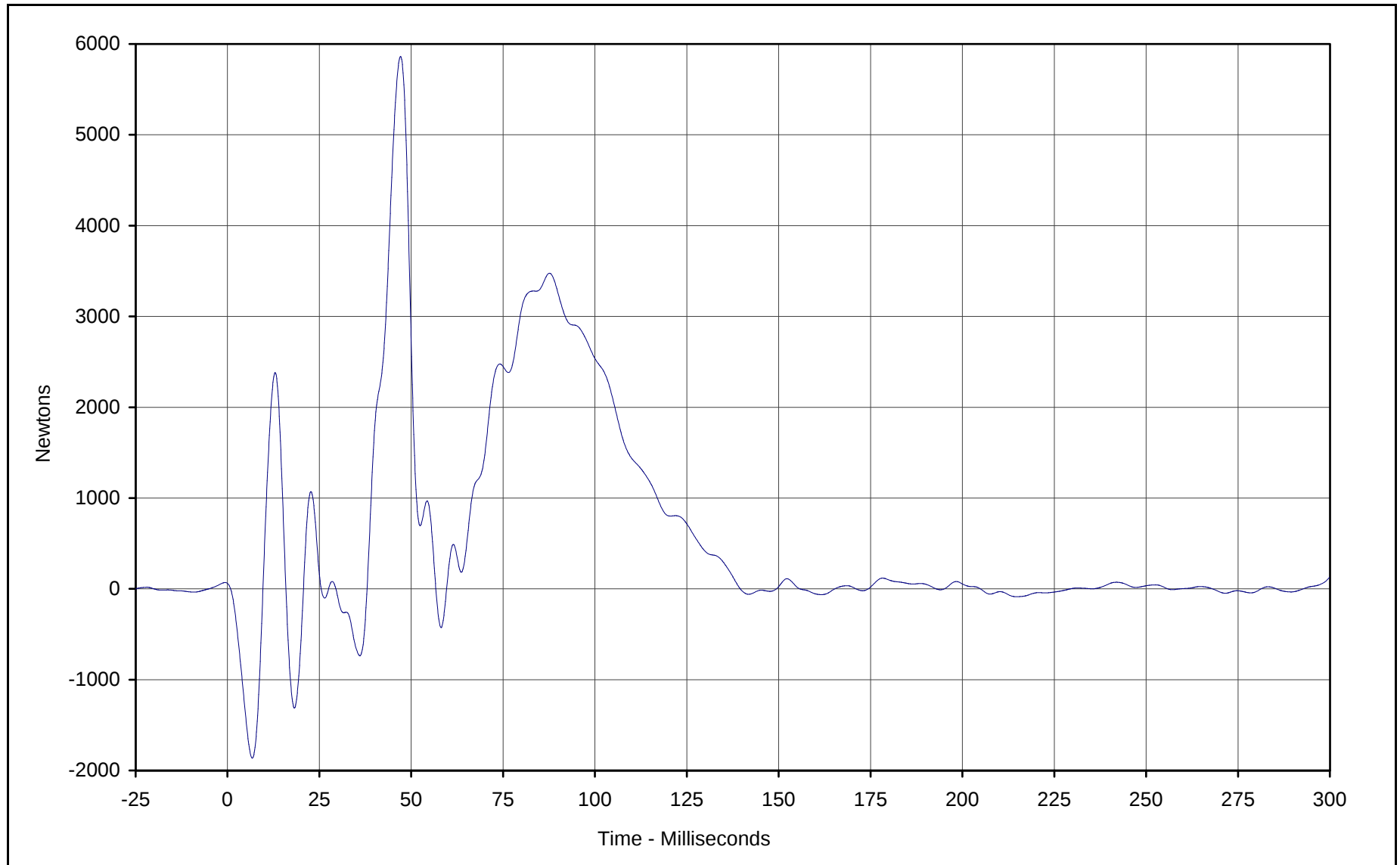
Curve Description: Barrier Force C8
Maximum Value: 18189.0 at 32.7 Milliseconds
Minimum Value: -1240.9 at 5.9 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-127

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-24



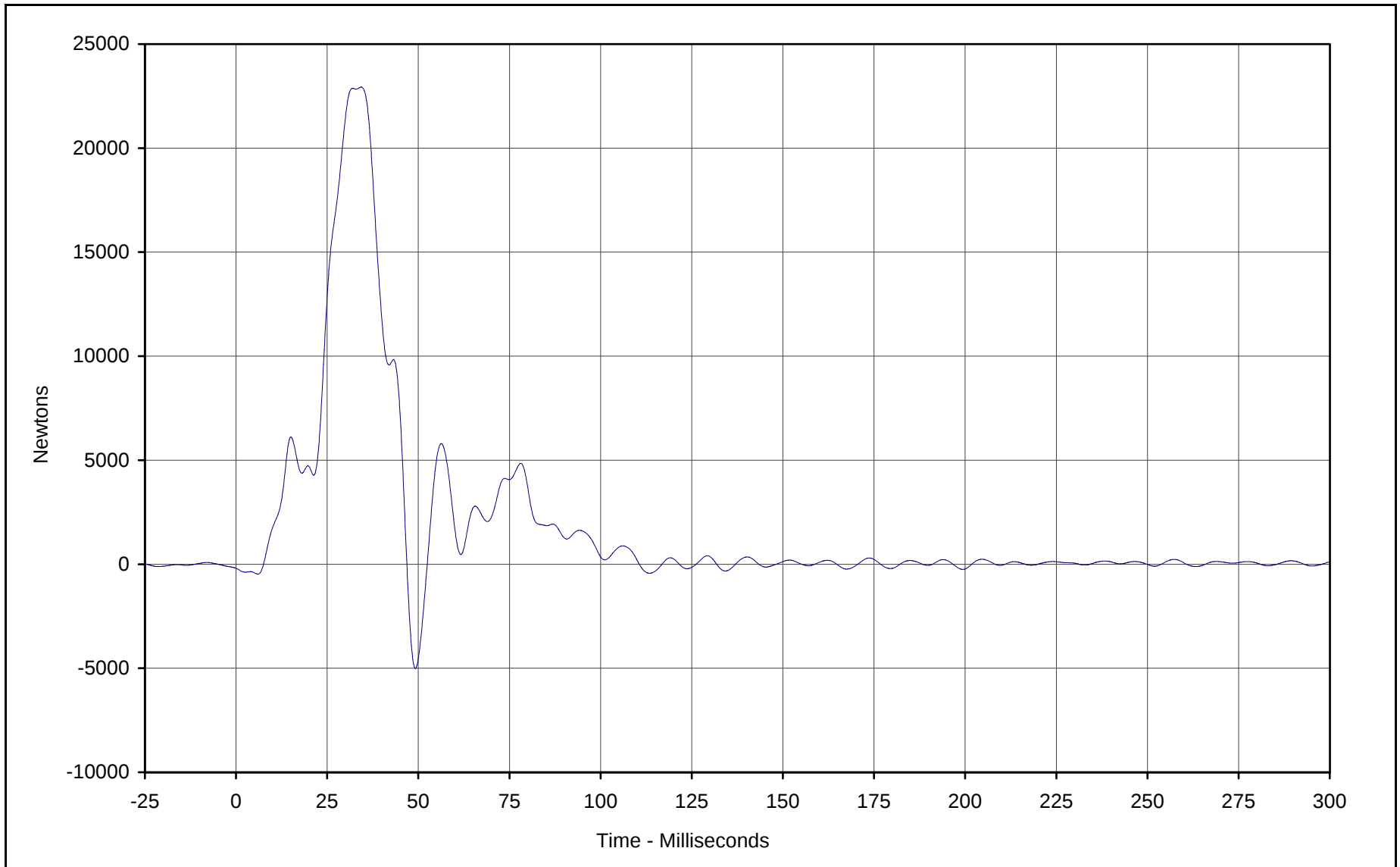
Curve Description: Barrier Force C9
Maximum Value: 5863.0 at 47.1 Milliseconds
Minimum Value: -1863.7 at 6.7 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: FIL-128

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-25

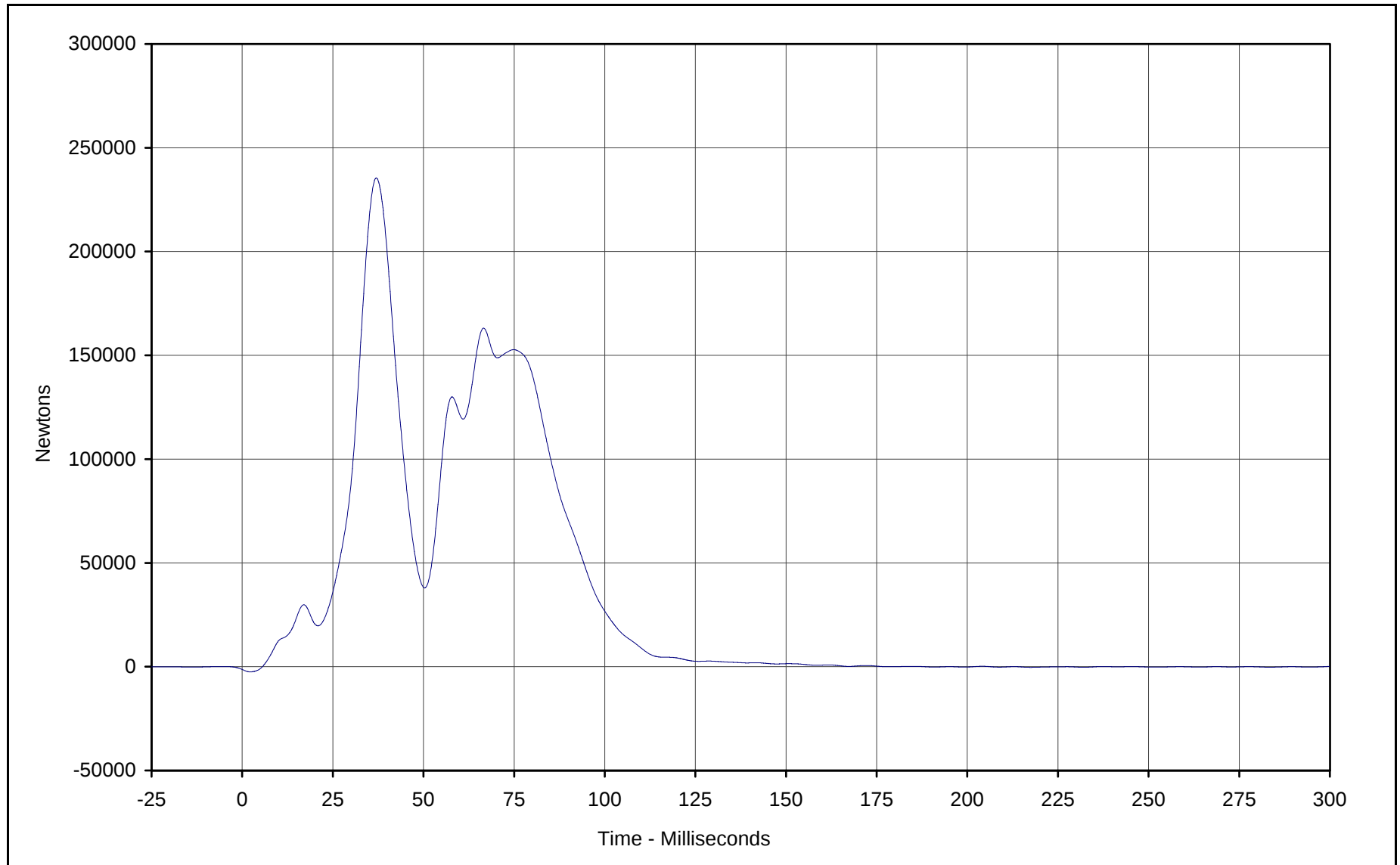


Curve Description: Barrier Force Sum Group 1
Maximum Value: 22936.3 at 34.3 Milliseconds
Minimum Value: -5019.1 at 49.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

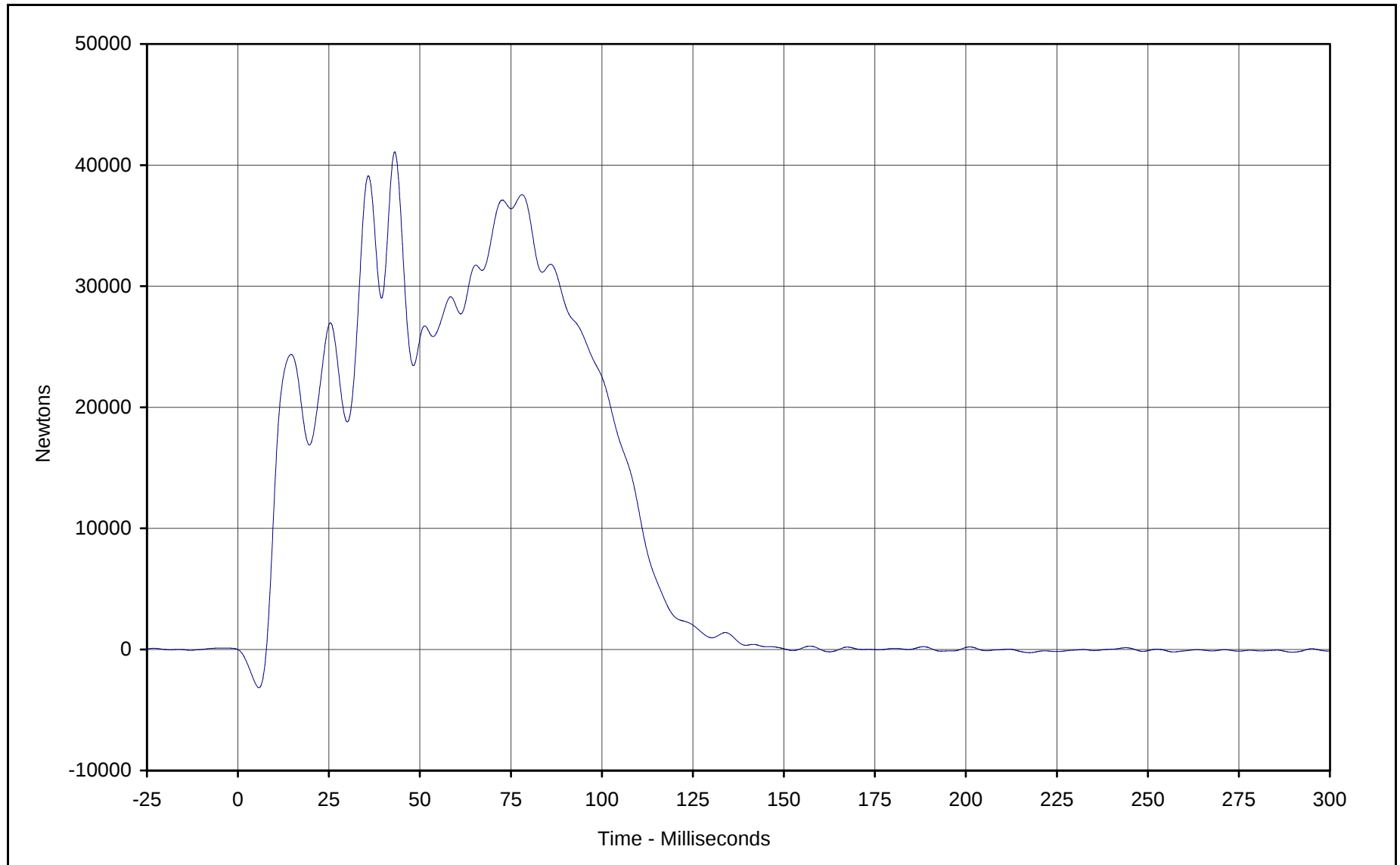


Curve Description: Barrier Force Sum Group 2
Maximum Value: 235457.2 at 37.0 Milliseconds
Minimum Value: -2506.6 at 2.3 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-002

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



C-27

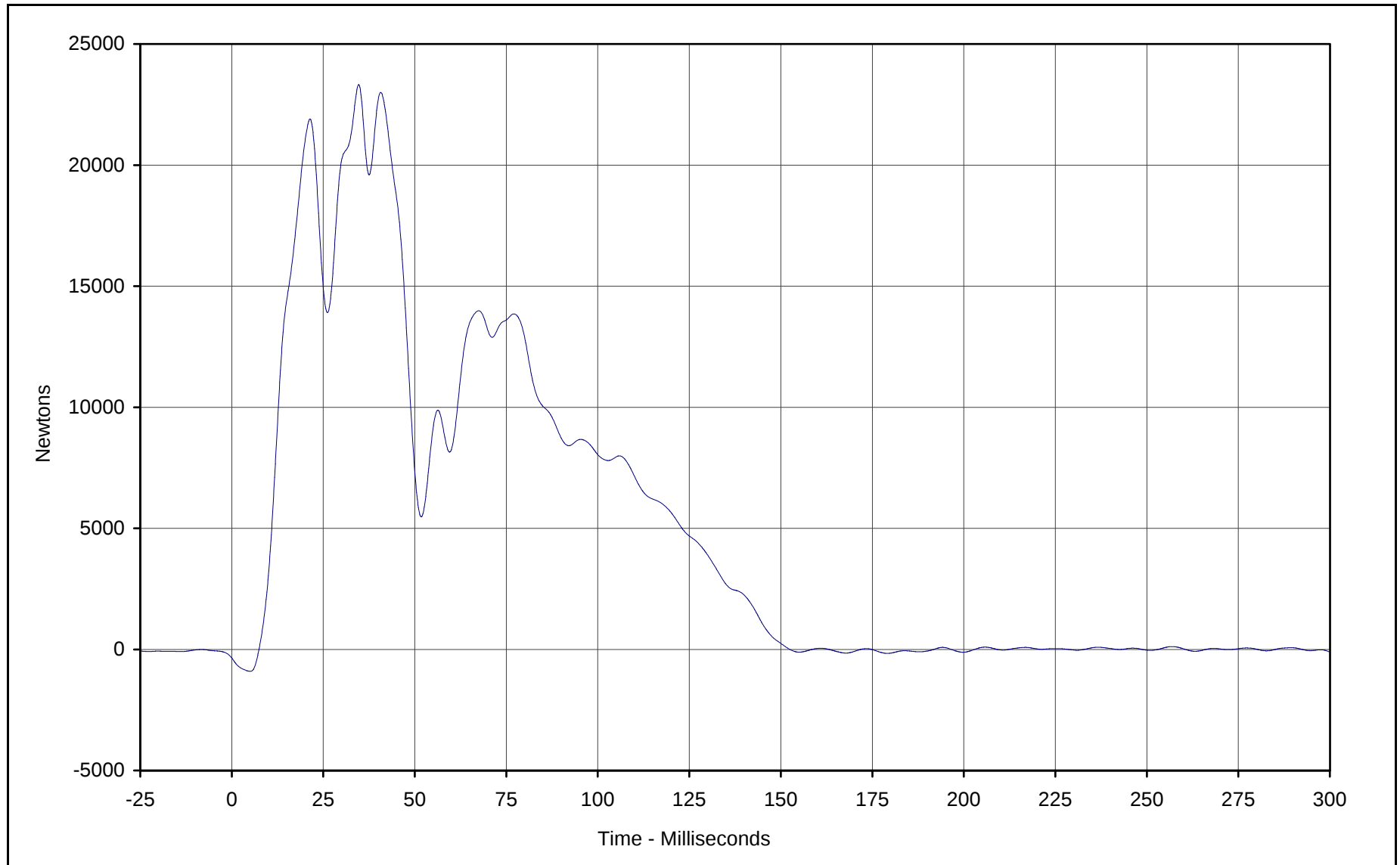


Curve Description: Barrier Force Sum Group 3
Maximum Value: 41089.7 at 43.1 Milliseconds
Minimum Value: -3168.5 at 5.8 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-003

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



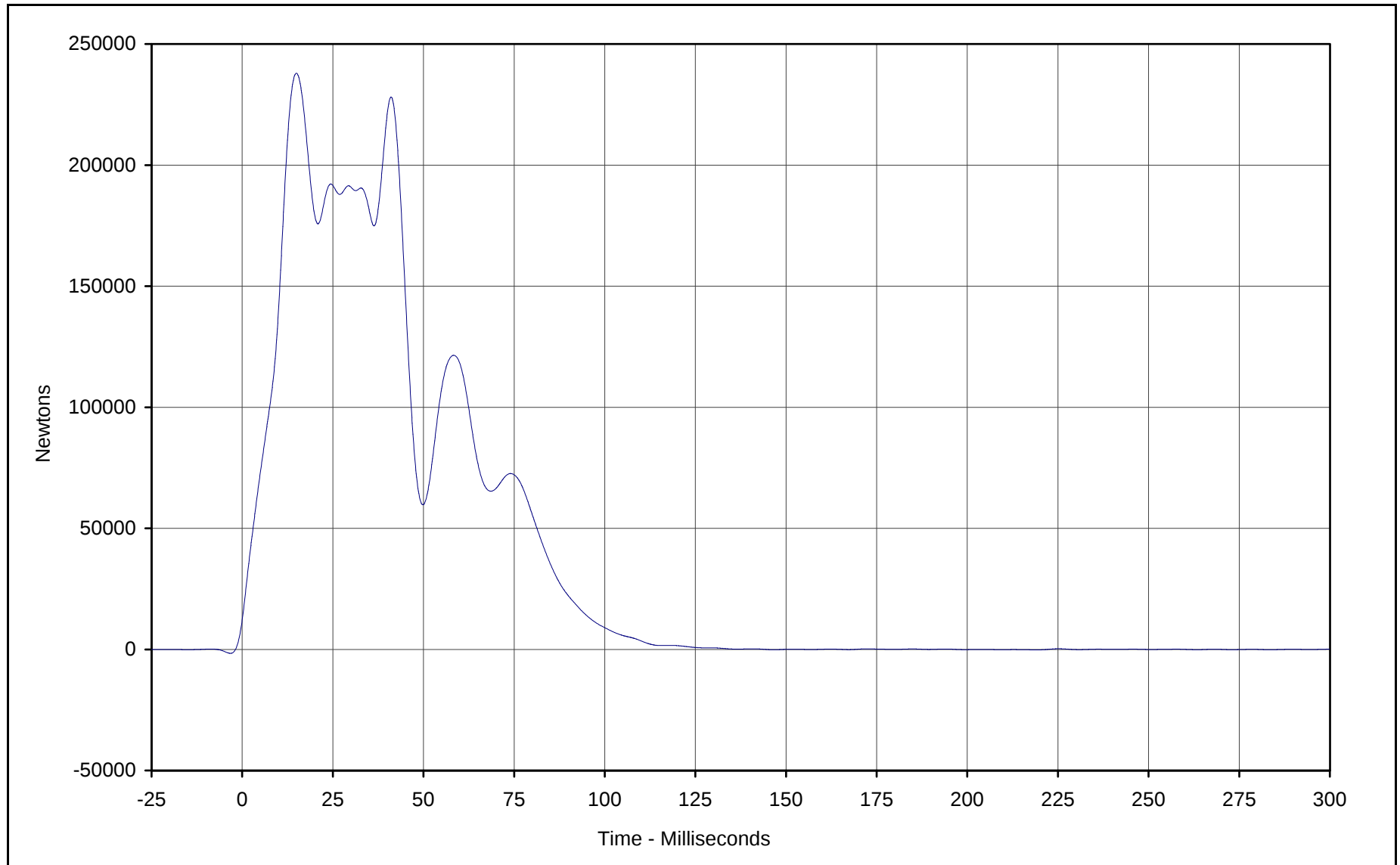
KAR22001-02



Curve Description: Barrier Force Sum Group 4
Maximum Value: 23322.6 at 34.7 Milliseconds
Minimum Value: -903.7 at 5.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-004

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



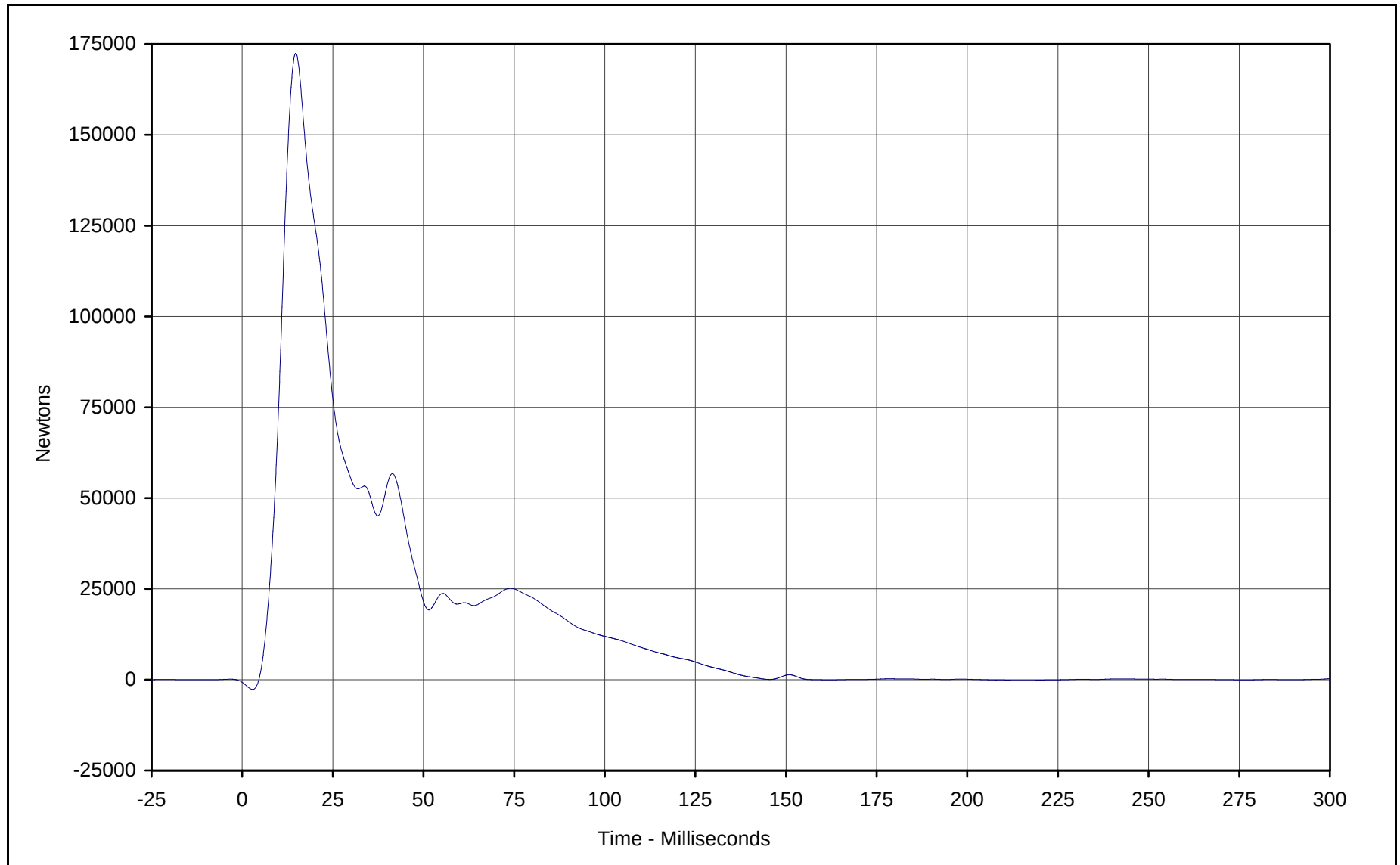


Curve Description: Barrier Force Sum Group 5
Maximum Value: 237922.3 at 14.9 Milliseconds
Minimum Value: -203.9 at 219.2 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-005

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



C-30



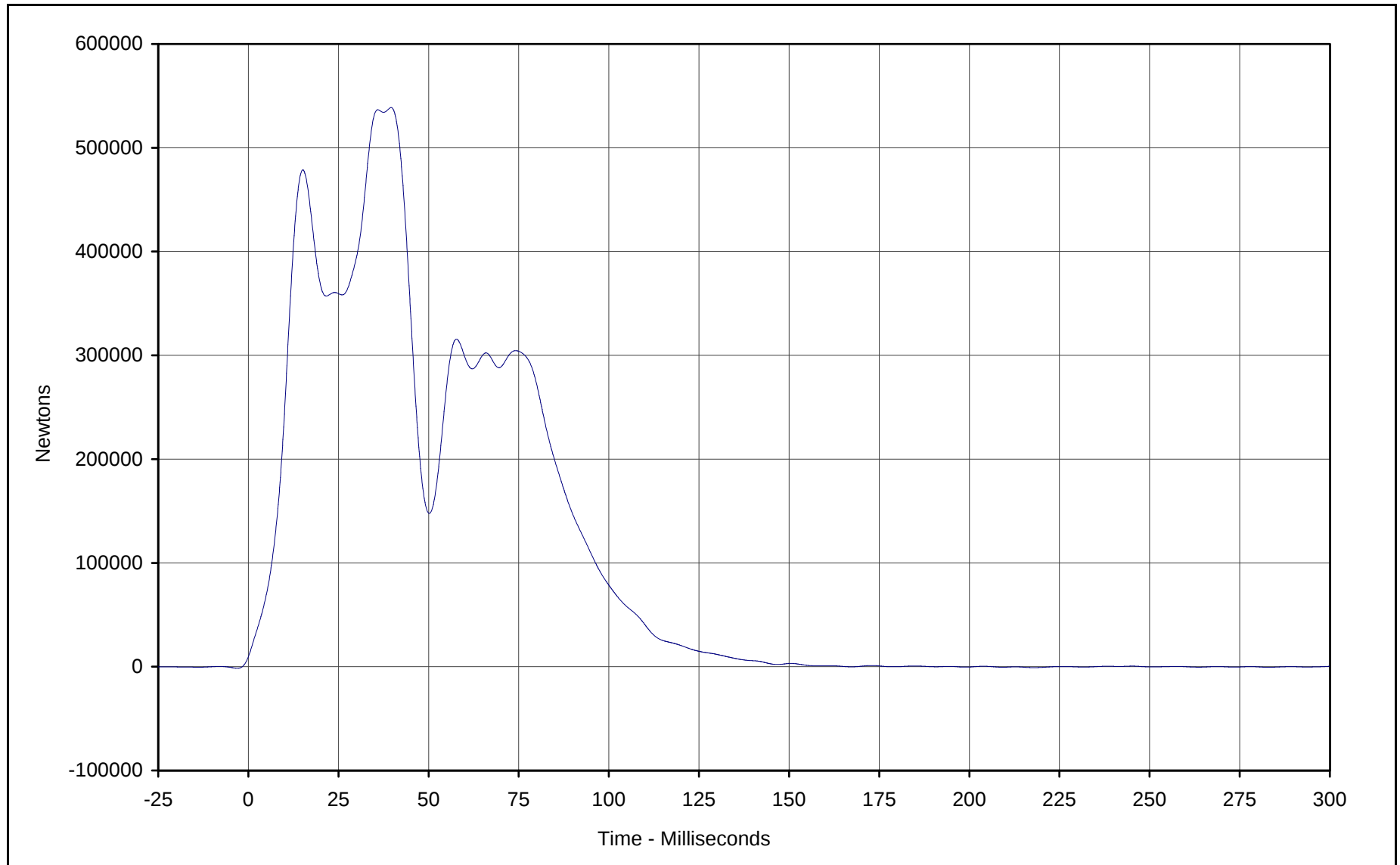
Curve Description: Barrier Force Sum Group 6
Maximum Value: 172439.4 at 14.8 Milliseconds
Minimum Value: -2675.2 at 2.9 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-006

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-31



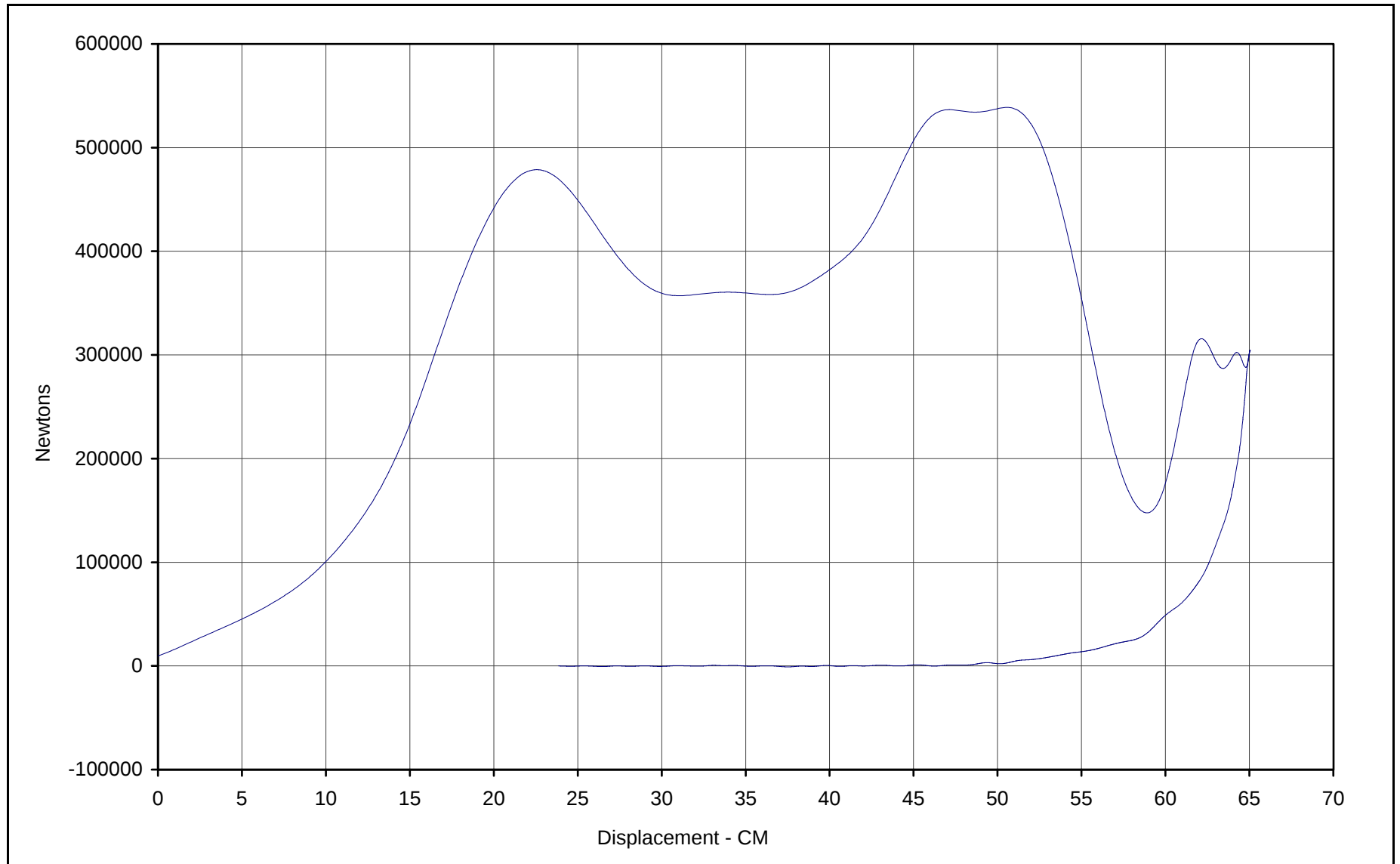
Curve Description: Barrier Force Sum Total
Maximum Value: 538759.9 at 39.6 Milliseconds
Minimum Value: -907.5 at 217.9 Milliseconds
SAE Filter Class: 60
Date of Test: 12/13/01
Curve Number: SUM-007

Test Program: 2002 NHTSA 35mph NCAP No.: M20105
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

C-32



Curve Description: Sum Force Total vs. Dynamic Crush

Maximum Displ.: 65.0 at 74.1 Milliseconds

Maximum Force: 538,760 at 39.6 Milliseconds

Measured Energy: 198,942 joules

Date of Test: 12/13/01

Curve Number: XVY-001

Test Program: 2002 NHTSA 35mph NCAP No.: M20105

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV



KAR22001-02

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

NHTSA No.: M20105

Test Program: 2002 NHTSA 35mph NCAP

Test Date: 12/13/01

BARRIER LOAD CELL PEAK FORCES

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	2314.6	43.9	-1919.8	48.4
Barrier Force A3	Newtons	3547.6	19.3	-2016.8	49.2
Barrier Force A4	Newtons	2184.7	37.2	-2461.7	21.8
Barrier Force A5	Newtons	2881.5	37.1	-2602.9	21.6
Barrier Force A6	Newtons	3657.3	31.5	-2311.7	21.2
Barrier Force A7	Newtons	26274.6	36.1	-781.8	29.8
Barrier Force A8	Newtons	3491.3	43.0	-1447.6	20.4
Barrier Force A9	Newtons	4828.0	42.8	-1771.5	20.0
Barrier Force B2	Newtons	980.4	24.5	-883.1	49.9
Barrier Force B3	Newtons	22248.7	33.7	-655.8	50.1
Barrier Force B4	Newtons	193971.9	36.6	-526.6	1.3
Barrier Force B5	Newtons	45847.4	74.0	-716.8	5.8
Barrier Force B6	Newtons	8138.6	35.6	-694.0	5.1
Barrier Force B7	Newtons	20541.4	19.1	-119.9	297.9
Barrier Force B8	Newtons	3466.8	43.0	-900.7	6.2
Barrier Force B9	Newtons	0.0	0.0	0.0	0.0 *
Barrier Force C2	Newtons	15432.1	40.5	-361.7	4.3
Barrier Force C3	Newtons	20858.4	21.0	-575.8	5.5
Barrier Force C4	Newtons	215684.5	15.4	-2604.7	1.0
Barrier Force C5	Newtons	89726.2	41.3	-91.0	135.0
Barrier Force C6	Newtons	40890.8	41.7	-82.3	219.5
Barrier Force C7	Newtons	163221.7	14.7	-1654.0	2.2
Barrier Force C8	Newtons	18189.0	32.7	-1240.9	5.9
Barrier Force C9	Newtons	5863.0	47.1	-1863.7	6.7
Barrier Force Sum Group 1	Newtons	22936.3	34.3	-5019.1	49.2
Barrier Force Sum Group 2	Newtons	235457.2	37.0	-2506.6	2.3
Barrier Force Sum Group 3	Newtons	41089.7	43.1	-3168.5	5.8
Barrier Force Sum Group 4	Newtons	23322.6	34.7	-903.7	5.0
Barrier Force Sum Group 5	Newtons	237922.3	14.9	-203.9	219.2
Barrier Force Sum Group 6	Newtons	172439.4	14.8	-2675.2	2.9
Barrier Force Sum Total	Newtons	538759.9	39.6	-907.5	217.9

Barrier Load cells A1,B1,C1, and D1 through D9 (12 locations) were not recorded.

* Channel failed, no data

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	Left Knee Slider	X	SLIDER	Rotary Potentiometer	Bourns	150-0121V	MM
26	Right Knee Slider	X	SLIDER	Rotary Potentiometer	Bourns	150-0121V	MM
27	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
30	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
31	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
32	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
34	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
35	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
36	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
37	FOOT LEFT, AFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
42	FOOT RIGHT, FORE	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
43	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
44	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
45	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
46	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
47	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
48	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
49	HEAD, PRIMARY	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	X	KEAC031	Accel.,1/2 bridge	Endevco	7264-2000	G
51	HEAD, REDUNDANT	Y	KEAC032	Accel.,1/2 bridge	Endevco	7264-2000	G
52	HEAD, REDUNDANT	Z	KEAC026	Accel.,1/2 bridge	Endevco	7264-2000	G
53	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
55	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
56	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
58	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
59	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST , REDUNDANT	X	KEAC023	Accel.,1/2 bridge	Endevco	7264-200	G
63	CHEST , REDUNDANT	Y	KEAC022	Accel.,1/2 bridge	Endevco	7264-200	G
64	CHEST , REDUNDANT	Z	KEAC024	Accel.,1/2 bridge	Endevco	7264-200	G
65	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
66	PELVIS, PRIMARY	X	KEAC019	Accel.,1/2 bridge	Endevco	7264-200	G
67	PELVIS, PRIMARY	Y	KEAC020	Accel.,1/2 bridge	Endevco	7264-200	G
68	PELVIS, PRIMARY	Z	KEAC021	Accel.,1/2 bridge	Endevco	7264-200	G
69	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
70	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
71	Left Knee Slider	X	SLIDER	Rotary Potentiometer	Bourns	150-0121V	MM
72	Right Knee Slider	X	SLIDER	Rotary Potentiometer	Bourns	150-0121V	MM
73	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
74	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
75	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
76	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
77	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
79	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
80	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
81	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
82	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
83	FOOT LEFT, AFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
86	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
87	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
88	FOOT RIGHT, FORE	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
89	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
90	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
91	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
92	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
93	Left Rear	X	KEVA002	Accel., Pre-Amp	I.C.S/Karco	3031-500	G
94	Right Rear	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G
95	Engine Top	X	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Engine Bottom	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
97	Left Brake Caliper	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
98	Right Brake Caliper	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
99	Instrument Panel	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
100	Left Rear	Z	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
101	Right Rear	Z	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
102	BARRIER FORCE A1	X	BARRIER	Not Used	N/A	N/A	N/A
103	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
104	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
105	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
106	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
107	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
108	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
109	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
110	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
111	BARRIER FORCE B1	X	BARRIER	Not Used	N/A	N/A	N/A
112	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
113	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
114	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
115	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
116	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
117	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
118	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
119	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N

**2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
120	BARRIER FORCE C1	X	BARRIER	Not Used	N/A	N/A	N/A
121	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
122	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
123	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
124	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
125	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
126	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
127	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
128	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
129	BARRIER FORCE D1	X	BARRIER	Not Used	N/A	N/A	N/A
130	BARRIER FORCE D2	X	BARRIER	Not Used	N/A	N/A	N/A
131	BARRIER FORCE D3	X	BARRIER	Not Used	N/A	N/A	N/A
132	BARRIER FORCE D4	X	BARRIER	Not Used	N/A	N/A	N/A
133	BARRIER FORCE D5	X	BARRIER	Not Used	N/A	N/A	N/A
134	BARRIER FORCE D6	X	BARRIER	Not Used	N/A	N/A	N/A
135	BARRIER FORCE D7	X	BARRIER	Not Used	N/A	N/A	N/A
136	BARRIER FORCE D8	X	BARRIER	Not Used	N/A	N/A	N/A
137	BARRIER FORCE D9	X	BARRIER	Not Used	N/A	N/A	N/A

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Nine Accelerometer Head Array Channels
12/13/01
2002 Chevrolet Blazer LS ZR2 SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
138	Driver Head CG	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
139	Driver Head CG	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
140	Driver Head CG	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
141	Driver Y-arm	Z	GPAC012	Accel., 1/2 bridge	Endevco	7264-2000	G
142	Driver Y-arm	X	GPAC001	Accel., 1/2 bridge	Endevco	7264-2000	G
143	Driver X-arm	Z	GPAC036	Accel., 1/2 bridge	Endevco	7264-2000	G
144	Driver X-arm	Y	GPAC014	Accel., 1/2 bridge	Endevco	7264-2000	G
145	Driver Z-arm	X	GPAC030	Accel., 1/2 bridge	Endevco	7264-2000	G
146	Driver Z-arm	Y	GPAC037	Accel., 1/2 bridge	Endevco	7264-2000	G
147	Passenger Head CG	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
148	Passenger Head CG	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
149	Passenger Head CG	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
150	Passenger Y-arm	Z	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
151	Passenger Y-arm	X	GPAC015	Accel., 1/2 bridge	Endevco	7264-2000	G
152	Passenger X-arm	Z	GPAC004	Accel., 1/2 bridge	Endevco	7264-2000	G
153	Passenger X-arm	Y	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
154	Passenger Z-arm	X	GPAC006	Accel., 1/2 bridge	Endevco	7264-2000	G
155	Passenger Z-arm	Y	GPAC007	Accel., 1/2 bridge	Endevco	7264-2000	G

* Duplicate of Head CG Primary Channels

APPENDIX E

DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: LK06C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5657	Pass
Overall Test Results				Pass

ATD Serial No.: 034

Location: Right Knee

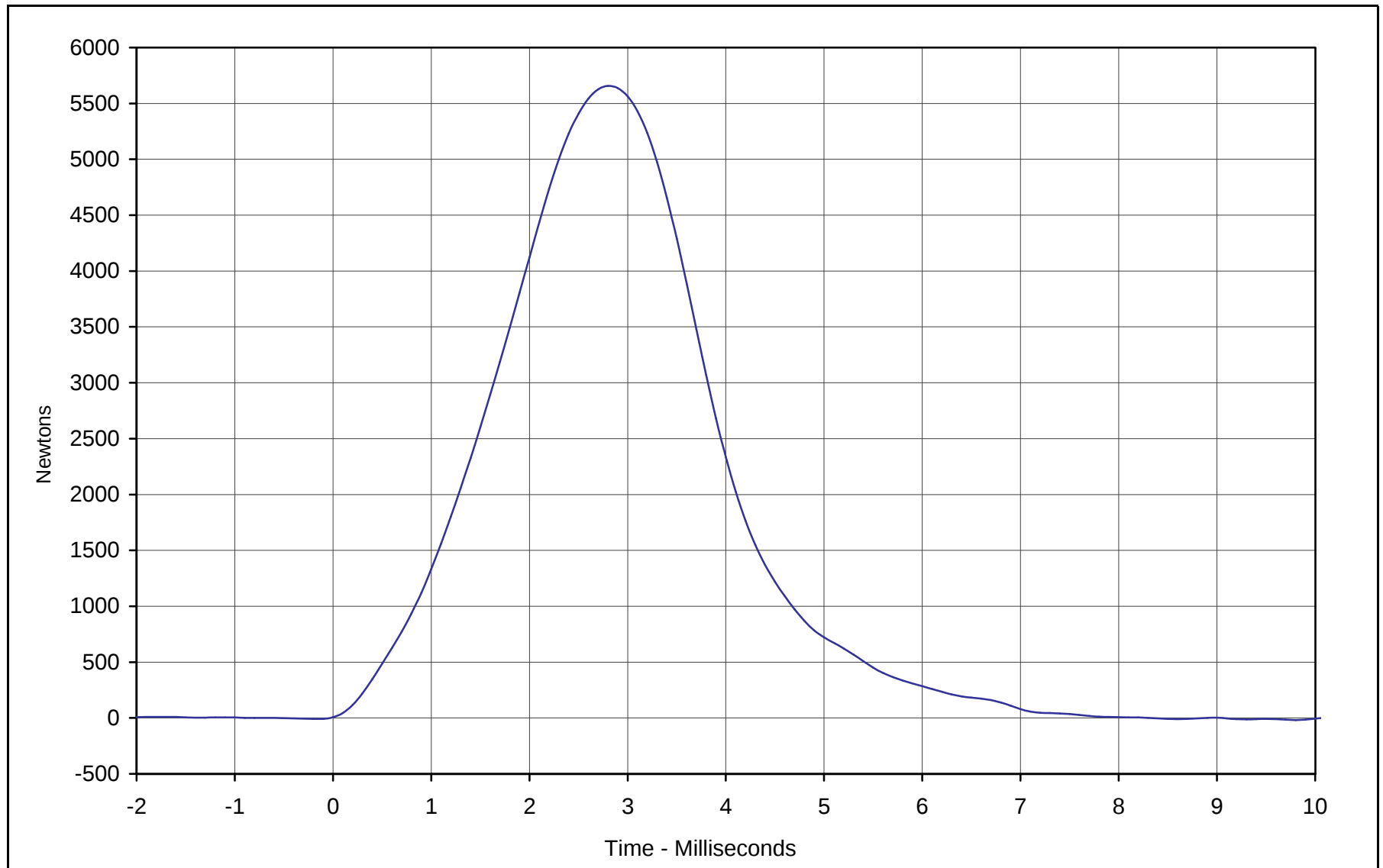
Test I.D.: RK10A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5420	Pass
Overall Test Results				Pass

Laboratory Technician

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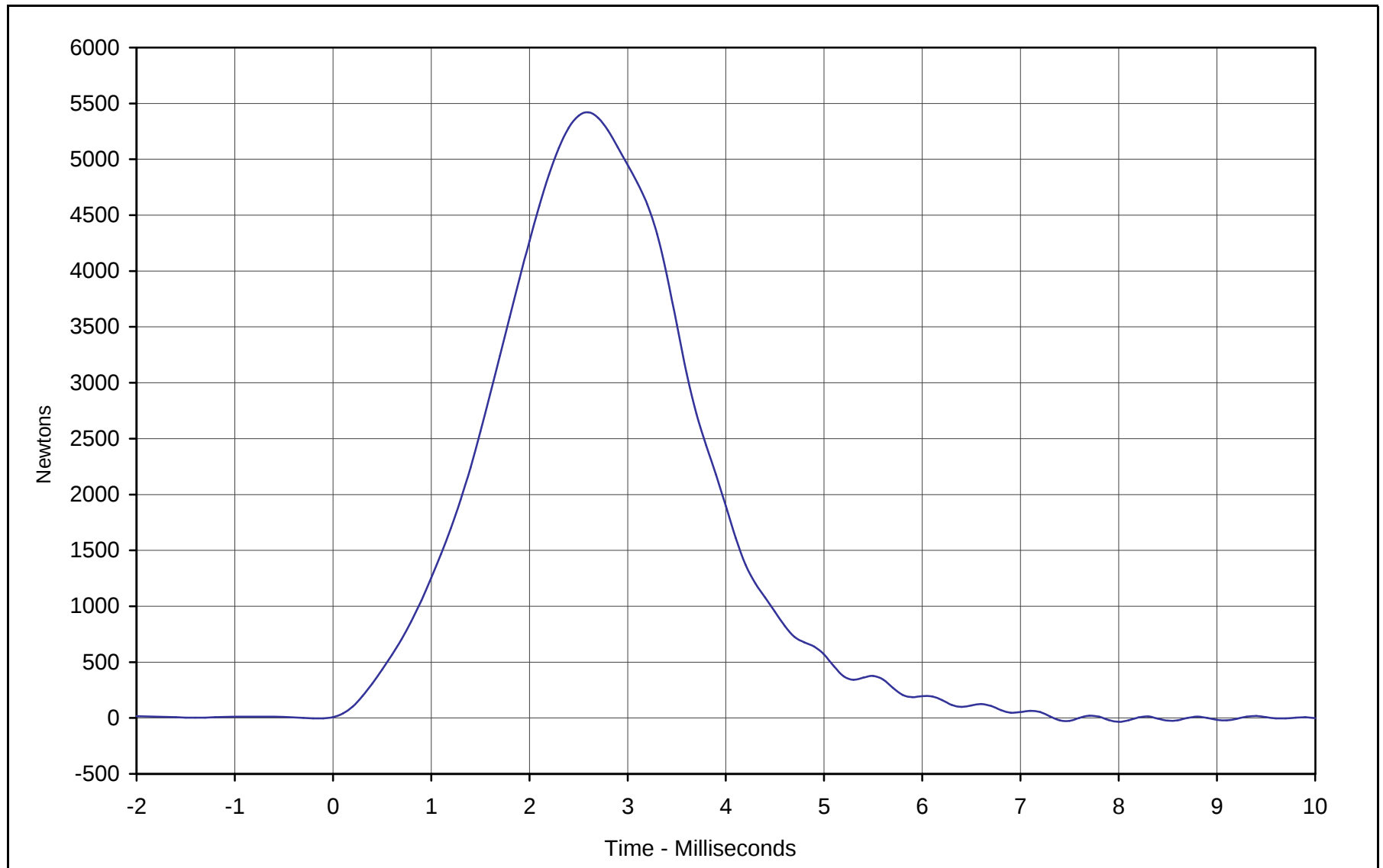
Test Date



Curve Description: Probe Force
Maximum Value: 5657.1 at 2.8 Milliseconds
Minimum Value: -8.8 at -0.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/10/01
ATD Serial No.: 034

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Left Knee Test I.D.: LK06C





Curve Description: Probe Force
Maximum Value: 5420.1 at 2.6 Milliseconds
Minimum Value: -35.4 at 8.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/10/01
ATD Serial No.: 034

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Right Knee Test I.D.: RK10A





Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Slider Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: LS07D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.73	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.66	Pass
	18 mm	kN	2.27 to 3.096	3.01	Pass
Overall Test Results					Pass

ATD Serial No.: 034

Location: Right Knee

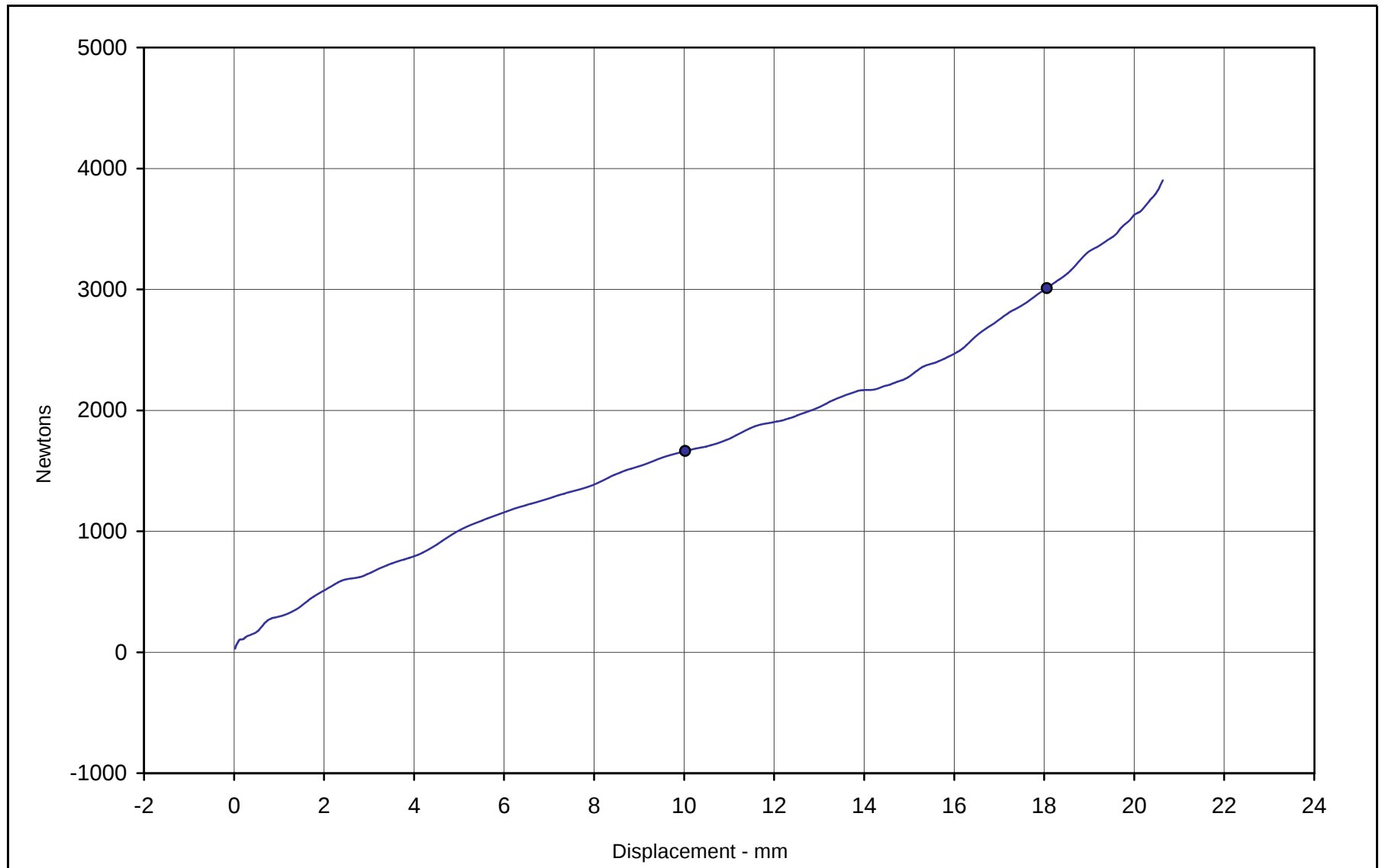
Test I.D.: LS07C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.78	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.54	Pass
	18 mm	kN	2.27 to 3.096	2.98	Pass
Overall Test Results					Pass

Laboratory Technician

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Test Date



Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1664 at 10.0 mm

Femur Force: 3011 at 18.0 mm

SAE Filter Class: 600

Date of Test: 12/10/01

ATD Serial No.: 034

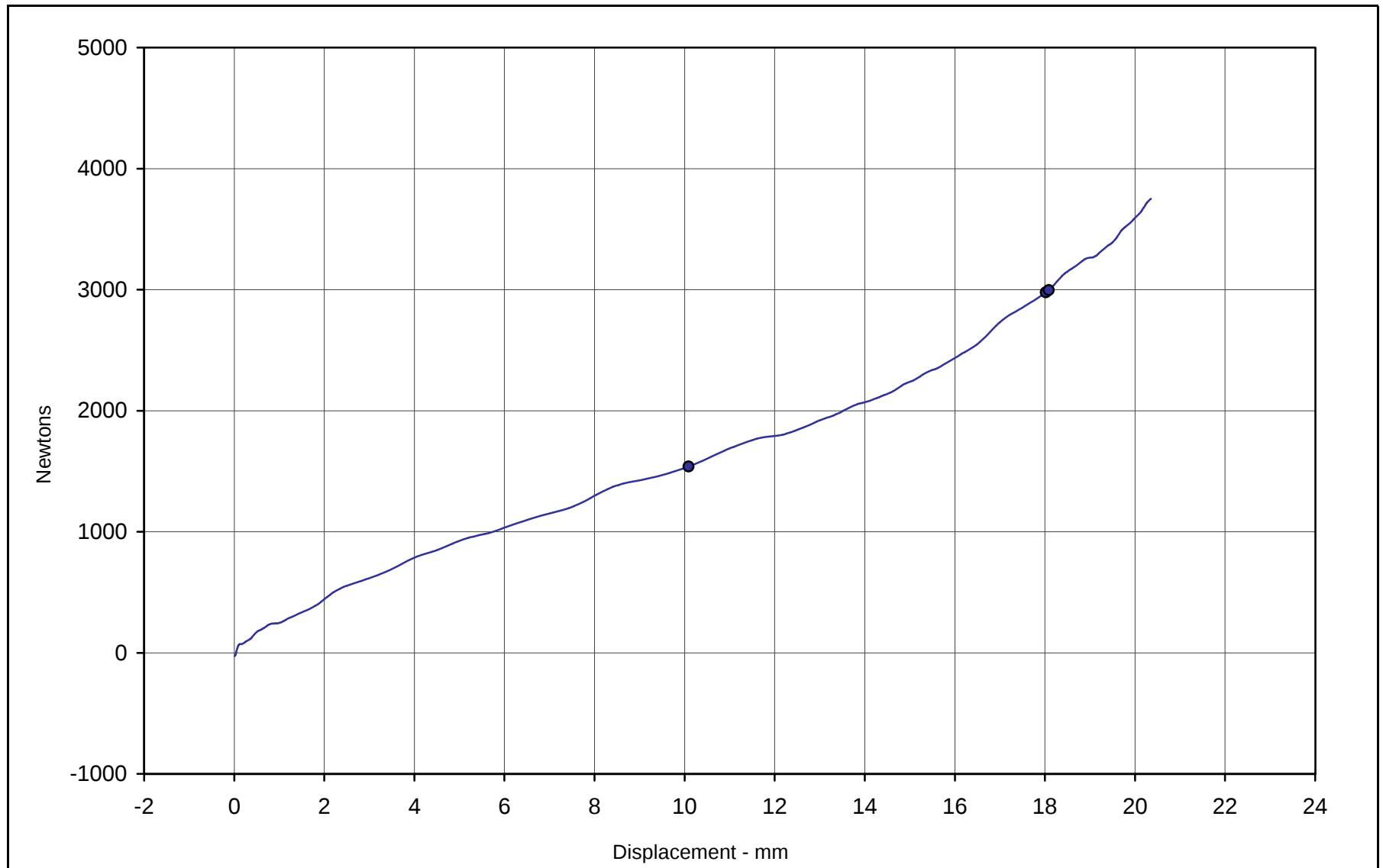
Test Program:

Hybrid III Knee Shear Test

Test Information:

Location: Left Knee Test I.D.: LS07D





Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1538 at 10.0 mm

Femur Force: 2977 at 18.0 mm

SAE Filter Class: 600

Date of Test: 11/28/01

ATD Serial No.: 034

Test Program: Hybrid III Knee Shear Test

Test Information: Location: Right Knee Test I.D.: LS07C





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: HD05D

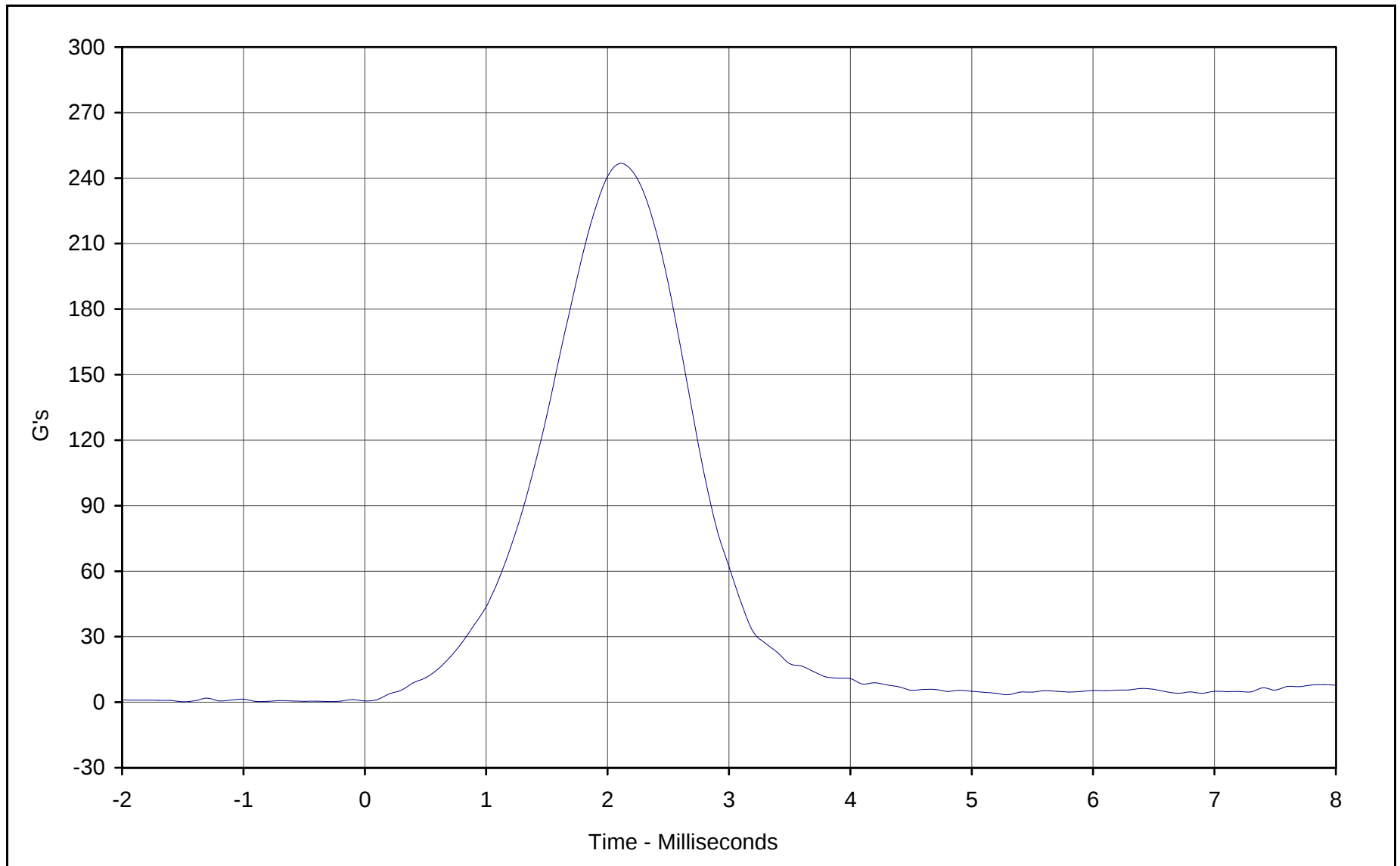
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	246.7	Pass
Peak Lateral Acceleration	G's	≤15.0	13.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

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Test Date

E-8



Curve Description: Head Resultant Acceleration

Maximum Value:	<u>246.7</u>	at	<u>2.1</u>	Milliseconds
Minimum Value:	<u>0.2</u>	at	<u>-1.5</u>	Milliseconds
SAE Filter Class:	<u>1000</u>			
Date of Test:	<u>12/10/01</u>			
ATD Serial No.:	<u>034</u>			

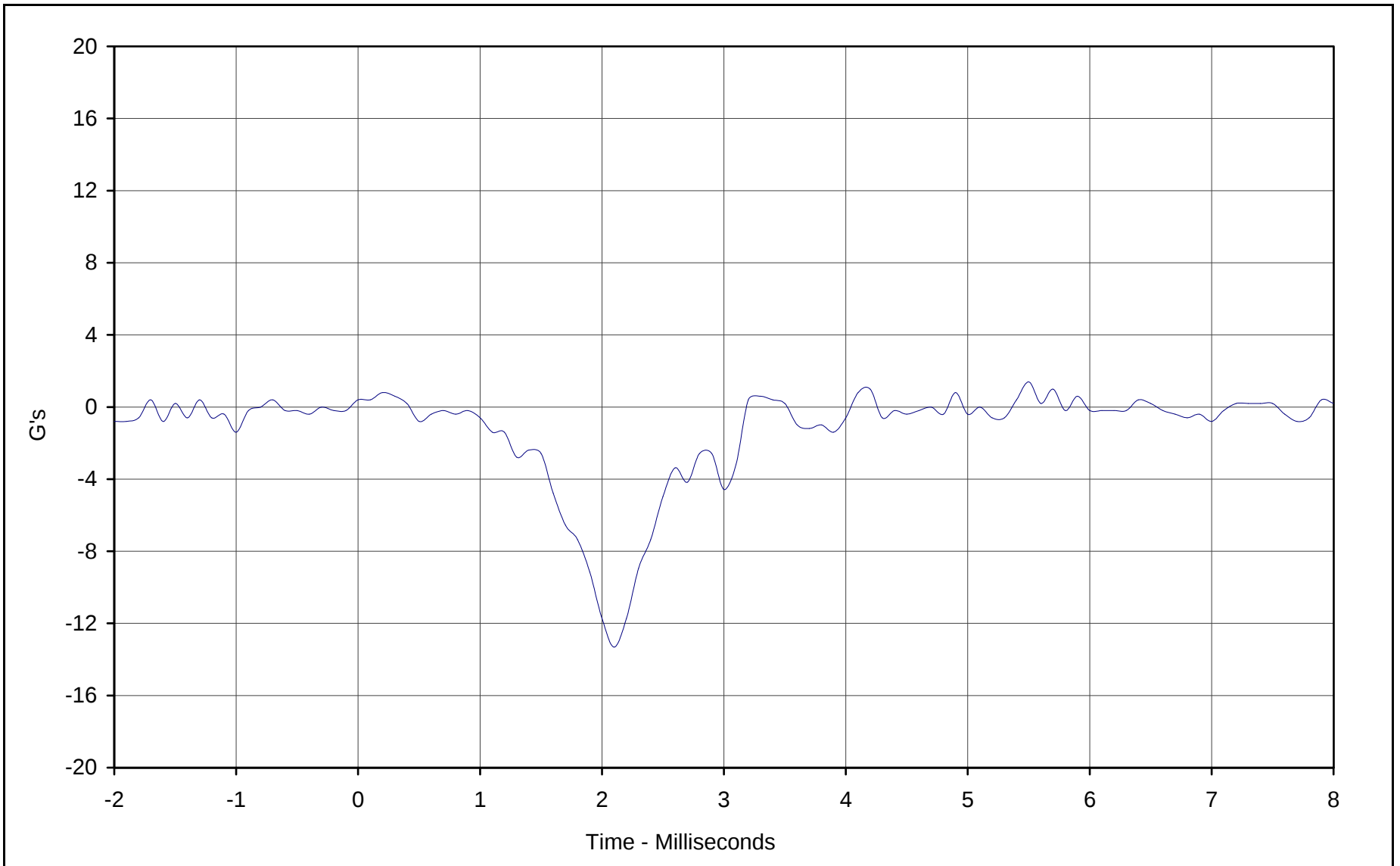
Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD05D



KAR22001-02

E-9



Curve Description: Head Acceleration Y Axis

Maximum Value: 1.4 at 5.5 Milliseconds

Minimum Value: -13.3 at 2.1 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/10/01

ATD Serial No.: 034

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD05D



KAR22001-02



Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

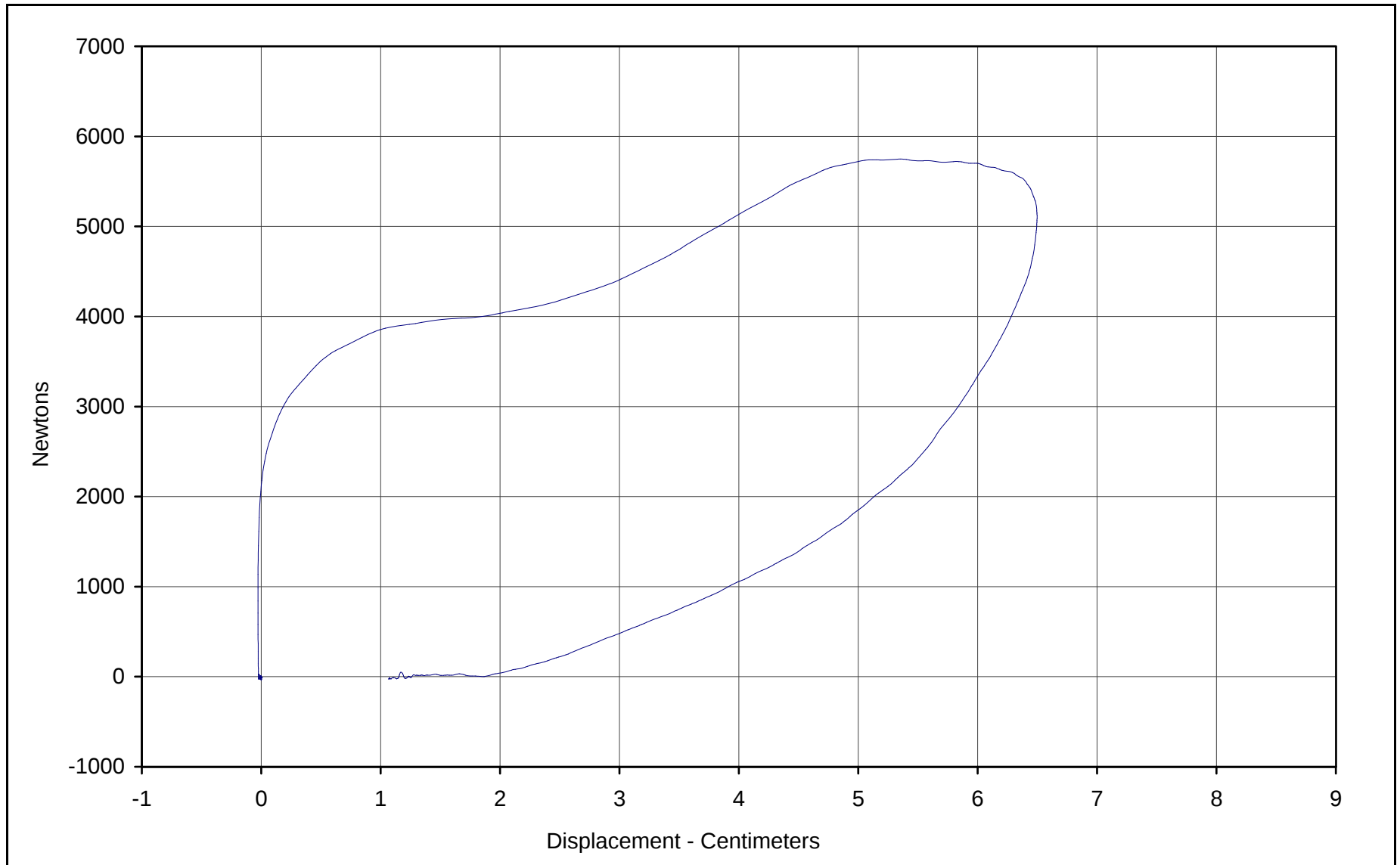
Test I.D.: CH11C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5748	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.50	Pass
Internal Hysteresis	%	69 to 85	77.2	Pass
Overall Test Results				Pass

Laboratory Technician

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Test Date



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 5747.8 Newtons

Chest Displ.: 6.50 Centimeters

SAE Filter Class: 180

Date of Test: 12/11/01

ATD Serial No.: 034

Testing Program: Hybrid III Thorax Impact Test

Test Information: S/N of Part: N/A Test I.D.: CH11C





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 034

Part Serial No.: N/A

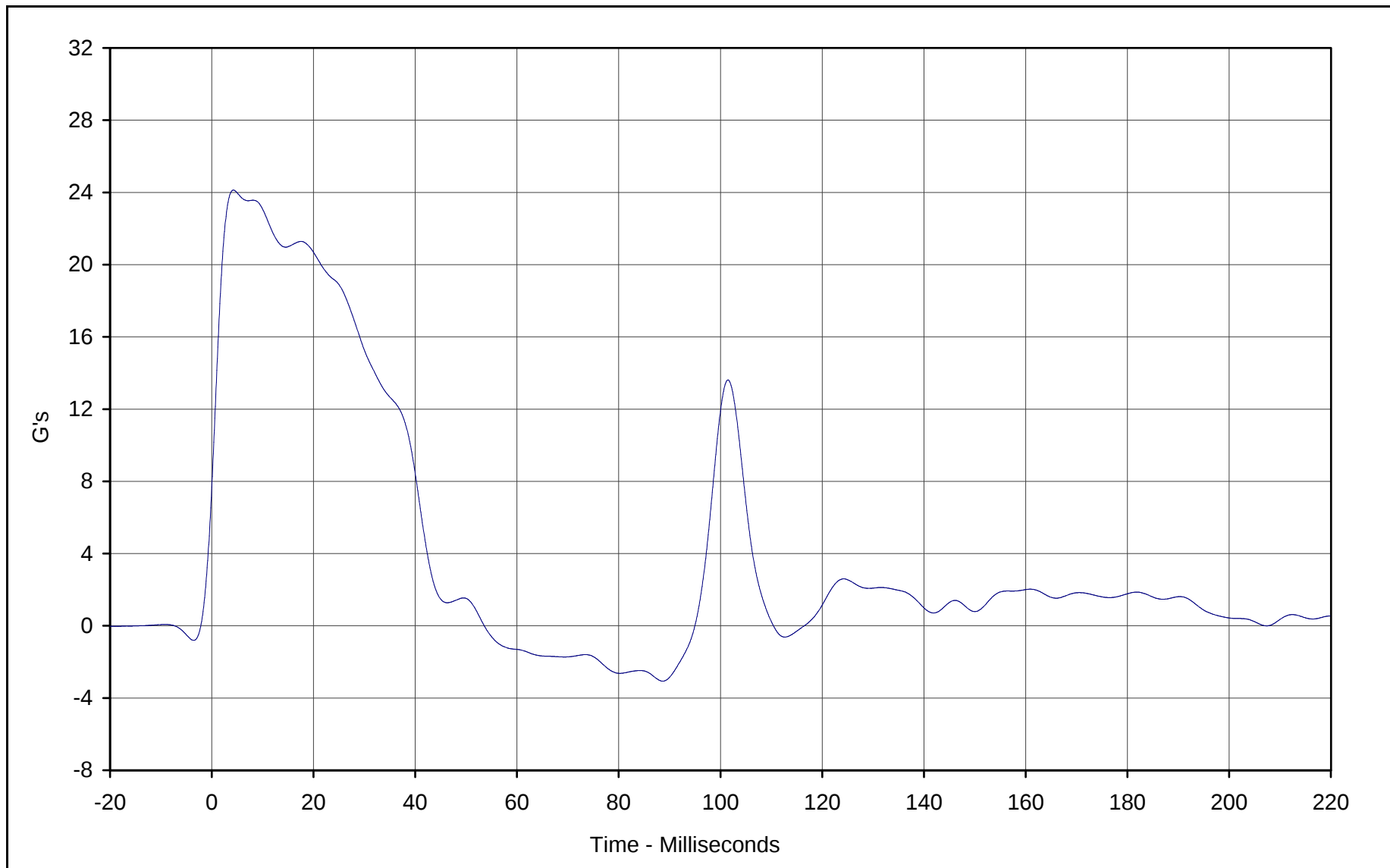
Test I.D.: NF11D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.89	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.1	Pass
	20 Msec.	G's	17.6 to 22.6	20.7	Pass
	30 Msec.	G's	12.5 to 18.5	15.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	15.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	41.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	65.2	Pass
	Time	Msec.	57.0 to 64.0	57.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.9	Pass
Moment About Occipital Condyle	Maximum	N•m	84.1 to 108.5	87.9	Pass
	Time	Msec.	47.0 to 58.0	53.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	99.3	Pass
Overall Test Results					Pass

Laboratory Technician

December 11, 2001

Test Date



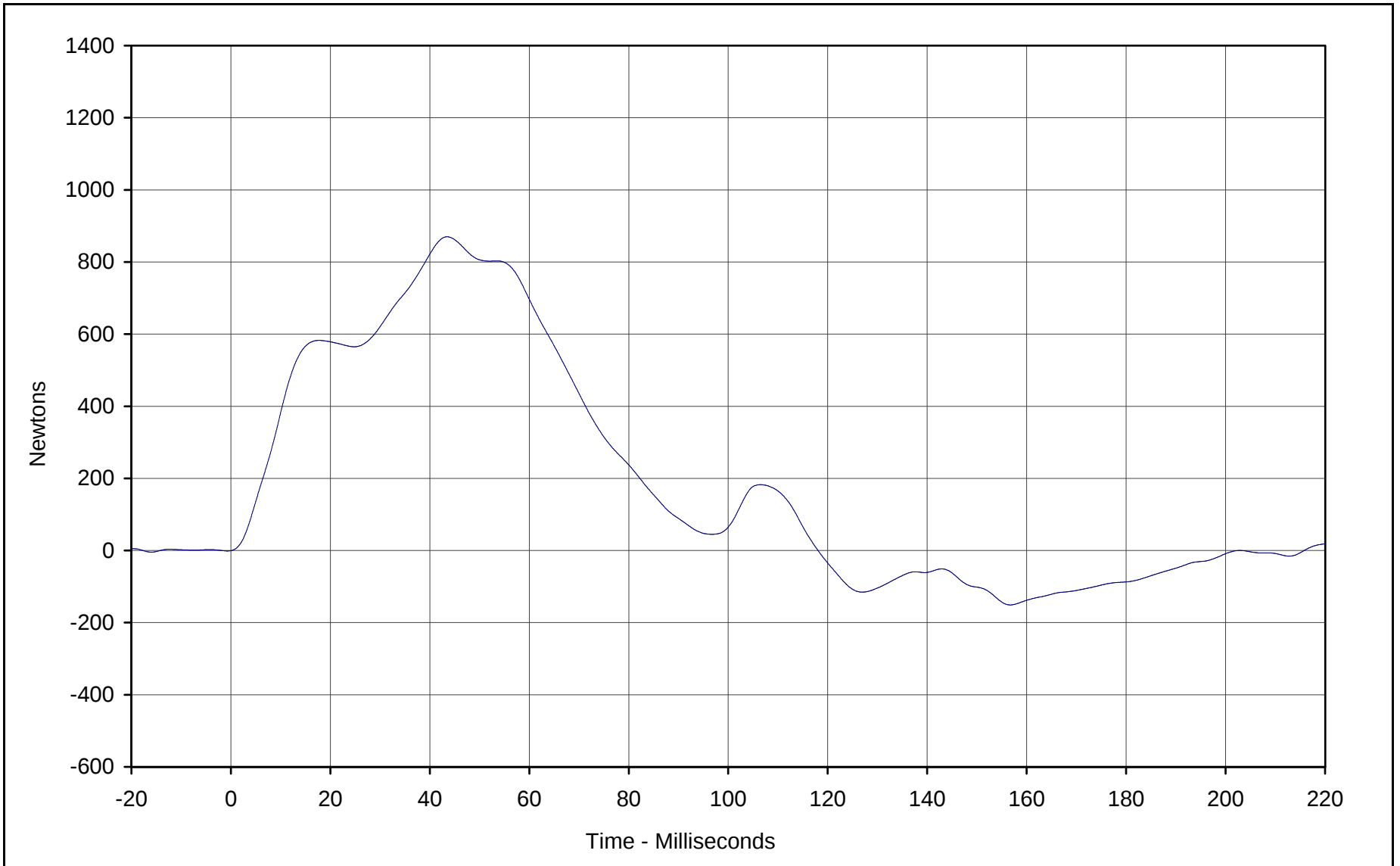
Curve Description: Pendulum Deceleration

Maximum Value:	<u>24.1</u>	at	<u>4.2</u>	Milliseconds
Minimum Value:	<u>-3.1</u>	at	<u>88.7</u>	Milliseconds
SAE Filter Class:	<u>60</u>			
Date of Test:	<u>12/11/01</u>			
ATD Serial No.:	<u>034</u>			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11D





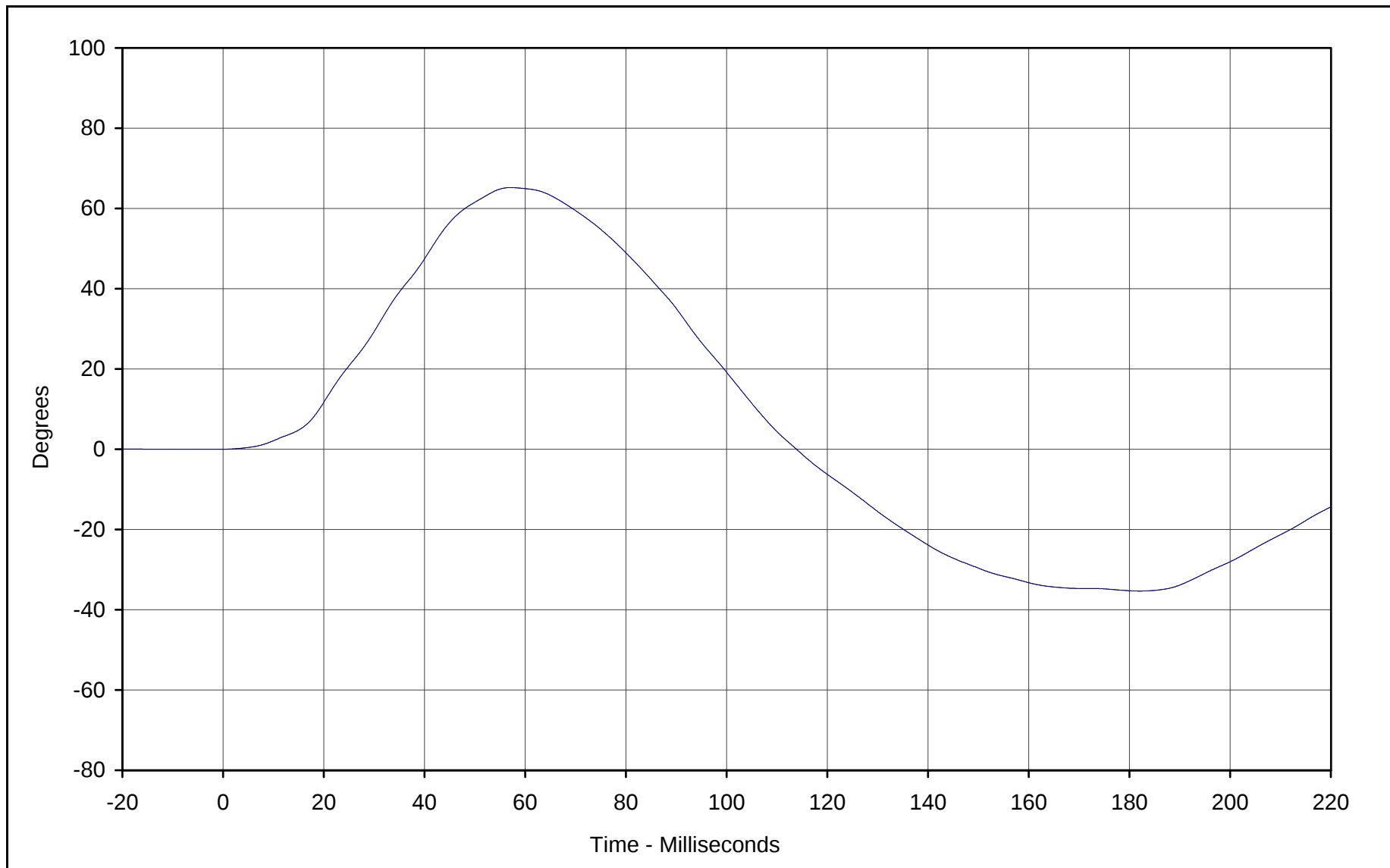
Curve Description: Neck Force X

Maximum Value:	870.0	at	43.5	Milliseconds
Minimum Value:	-151.0	at	156.7	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11D





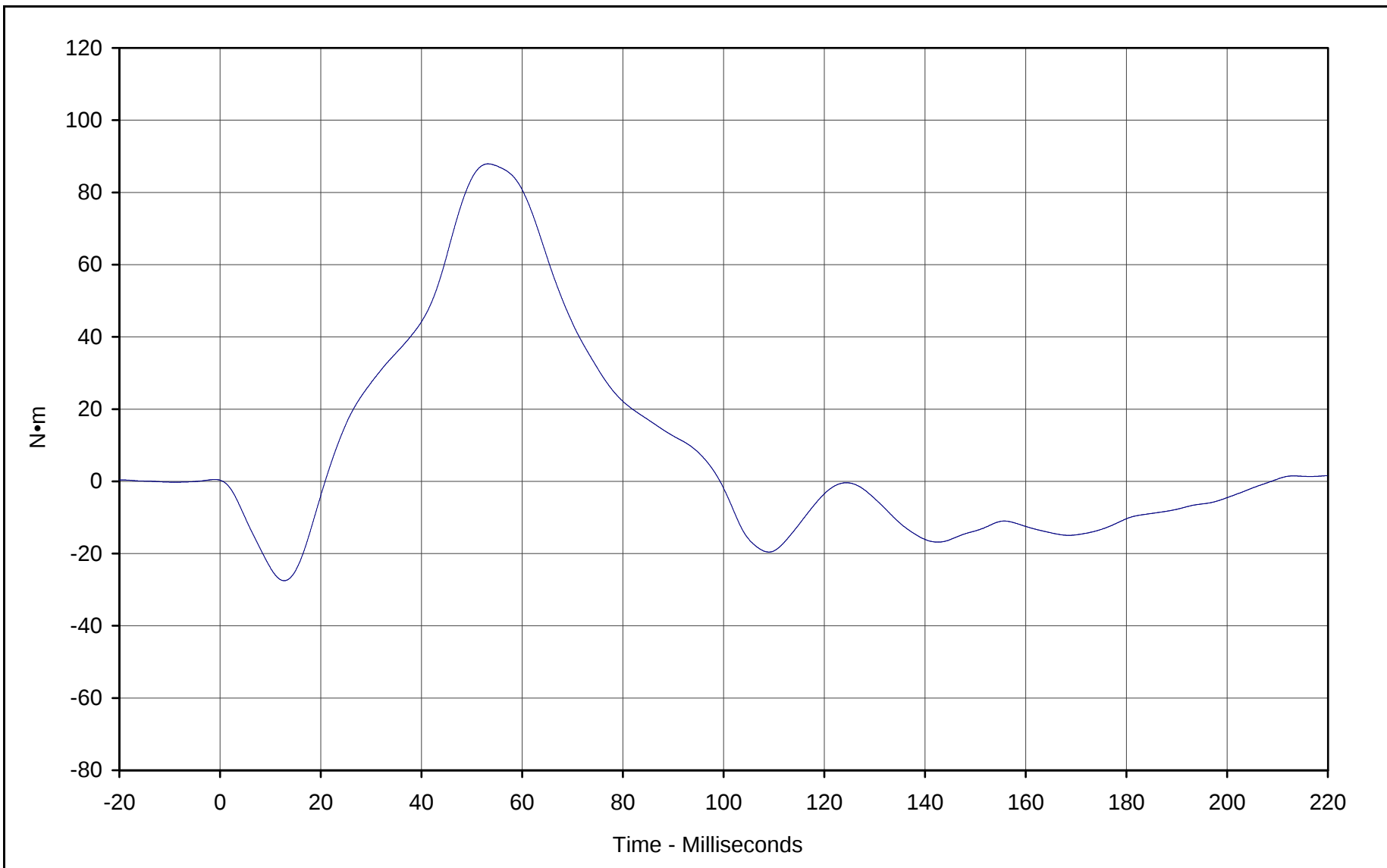
Curve Description: "D" Plane Rotation

Maximum Value:	65.2	at	57.1	Milliseconds
Minimum Value:	-35.3	at	182.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11D





Curve Description: Moment About Occipital Condyles

Maximum Value: 87.9 at 53.2 Milliseconds

Minimum Value: -27.5 at 12.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/01

ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11D





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034

Part Serial No.: N/A

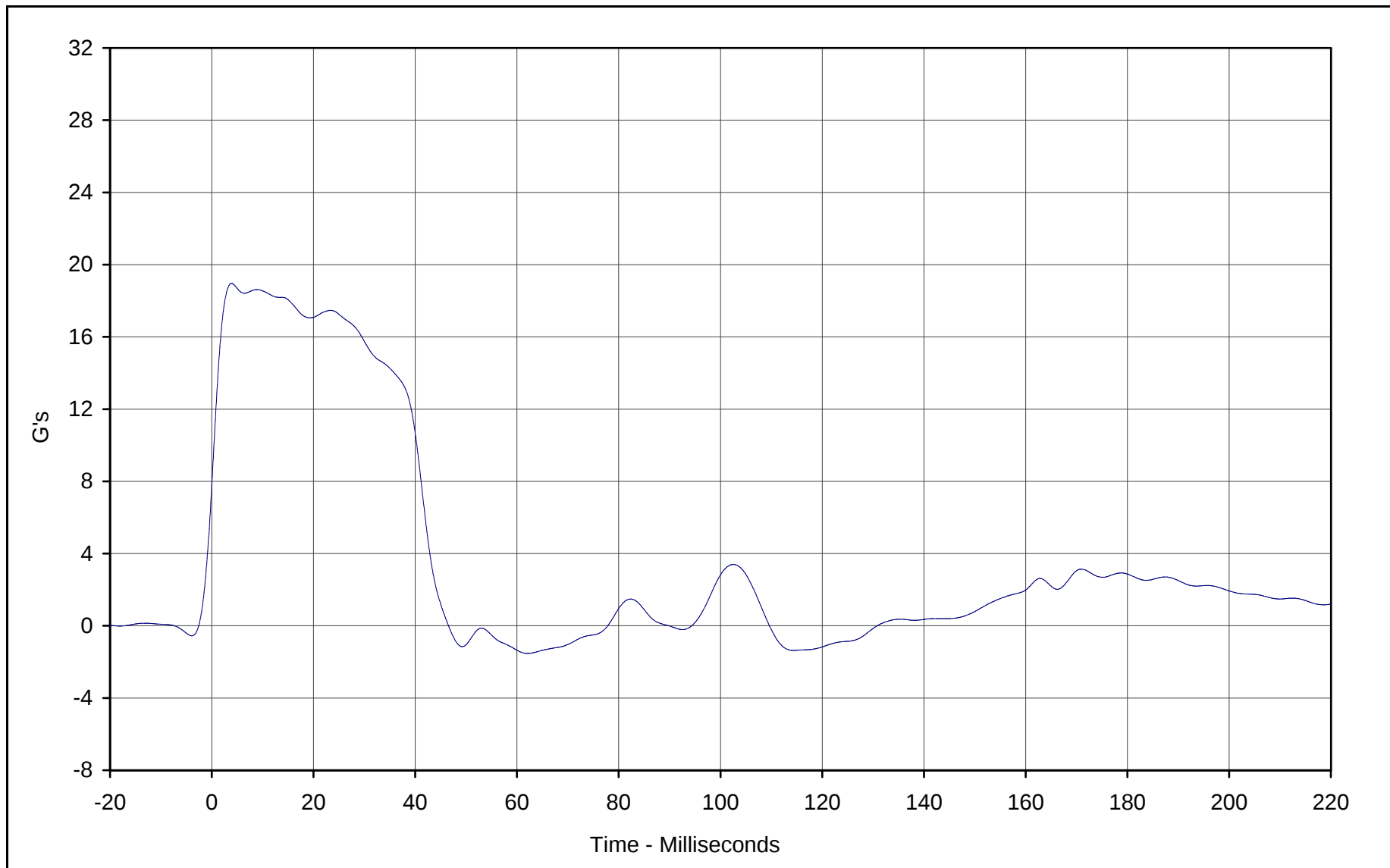
Test I.D.: NE11C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.05	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.5	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.4	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	99.9	Pass
	Time	Msec.	72.0 to 82.0	78.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.1	Pass
Moment About Occipital Condyle	Maximum	N•m	-52.9 to- 79.9	-68.7	Pass
	Time	Msec.	65.0 to 79.0	70.2	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	138.4	Pass
Overall Test Results					Pass

Laboratory Technician

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Test Date

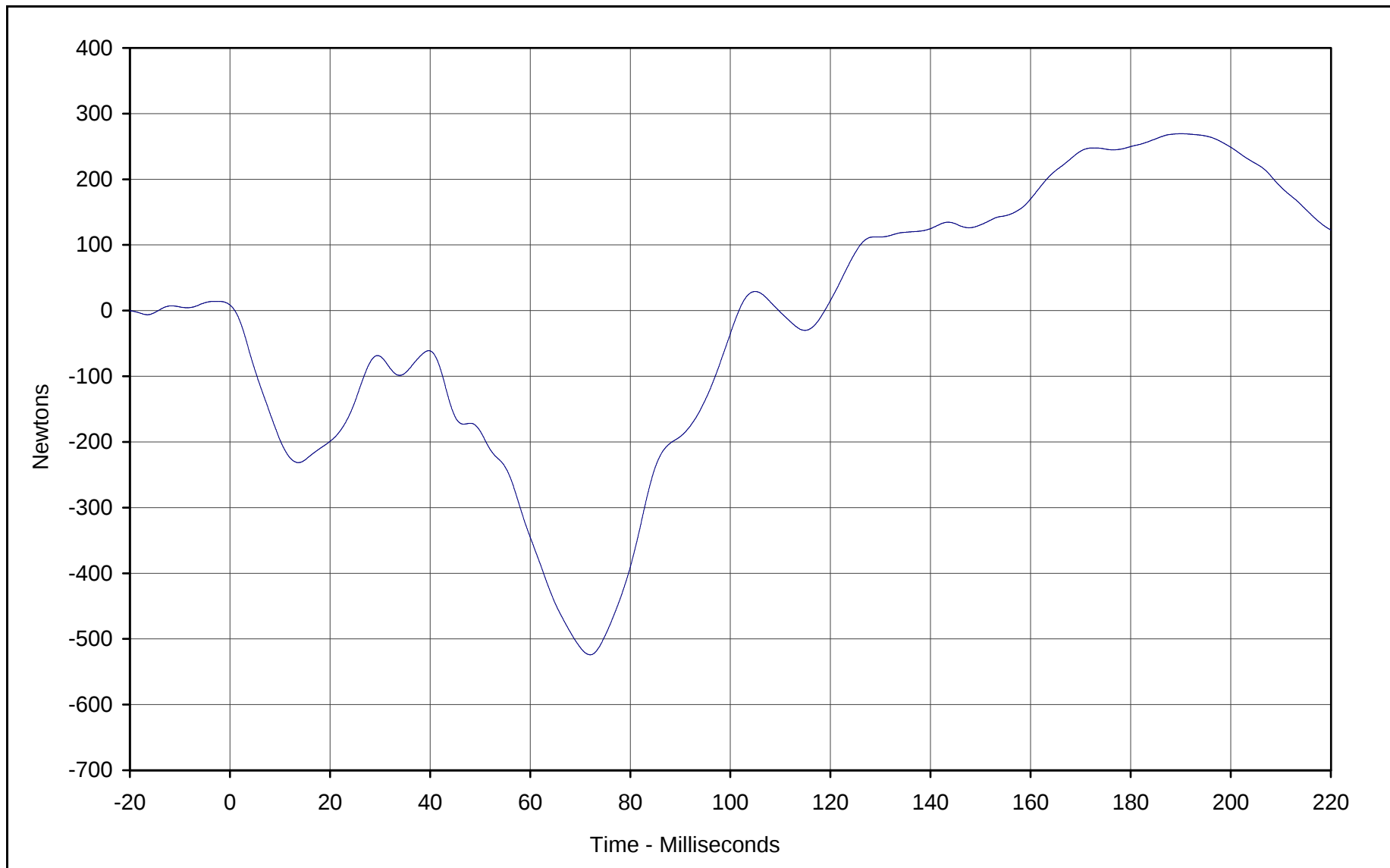


Curve Description:	Pendulum Deceleration		
Maximum Value:	19.0	at	3.9 Milliseconds
Minimum Value:	-1.5	at	62.1 Milliseconds
SAE Filter Class:	60		
Date of Test:	12/11/01		
ATD Serial No.:	034		

Testing Program:	Hybrid III Neck Extension Test (Male)
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Test Information:	S/N of Part: N/A Test I.D.: NE11C
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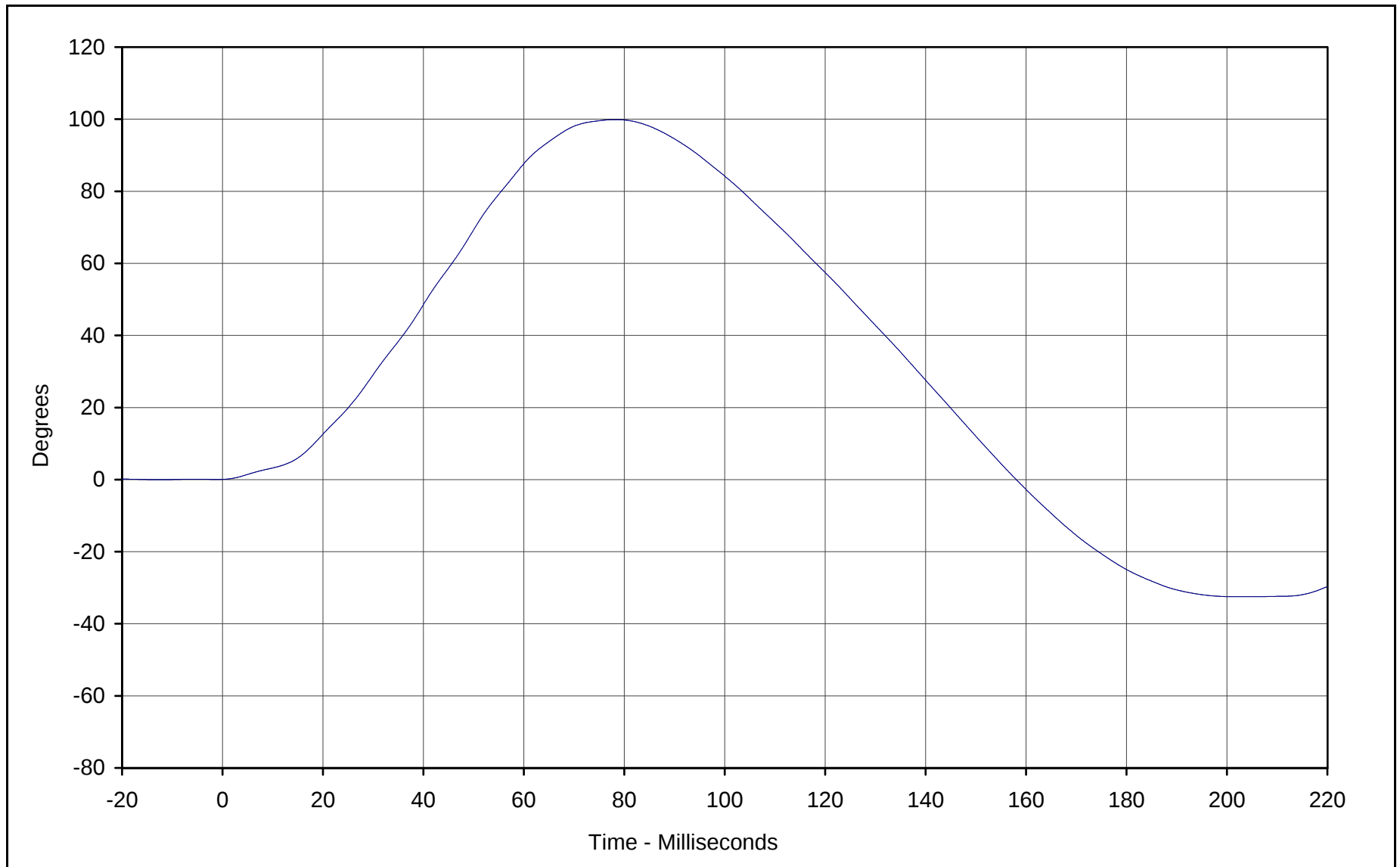
Curve Description: Neck Force X

Maximum Value:	269.4	at	190.1	Milliseconds
Minimum Value:	-524.2	at	72.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11C





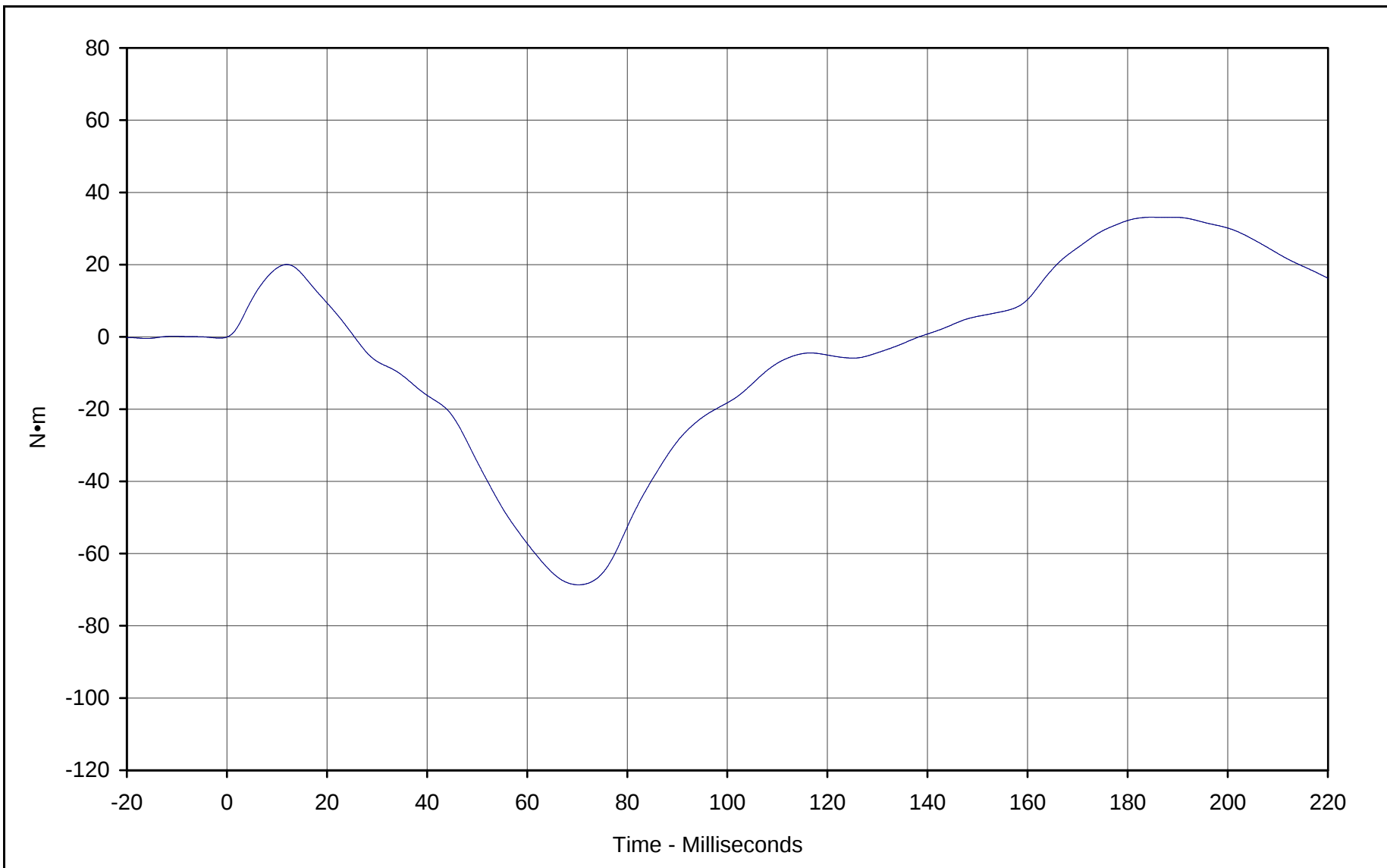
Curve Description: "D" Plane Rotation

Maximum Value:	99.9	at	78.2	Milliseconds
Minimum Value:	-32.5	at	202.2	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11C





Curve Description: Moment About Occipital Condyles

Maximum Value: 33.1 at 184.7 Milliseconds

Minimum Value: -68.7 at 70.2 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/01

ATD Serial No.: 034

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11C





Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	200	Pass
K - Buttock to knee length	mm	579 to 604	595	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	980	Pass
Z - Waist circumference	mm	836 to 866	845	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Laboratory Technician

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Test Date



Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 035

Location: Left Knee

Test I.D.: LK10A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	N	4715 to 5782	5230	Pass
Overall Test Results				Pass

ATD Serial No.: 035

Location: Right Knee

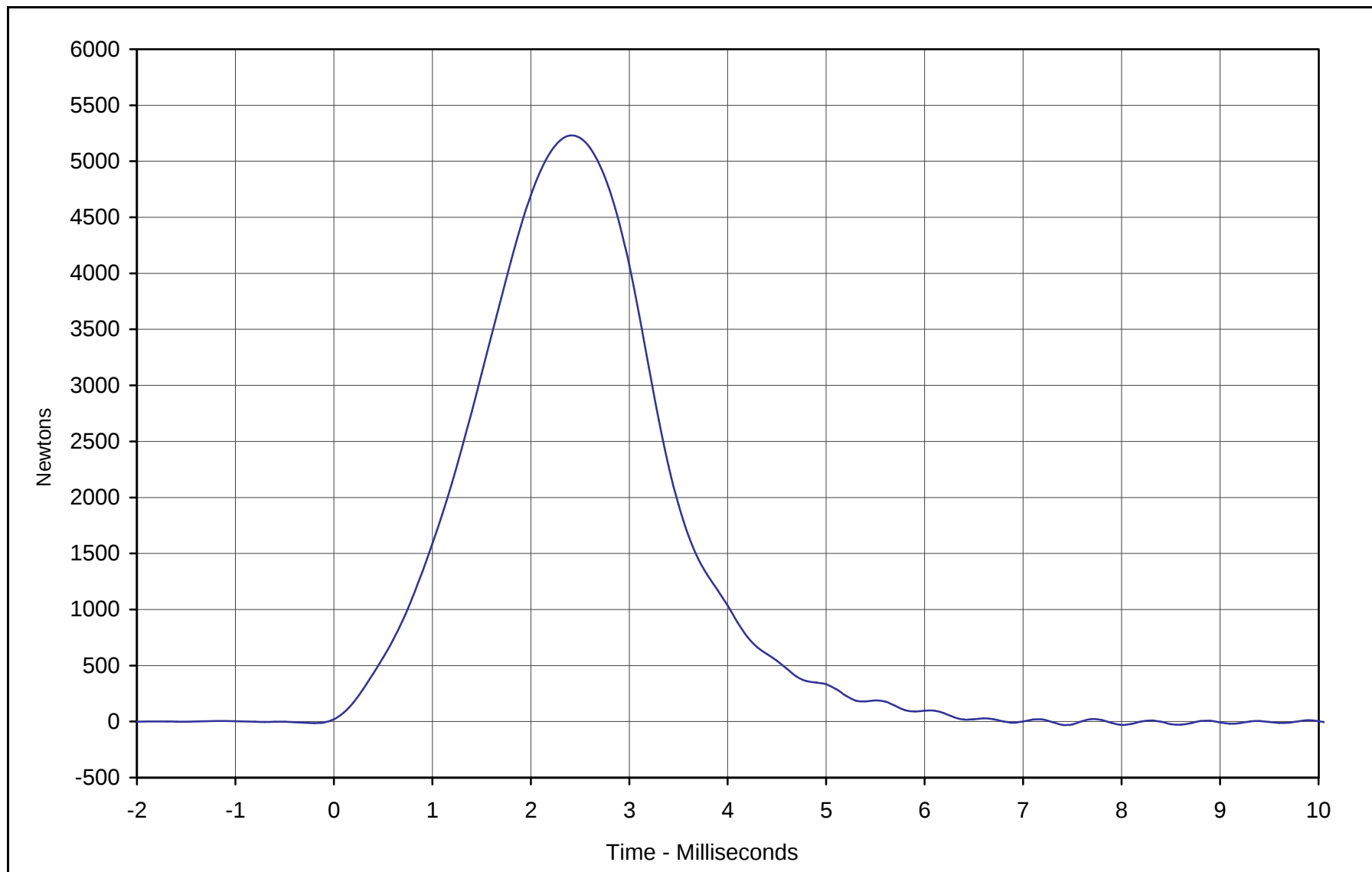
Test I.D.: RK10B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	N	4715 to 5782	5566	Pass
Overall Test Results				Pass

Laboratory Technician

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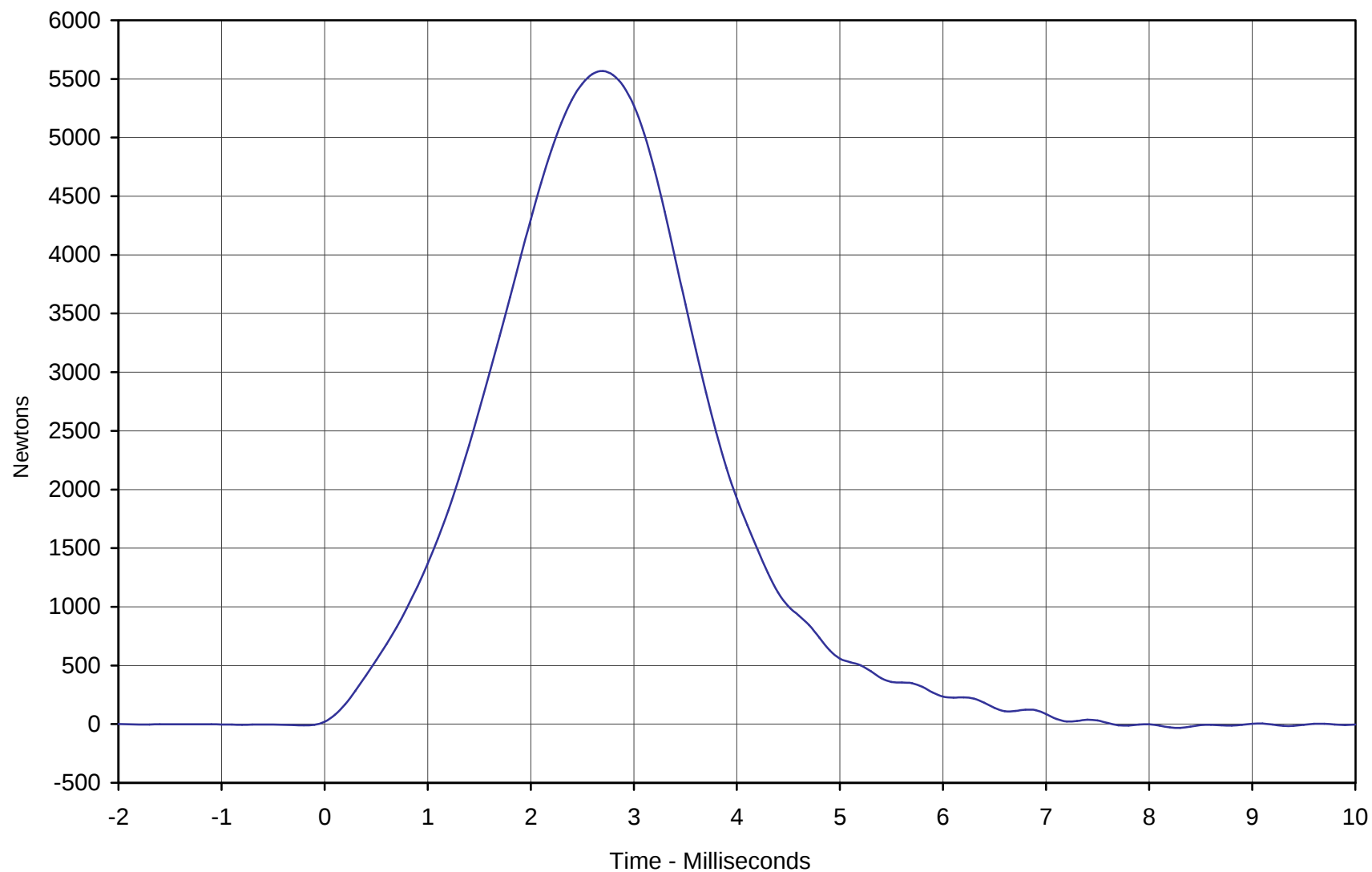
Test Date



Curve Description: Probe Force
Maximum Value: 5229.9 at 2.4 Milliseconds
Minimum Value: -29.5 at 8.0 Milliseconds
SAE Filter Class: 600
Date of Test: 12/10/01
ATD Serial No.: 035

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Left Knee Test I.D.: LK10A





Curve Description: Probe Force
Maximum Value: 5566.0 at 2.7 Milliseconds
Minimum Value: -12.9 at 7.8 Milliseconds
SAE Filter Class: 600
Date of Test: 12/10/01
ATD Serial No.: 035

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Right Knee Test I.D.: RK10B





Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Slider Test

ATD Serial No.: 035

Location: Left Knee

Test I.D.: LS07D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.73	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.69	Pass
	18 mm	kN	2.27 to 3.096	2.95	Pass
Overall Test Results					Pass

ATD Serial No.: 035

Location: Right Knee

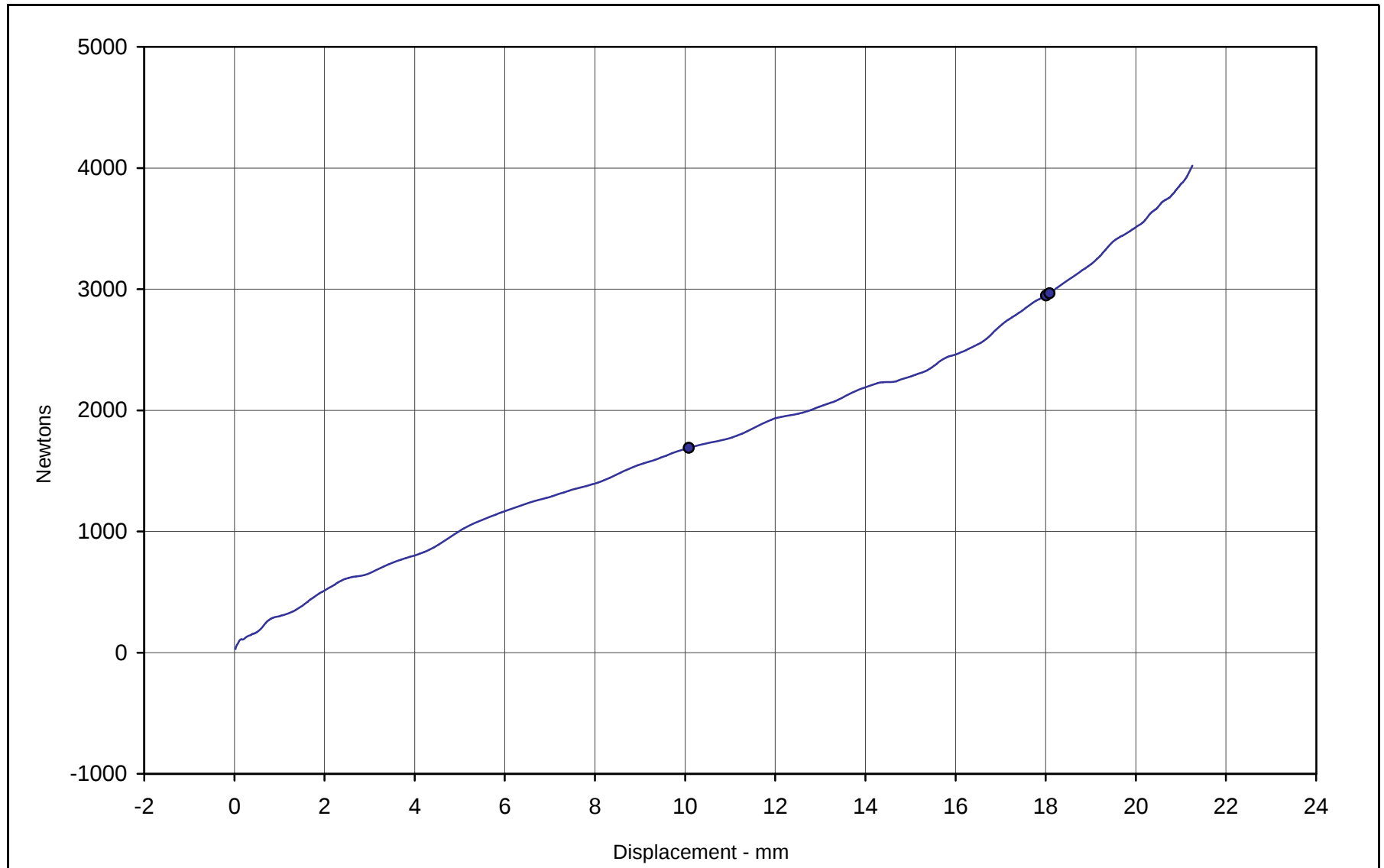
Test I.D.: LS07C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.78	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.55	Pass
	18 mm	kN	2.27 to 3.096	2.93	Pass
Overall Test Results					Pass

Laboratory Technician

December 10, 2001

Test Date



Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1689 at 10.0 mm

Femur Force: 2948 at 18.0 mm

SAE Filter Class: 600

Date of Test: 12/10/01

ATD Serial No.: 035

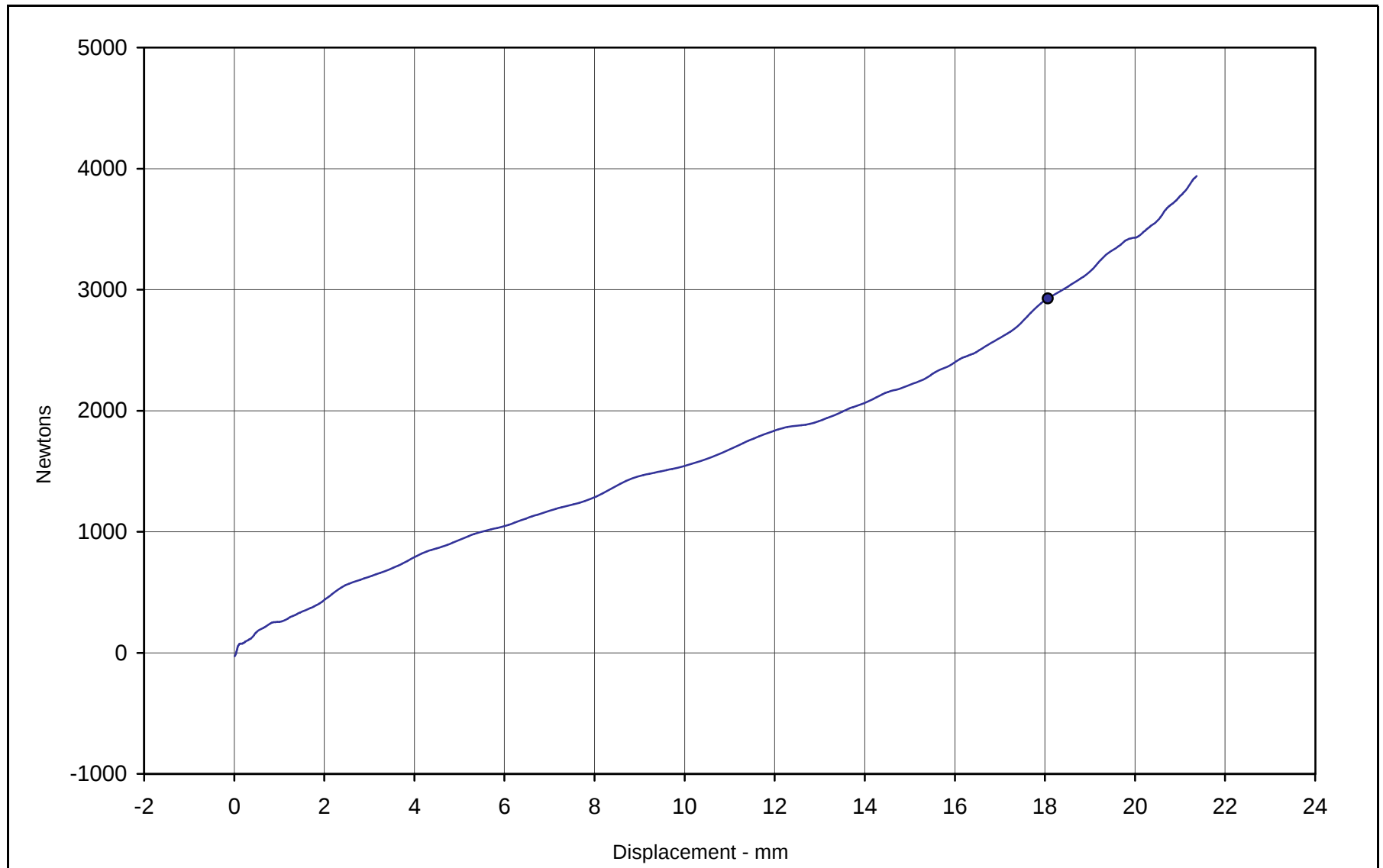
Test Program:

Hybrid III Knee Shear Test

Test Information:

Location: Left Knee Test I.D.: LS07D





Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1554 at 10.0 mm

Femur Force: 2928 at 18.0 mm

SAE Filter Class: 600

Date of Test: 11/28/01

ATD Serial No.: 035

Test Program:

Hybrid III Knee Shear Test

Test Information:

Location: Right Knee Test I.D.: LS07C





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 035

Part Serial No.: N/A

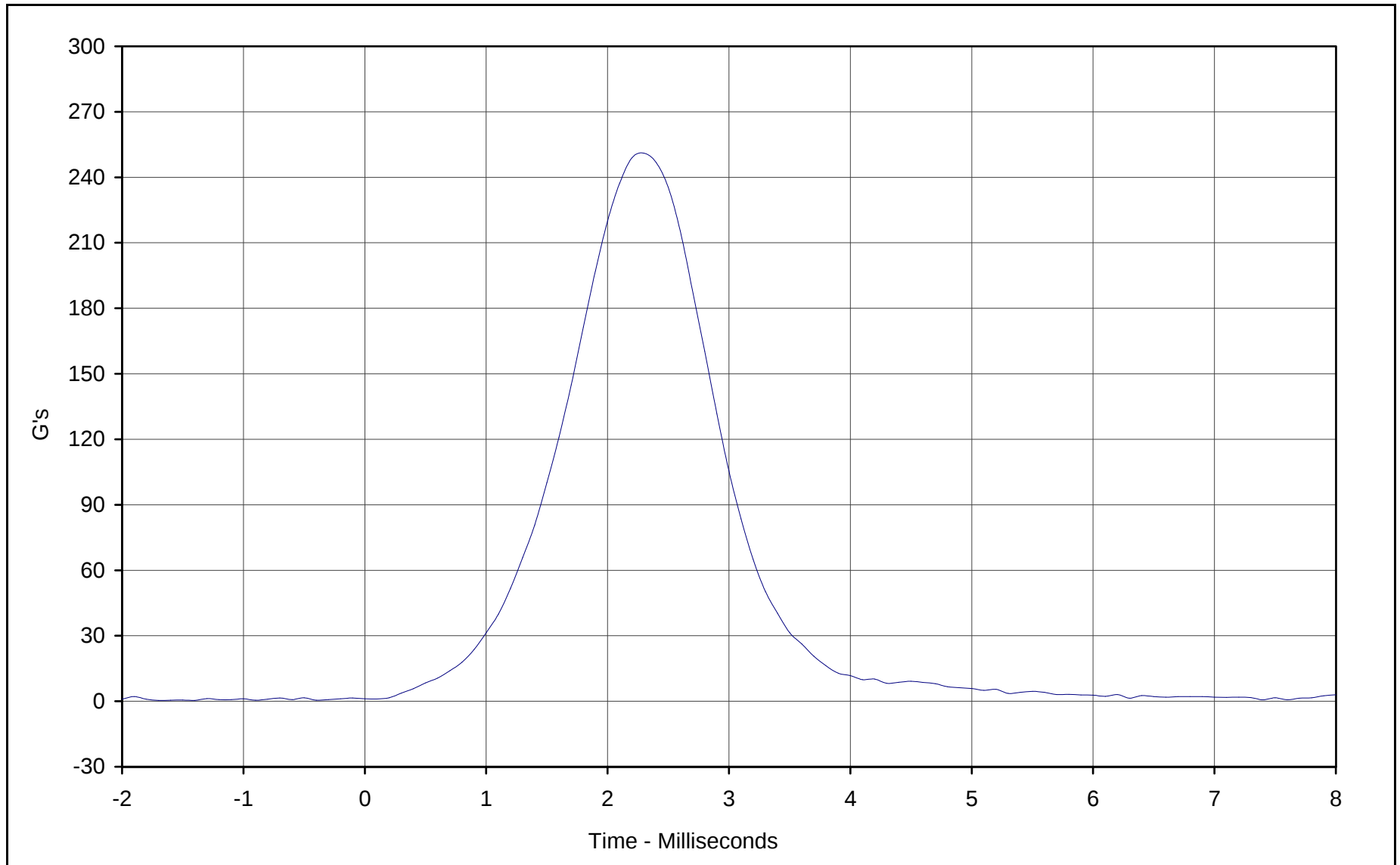
Test I.D.: HD10A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	251.0	Pass
Peak Lateral Acceleration	G's	≤15.0	3.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

December 10, 2001

Test Date



Curve Description: Head Resultant Acceleration

Maximum Value: 251.0 at 2.3 Milliseconds

Minimum Value: 0.4 at -1.7 Milliseconds

SAE Filter Class: 1000

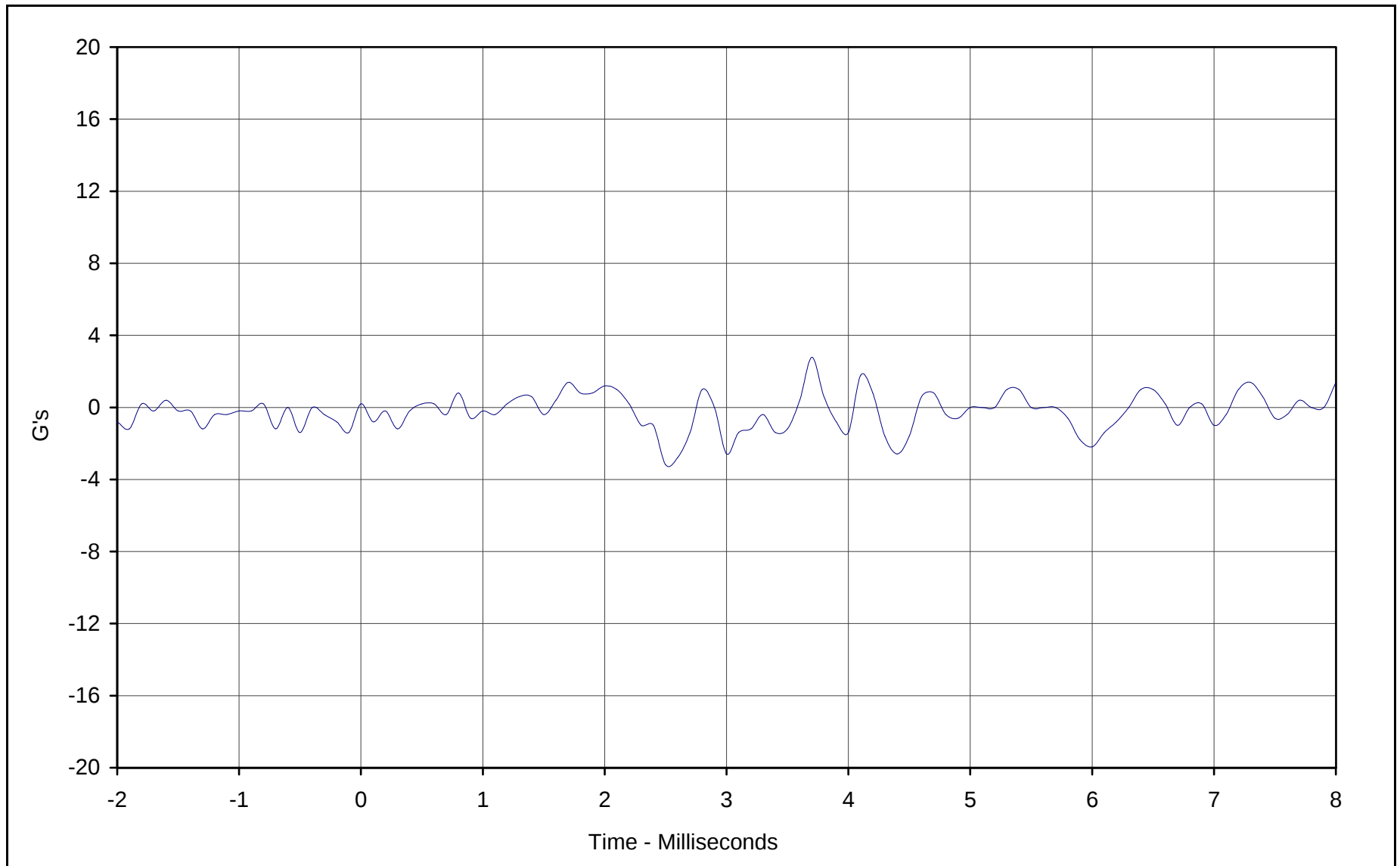
Date of Test: 12/10/01

ATD Serial No.: 035

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD10A





Curve Description: Head Acceleration Y Axis

Maximum Value:	2.8	at	3.7	Milliseconds
Minimum Value:	-3.2	at	2.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	12/10/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD10A





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Part Serial No.: N/A

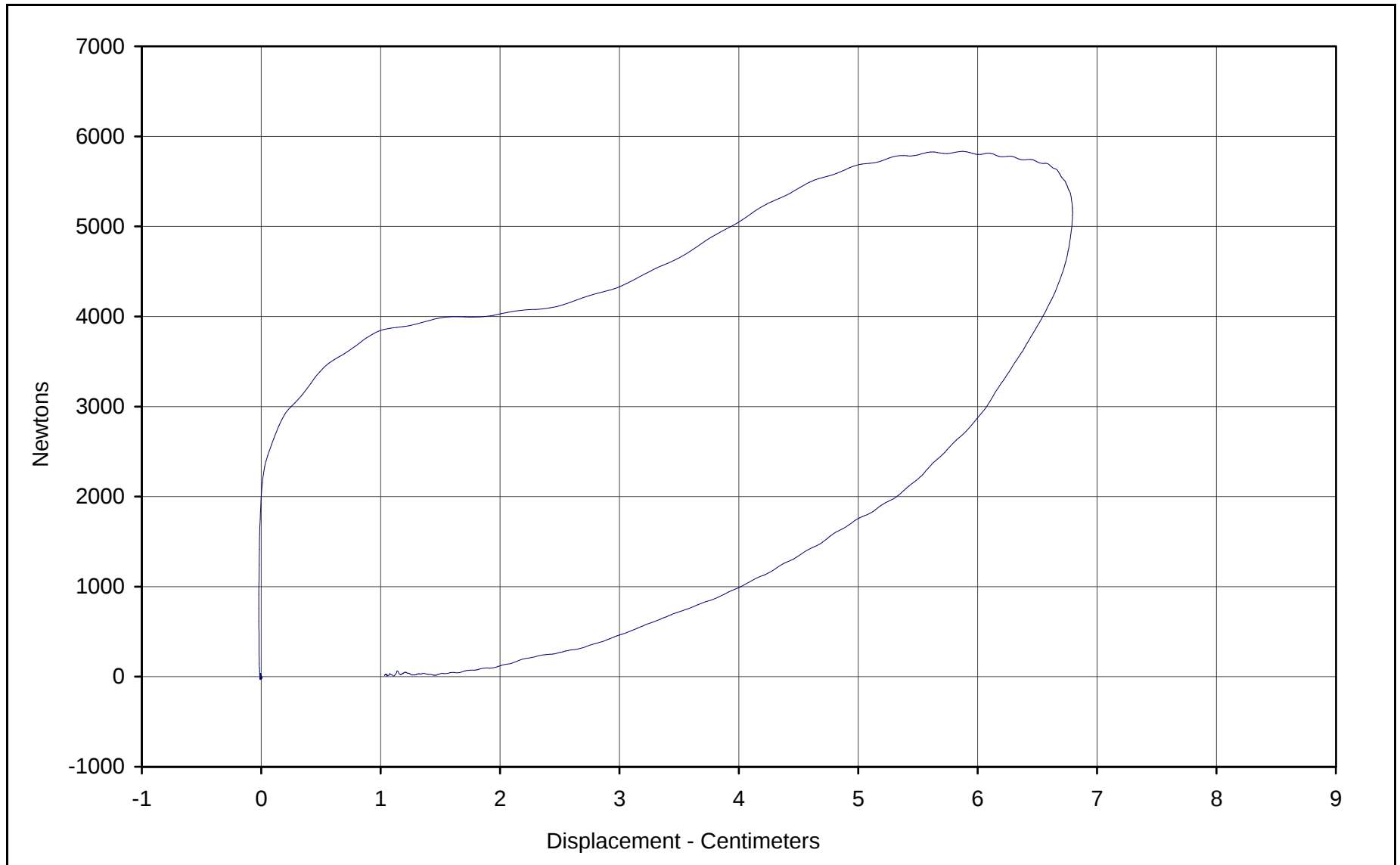
Test I.D.: CH11D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5833	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.79	Pass
Internal Hysteresis	%	69 to 85	76.0	Pass
Overall Test Results				Pass

Laboratory Technician

December 11, 2001

Test Date



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 5832.9 Newtons

Chest Displ.: 6.79 Centimeters

SAE Filter Class: 180

Date of Test: 12/11/01

ATD Serial No.: 035

Testing Program: Hybrid III Thorax Impact Test

Test Information: S/N of Part: N/A Test I.D.: CH11D





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: NF11C

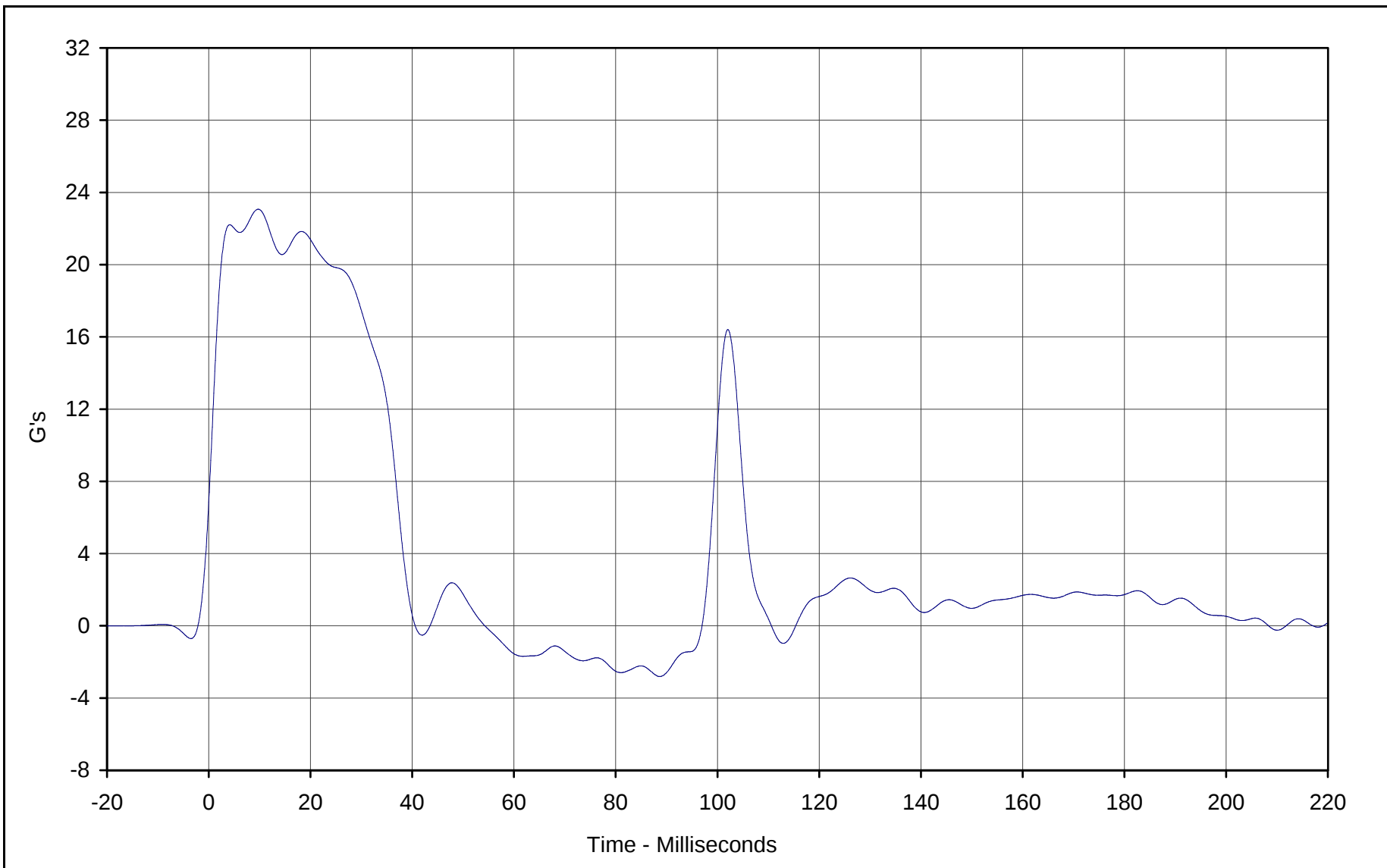
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.89	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	21.4	Pass
	30 Msec.	G's	12.5 to 18.5	17.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	65.2	Pass
	Time	Msec.	57.0 to 64.0	57.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.9	Pass
Moment About Occipital Condyle	Maximum	N•m	84.1 to 108.5	89.0	Pass
	Time	Msec.	47.0 to 58.0	51.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	99.0	Pass
Overall Test Results					Pass

Laboratory Technician

December 11, 2001

Test Date

E-35

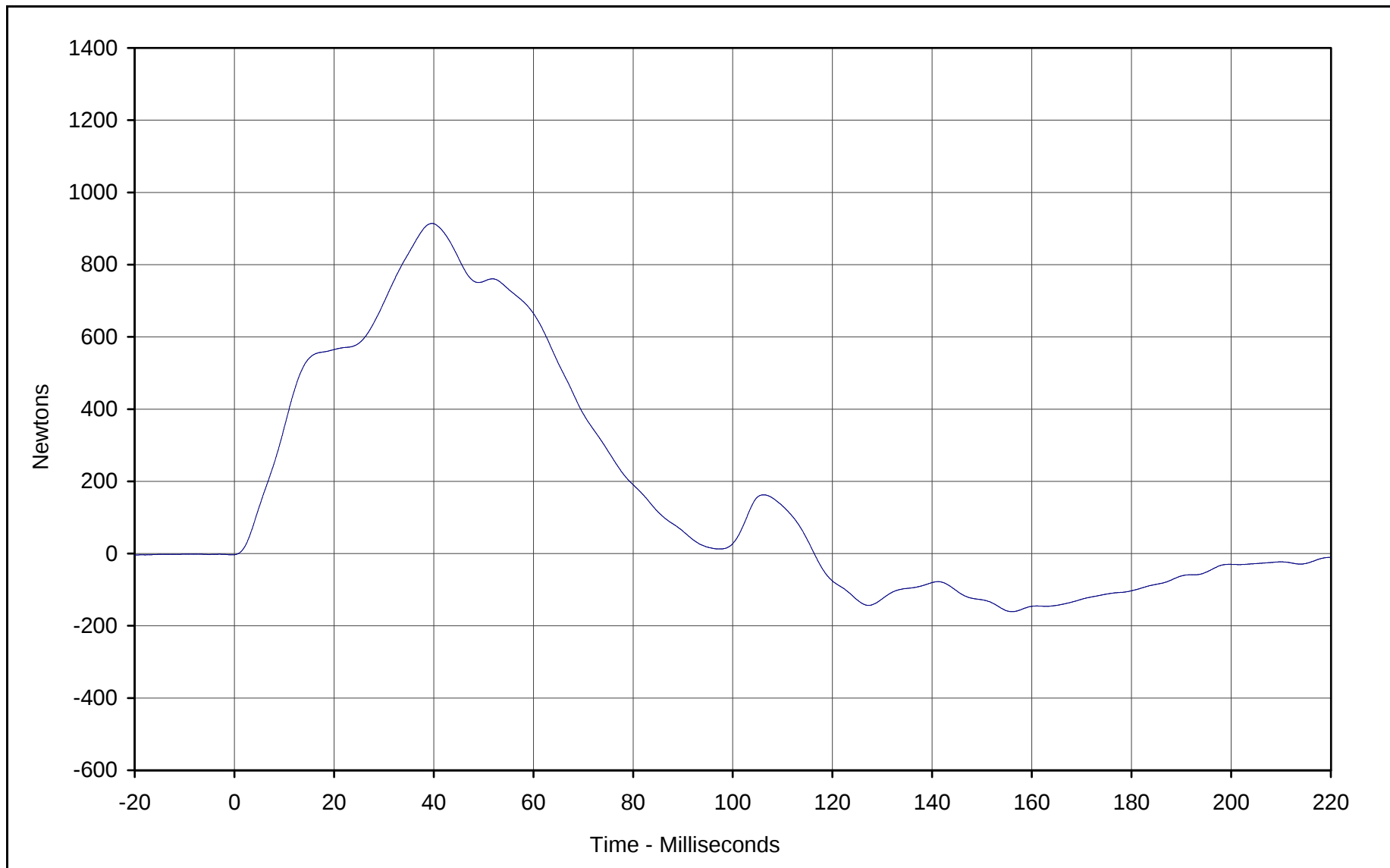


Curve Description:	Pendulum Deceleration		
Maximum Value:	23.1	at	9.7 Milliseconds
Minimum Value:	-2.8	at	88.7 Milliseconds
SAE Filter Class:	60		
Date of Test:	12/11/01		
ATD Serial No.:	035		

Testing Program:	Hybrid III Neck Flexion Test (Male)
Test Information:	S/N of Part: N/A Test I.D.: NF11C



KAR22001-02



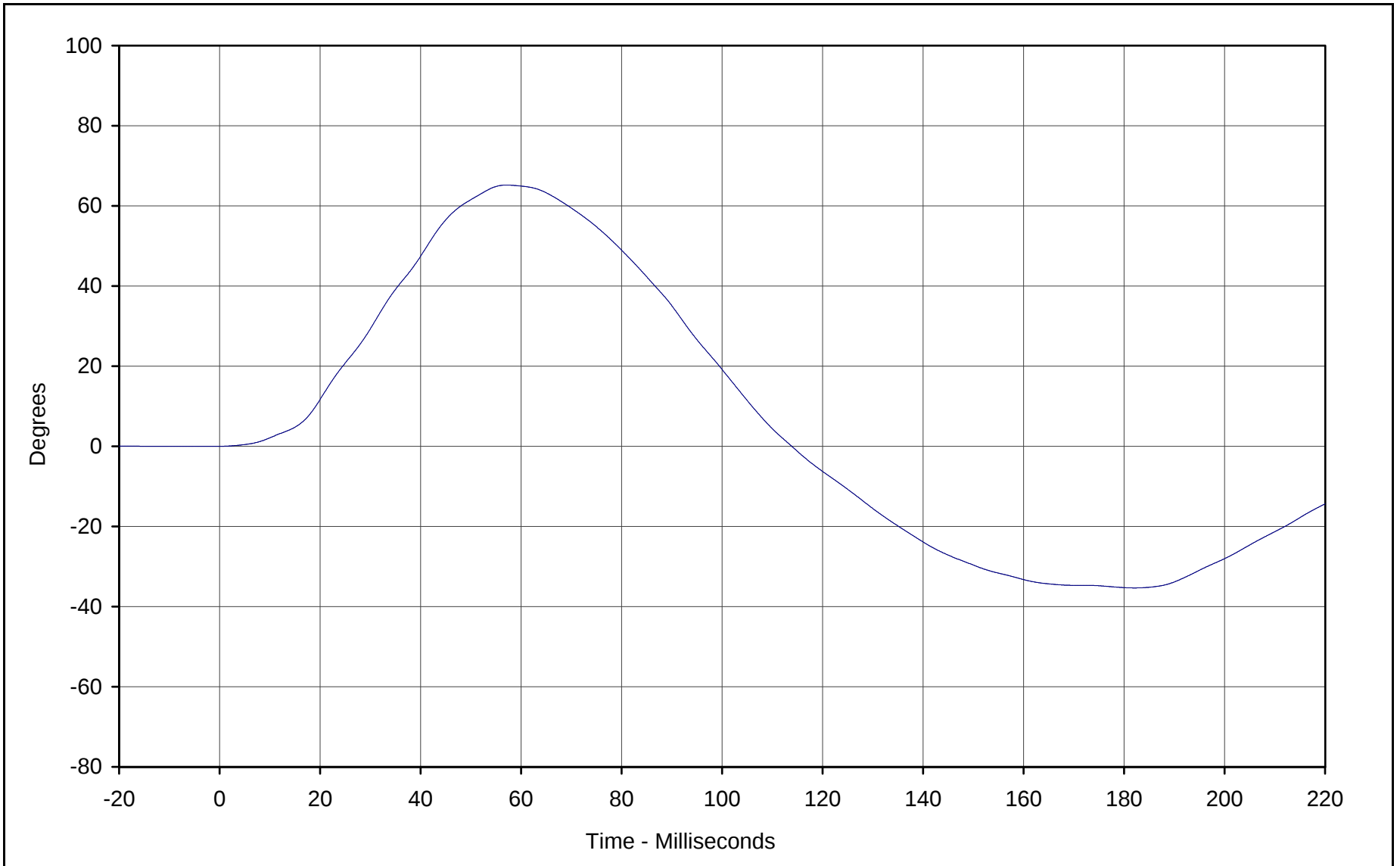
Curve Description: Neck Force X

Maximum Value:	914.1	at	39.6	Milliseconds
Minimum Value:	-160.8	at	156.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11C





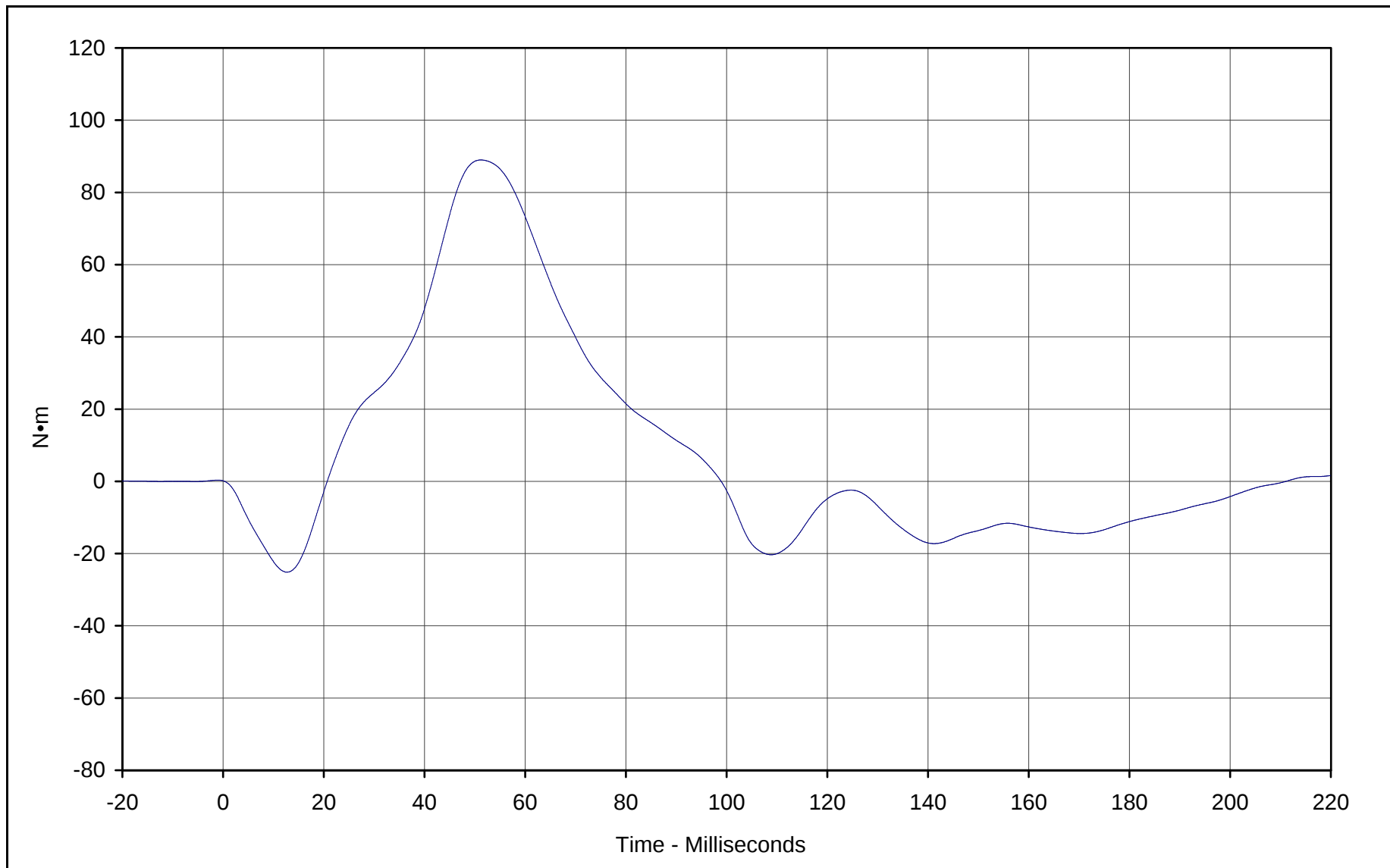
Curve Description: "D" Plane Rotation

Maximum Value:	65.2	at	57.1	Milliseconds
Minimum Value:	-35.3	at	182.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11C





Curve Description: Moment About Occipital Condyles

Maximum Value: 89.0 at 51.2 Milliseconds

Minimum Value: -25.2 at 12.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/01

ATD Serial No.: 035

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF11C





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: NE11D

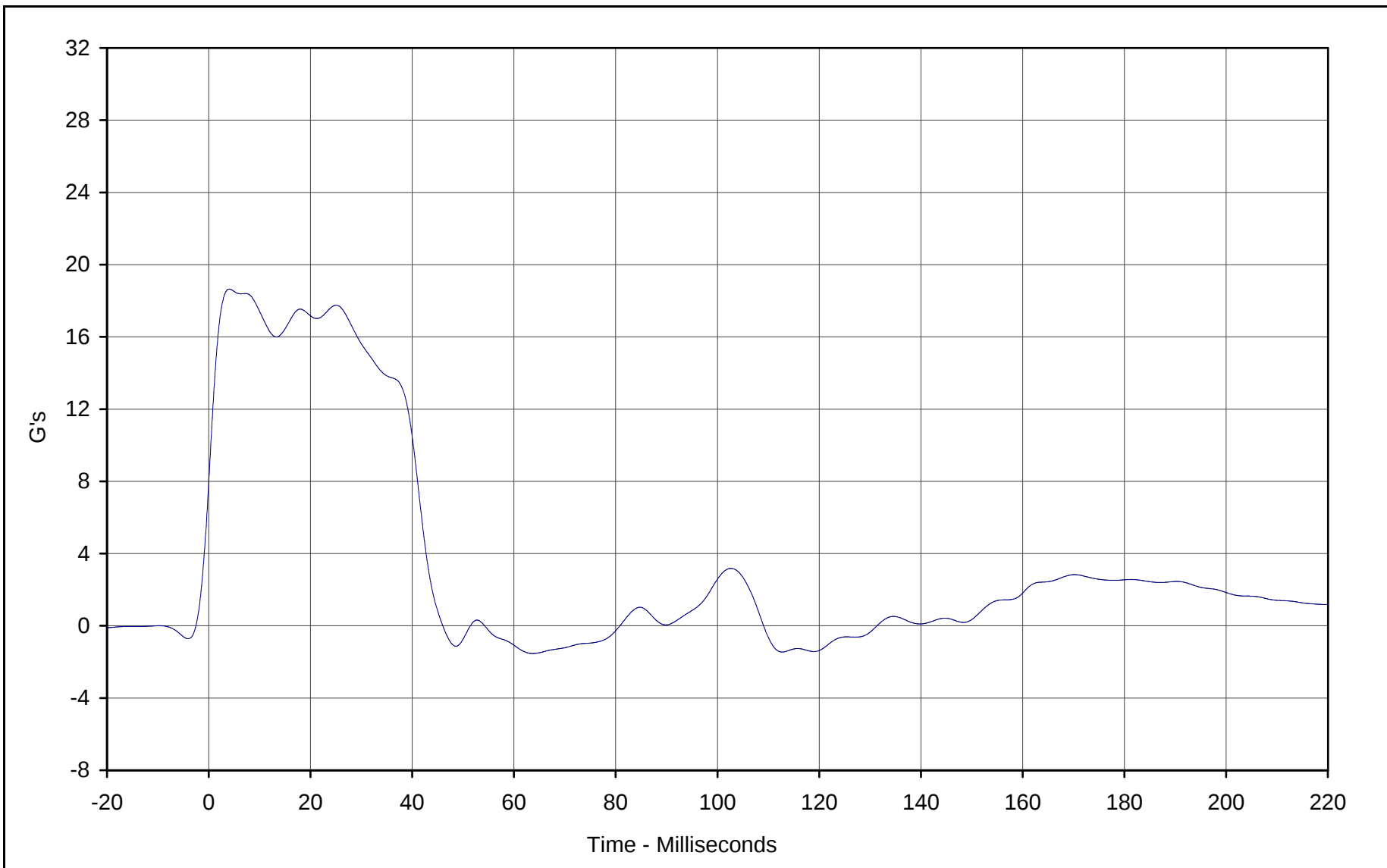
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.05	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.2	Pass
	30 Msec.	G's	11.0 to 16.0	15.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.3	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	100.6	Pass
	Time	Msec.	72.0 to 82.0	78.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	157.1	Pass
Moment About Occipital Condyle	Maximum	N•m	-52.9 to- 79.9	-73.0	Pass
	Time	Msec.	65.0 to 79.0	70.7	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	138.7	Pass
Overall Test Results					Pass

Laboratory Technician

December 11, 2001

Test Date

E-40



Curve Description: Pendulum Deceleration

Maximum Value:	<u>18.6</u>	at	<u>4.0</u>	Milliseconds
Minimum Value:	<u>-1.5</u>	at	<u>63.7</u>	Milliseconds
SAE Filter Class:	<u>60</u>			
Date of Test:	<u>12/11/01</u>			
ATD Serial No.:	<u>035</u>			

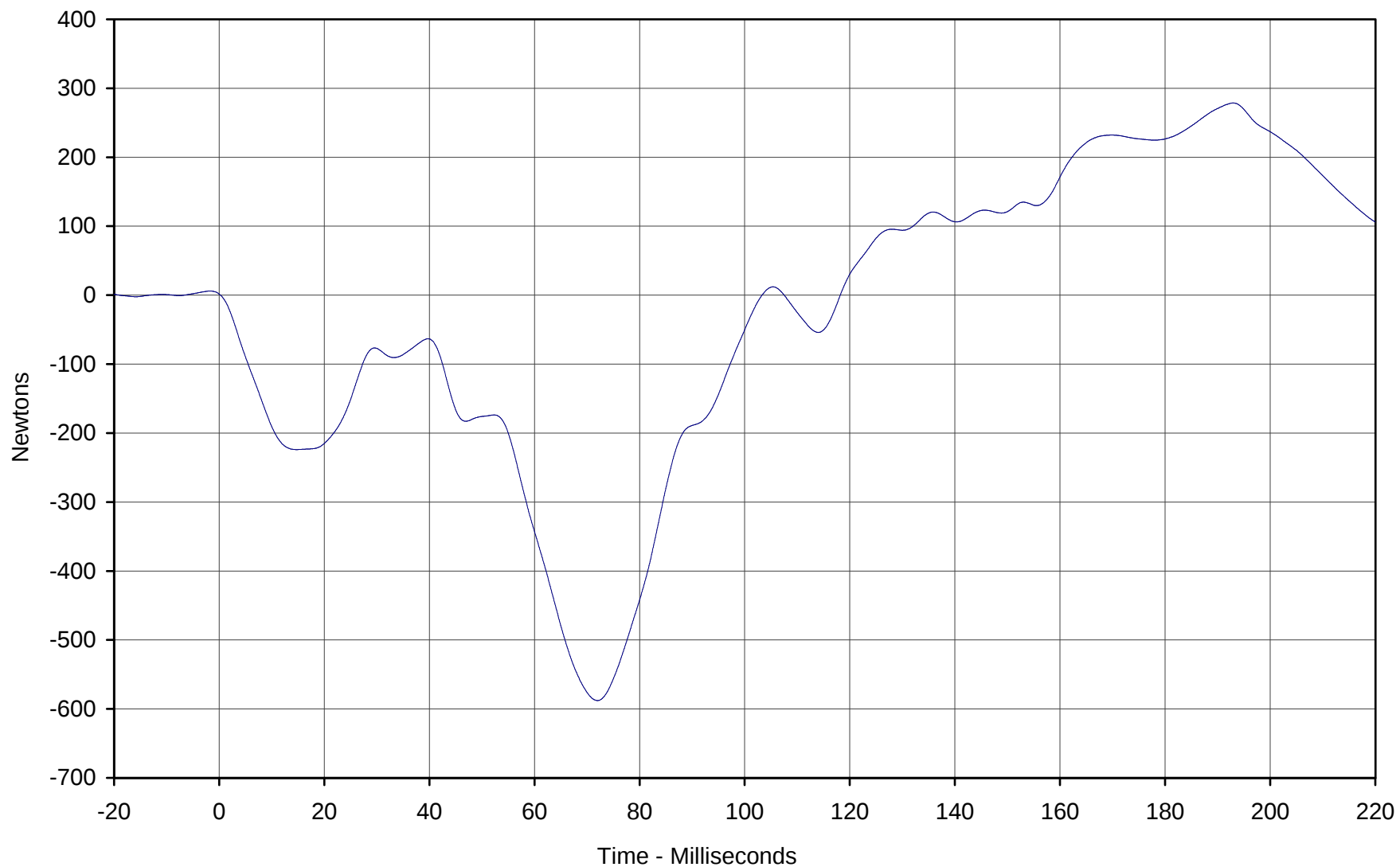
Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11D



KAR22001-02

E-41



Curve Description: Neck Force X

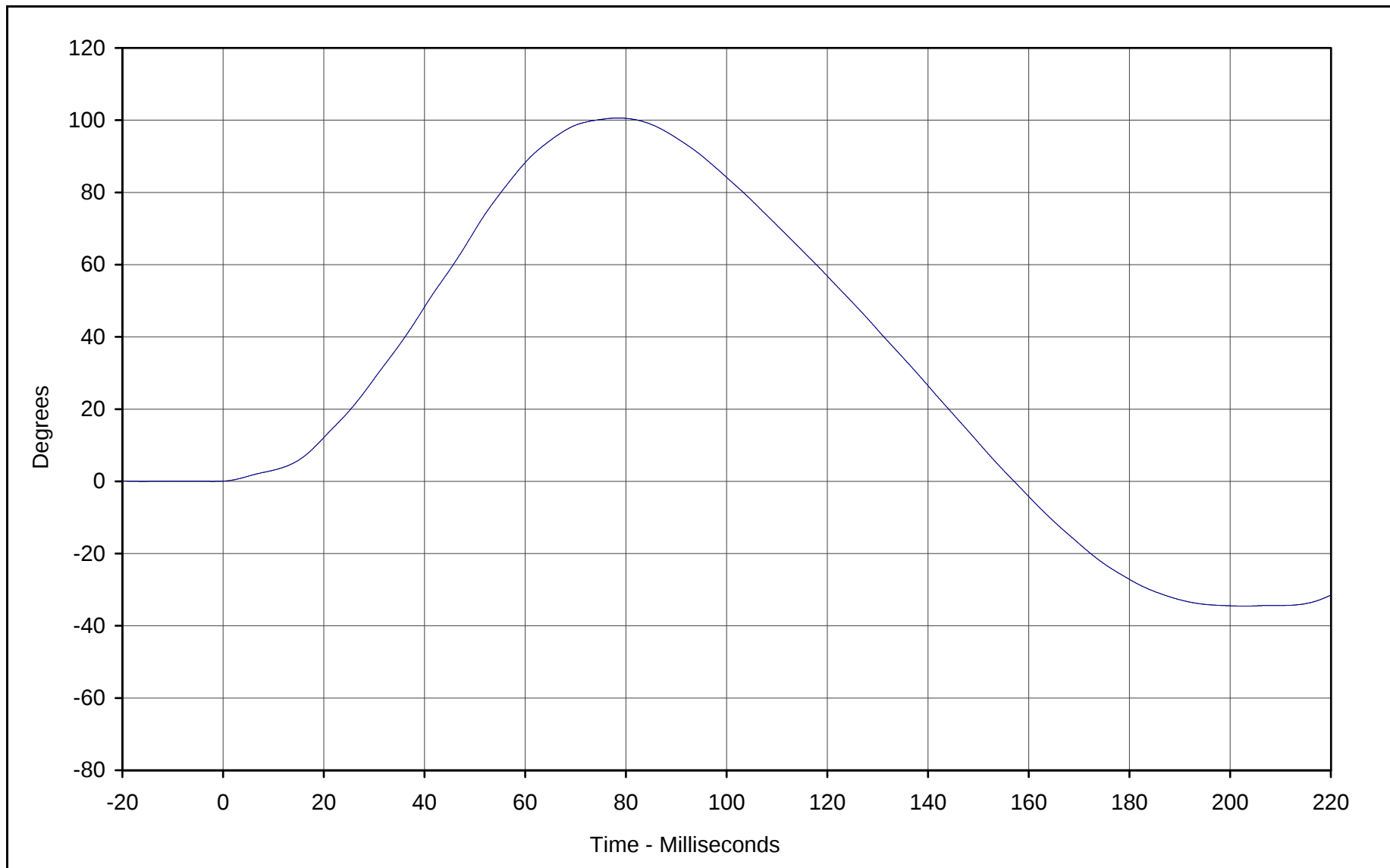
Maximum Value:	278.6	at	193.0	Milliseconds
Minimum Value:	-587.9	at	72.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11D



KAR22001-02



Curve Description: "D" Plane Rotation

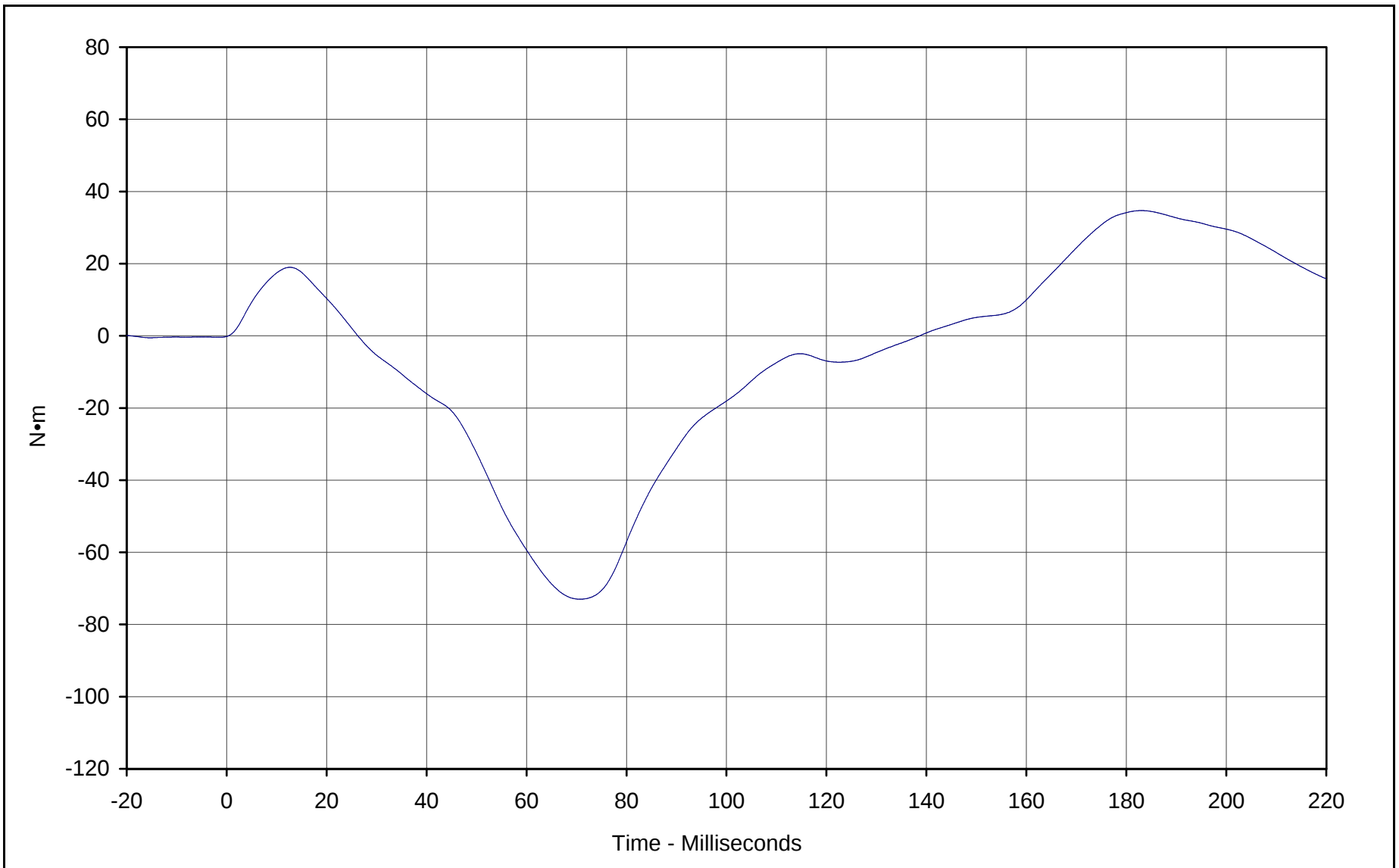
Maximum Value:	100.6	at	78.4	Milliseconds
Minimum Value:	-34.6	at	202.8	Milliseconds
SAE Filter Class:	60			
Date of Test:	12/11/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE11D



E-43



Curve Description: Moment About Occipital Condyles
Maximum Value: 34.7 at 183.0 Milliseconds
Minimum Value: -73.0 at 70.7 Milliseconds
SAE Filter Class: 60
Date of Test: 12/11/01
ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)
Test Information: S/N of Part: N/A Test I.D.: NE11D



KAR22001-02



Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	195	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	440	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	460	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	255	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	980	Pass
Z - Waist circumference	mm	836 to 866	845	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Laboratory Technician

December 11, 2001

Test Date

APPENDIX F

VEHICLE OWNER'S MANUAL

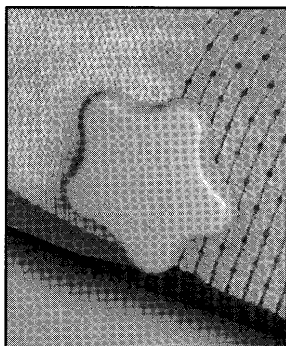
OCCUPANT RESTRAINT INSTRUCTIONS

Section 1 Seats and Restraint Systems

Here you'll find information about the seats in your vehicle and how to use your safety belts properly. You can also learn about some things you should *not* do with air bags and safety belts.

1-2	Seats and Seat Controls	1-36	Rear Safety Belt Comfort Guides for Children and Small Adults (4-Door Models)
1-10	Safety Belts: They're for Everyone	1-38	Center Rear Passenger Position (4-Door Models)
1-15	Here Are Questions Many People Ask About Safety Belts -- and the Answers	1-40	Children
1-16	How to Wear Safety Belts Properly	1-43	Restraint Systems for Children
1-16	Driver Position	1-55	Older Children
1-22	Safety Belt Use During Pregnancy	1-58	Safety Belt Extender
1-23	Right Front Passenger Position	1-58	Checking Your Restraint Systems
1-23	Air Bag System	1-59	Replacing Restraint System Parts After a Crash
1-31	Center Front Passenger Position (Four-Door Models with Front Bench Seat)		
1-32	Rear Seat Passengers		

Manual Lumbar Support (If Equipped)

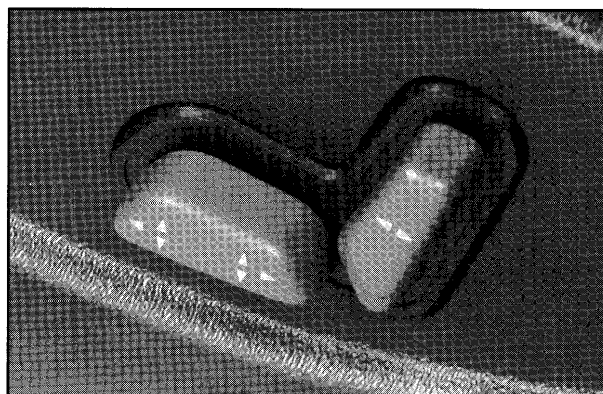


If your vehicle has this feature, there will be a knob on the outboard side of the driver's bucket seat.

Turn the knob counterclockwise to increase lumbar support and clockwise to decrease lumbar support.

Power Seats (If Equipped)

If your vehicle has this feature, there will be a control pad on the outboard side of your seat.



Horizontal Control: Raise or lower the front of the seat by raising or lowering the forward edge of the control.

Raise or lower the rear of the seat by raising or lowering the rear edge of the control. Move the seat forward or rearward by moving the whole control toward the front or the rear of the vehicle.

Moving the whole control up or down raises or lowers the whole seat.

Vertical Control: Move the reclining front seatback forward or rearward by moving the control toward the front or rear of the vehicle.

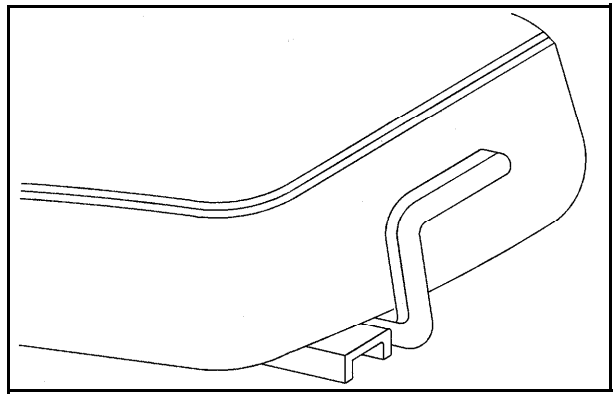
Seats and Seat Controls

This section tells you about the seats -- how to adjust them, and fold them up and down.

Manual Front Seat

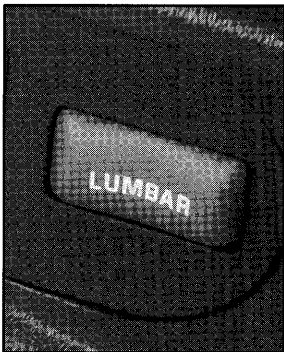
CAUTION:

You can lose control of the vehicle if you try to adjust a manual driver's seat while the vehicle is moving. The sudden movement could startle and confuse you, or make you push a pedal when you don't want to. Adjust the driver's seat only when the vehicle is not moving.



1-2

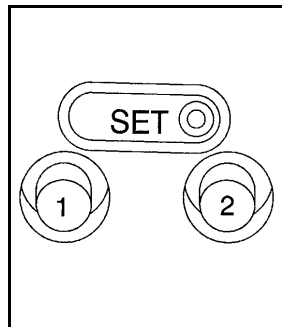
Power Lumbar Control (If Equipped)



If your vehicle has this feature, it is located on the outboard side of the seat(s).

Press and hold the front of the control until you have the desired lumbar support. To decrease lumbar support, press and hold the rear of the control.

Memory Seat (If Equipped)



If your vehicle has this feature, the control located on the outboard side of the driver's seat looks like this.

Use this memory function to save your seat cushion and seatback settings by using the following procedure:

1. Adjust the driver's seat to a safe and comfortable driving position.
2. Press the SET button and then press and hold button 1 (for driver 1) for three seconds. A chime will sound to let you know that the position has been stored.

A second seating and mirror position can be programmed by repeating the procedure with a second driver and pressing button 2 for three seconds. Each time button 1 or 2 is pressed and released while the vehicle is in **PARK (P)**, the memory position will be recalled. Each time a memory button is pressed, a single chime will sound.

1-4

3. To program your keyless entry transmitter, if equipped, press the UNLOCK button within five seconds of programming the memory button. You will hear a chime to confirm programming of the transmitter.

When your vehicle is in PARK (P) for an automatic transmission or the parking brake is engaged for a manual transmission, press and release the numbered memory button you just stored. The seat will move to the set position. You will hear one chime.

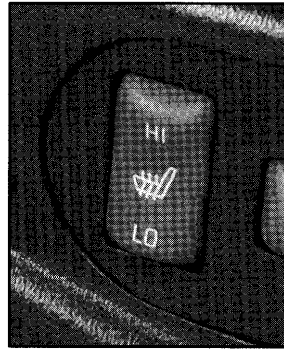
Pressing the UNLOCK button of a keyless entry transmitter will adjust the seat to the corresponding stored memory position. You will hear one chime.

Repeat Steps 1 and 2 to readjust the seat. The transmitter need not be reprogrammed unless it needs to correspond to the other numbered memory button.

If there is a third driver, use the seat adjuster switch to adjust the seat. Pressing any of the seat adjuster switches, the SET button or pressing the desired memory button twice will cause the seat to stop moving.

If you press the numbered button to adjust the seat and start the vehicle while the seat is still adjusting, adjustment will pause while the ignition is in START. Adjustment will resume after the ignition is in RUN.

Heated Front Seats (If Equipped)



If your vehicle has this feature, the controls are located on the outboard side of the seats.

This feature will quickly heat the lower cushion and lower back of the driver's and front passenger's seats for added comfort.

Press the lower part of the switch to turn the heater on low. Press the upper part of the switch to turn the heater on high. Put the switch in the center position to turn the heater off.

The passenger's safety belt must be engaged for the heated seat feature to work on the passenger's seat.

CAUTION:

Sitting in a reclined position when your vehicle is in motion can be dangerous. Even if you buckle up, your safety belts can't do their job when you're reclined like this.

The shoulder belt can't do its job because it won't be against your body. Instead, it will be in front of you. In a crash you could go into it, receiving neck or other injuries.

The lap belt can't do its job either. In a crash the belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.

For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear your safety belt properly.

Head Restraints



Head restraints are fixed on some models and adjustable on others. Slide an adjustable head restraint up or down so that the top of the restraint is closest to the top of your head. This position reduces the chance of a neck injury in a crash.

Reclining Front Seatbacks



To adjust a manual seatback, lift the lever on the outboard side of the seat.

Release the lever to lock the seatback where you want it. Pull up on the lever and without pushing on the seatback the seat will go to an upright position.

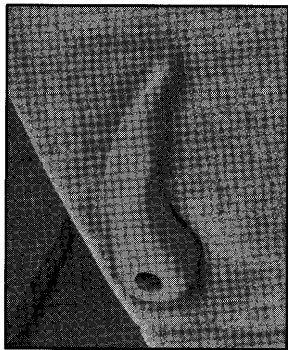
If your vehicle is equipped with the vertical power seat control described earlier, it allows the seatback to recline also.



But don't have a seatback reclined if your vehicle is moving.

Seatback Latches

The front seatbacks fold forward to let people get into the back seat or to access the storage area behind the seat.



To fold a front seatback forward, move the lever located on the side of the seat rearward and pull the seatback forward.

To return the seatback to the upright position, push the seatback all the way back until the latch catches. If the seatback was reclined before being folded forward, it will return to the reclined position.

CAUTION:

If the seatback isn't locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always press rearward on the seatback to be sure it is locked.

Easy Entry Seat (2-Door Models)

The right front seat of your vehicle makes it easy to get in and out of the rear seat.

1. Tilt the right front seatback completely forward and the whole seat will slide forward.
2. Move the seatback to its original position after someone gets into the rear seat area. Then move the seat rearward until it locks.

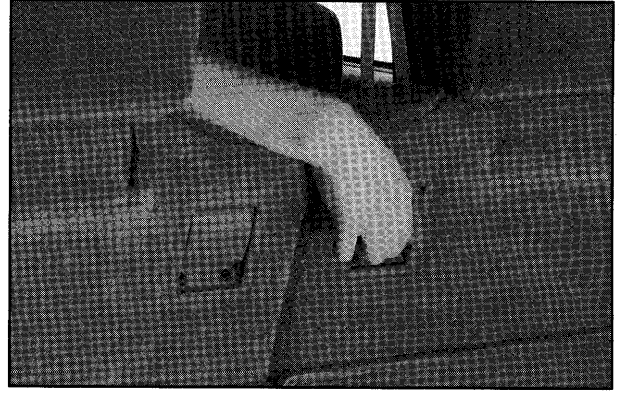
CAUTION:

If an easy entry right front seat isn't locked, it can move. In a sudden stop or crash, the person sitting there could be injured. After you've used it, be sure to push rearward on an easy entry seat to be sure it is locked.

Tilt the seatback completely forward and slide the whole seat forward again to get out of the rear seat.

Rear Seats

Your vehicle has a folding rear seat which lets you fold the seatbacks down for more cargo space.



The rear seat release handles are located on the rear of the seatbacks. Push back on the seatbacks as you pull up on the handles. The head restraint will automatically fold out of the way when the seatback is folded down.

To raise the seatbacks, just lift up the seatbacks and push until they lock in the upright position. Push and pull on the seatbacks to check that the latches have locked in the upright position. If they haven't, see your dealer for service.

1-9

CAUTION:

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.



Your vehicle has a light that comes on as a reminder to buckle up. See "Safety Belt Reminder Light" in the Index.

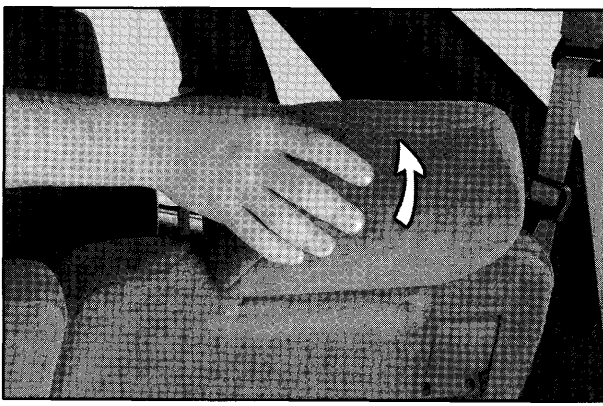
In most states and Canadian provinces, the law says to wear safety belts. Here's why: *They work.*

You never know if you'll be in a crash. If you do have a crash, you don't know if it will be a bad one.

A few crashes are mild, and some crashes can be so serious that even buckled up a person wouldn't survive. But most crashes are in between. In many of them, people who buckle up can survive and sometimes walk away. Without belts they could have been badly hurt or killed.

After more than 30 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter . . . a lot!

1-11



To return the head restraints to the upright position, reach behind the seats and pull the head restraint up until it locks into position.

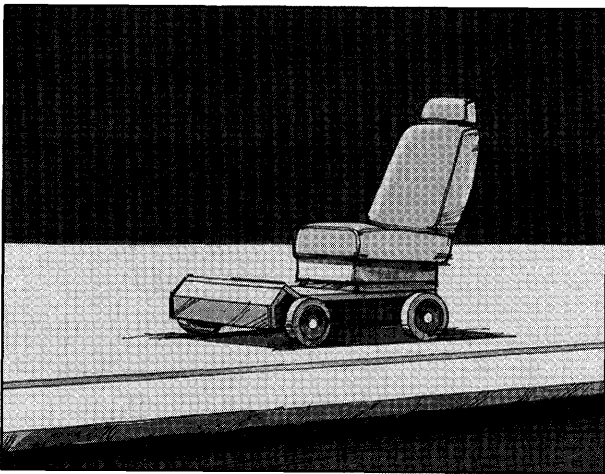
On two-door models with an inside mounted spare tire, the driver's side rear seat head restraint must be lifted and held upright as the seatback is raised. Otherwise, the head restraint will hit the spare tire and prevent the seatback from properly latching.

Push and pull on the head restraints to check that they have locked in the upright position. If they haven't, see your dealer for service.

1-10

Why Safety Belts Work

When you ride in or on anything, you go as fast as it goes.



Take the simplest vehicle. Suppose it's just a seat on wheels.

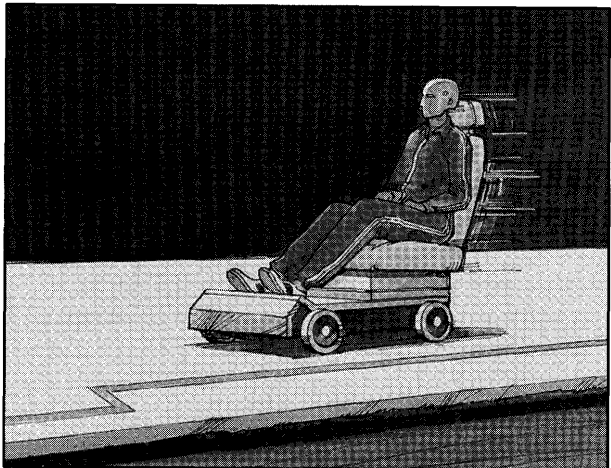
Safety Belts: They're for Everyone

This part of the manual tells you how to use safety belts properly. It also tells you some things you should not do with safety belts.

And it explains the air bag system.

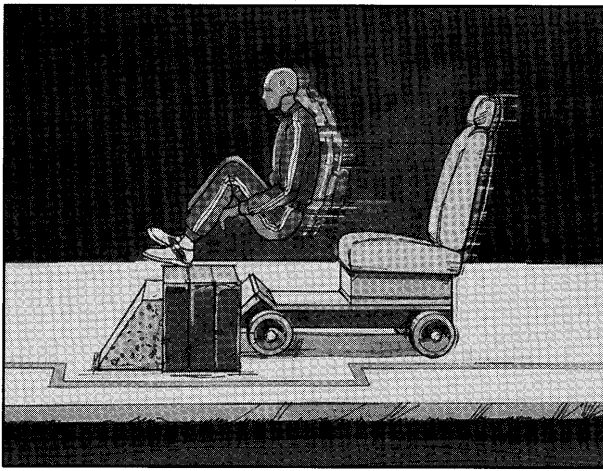
CAUTION:

Don't let anyone ride where he or she can't wear a safety belt properly. If you are in a crash and you're not wearing a safety belt, your injuries can be much worse. You can hit things inside the vehicle or be ejected from it. You can be seriously injured or killed. In the same crash, you might not be if you are buckled up. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.



Put someone on it.

1-12



Get it up to speed. Then stop the vehicle. The rider doesn't stop.



The person keeps going until stopped by something. In a real vehicle, it could be the windshield . . .

1-13

Here Are Questions Many People Ask About Safety Belts -- and the Answers

Q: Won't I be trapped in the vehicle after an accident if I'm wearing a safety belt?

A: You *could* be -- whether you're wearing a safety belt or not. But you can unbuckle a safety belt, even if you're upside down. And your chance of being conscious during and after an accident, so you *can* unbuckle and get out, is *much* greater if you are belted.

Q: If my vehicle has air bags, why should I have to wear safety belts?

A: Air bags are in many vehicles today and will be in most of them in the future. But they are supplemental systems only; so they work *with* safety belts -- not instead of them. Every air bag system ever offered for sale has required the use of safety belts. Even if you're in a vehicle that has air bags, you still have to buckle up to get the most protection. That's true not only in frontal collisions, but especially in side and other collisions.

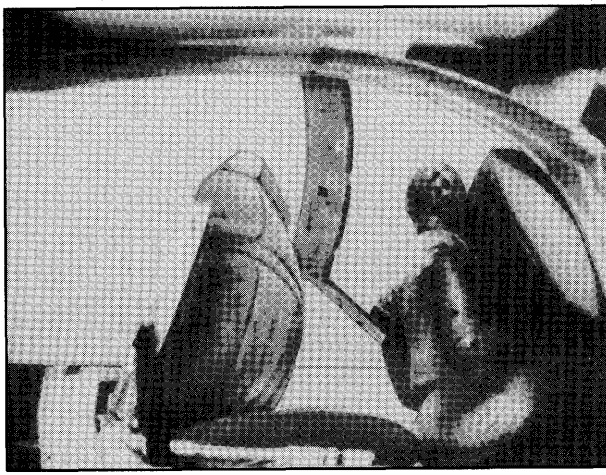
Q: If I'm a good driver, and I never drive far from home, why should I wear safety belts?

A: You may be an excellent driver, but if you're in an accident -- even one that isn't your fault -- you and your passengers can be hurt. Being a good driver doesn't protect you from things beyond your control, such as bad drivers.

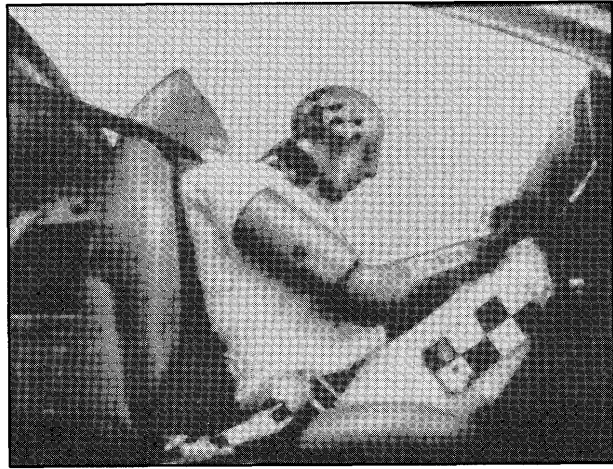
Most accidents occur within 25 miles (40 km) of home. And the greatest number of serious injuries and deaths occur at speeds of less than 40 mph (65 km/h).

Safety belts are for everyone.

1-15



or the instrument panel . . .



or the safety belts!

With safety belts, you slow down as the vehicle does. You get more time to stop. You stop over more distance, and your strongest bones take the forces. That's why safety belts make such good sense.

I-14

How to Wear Safety Belts Properly

Adults

This part is only for people of adult size.

Be aware that there are special things to know about safety belts and children. And there are different rules for smaller children and babies. If a child will be riding in your vehicle, see the part of this manual called "Children." Follow those rules for everyone's protection.

First, you'll want to know which restraint systems your vehicle has.

We'll start with the driver position.

Driver Position

This part describes the driver's restraint system.

Lap-Shoulder Belt

The driver has a lap-shoulder belt. Here's how to wear it properly.

1. Close and lock the door.
2. Adjust the seat so you can sit up straight. To see how, see "Seats" in the Index.



3. Pick up the latch plate and pull the belt across you. Don't let it get twisted.

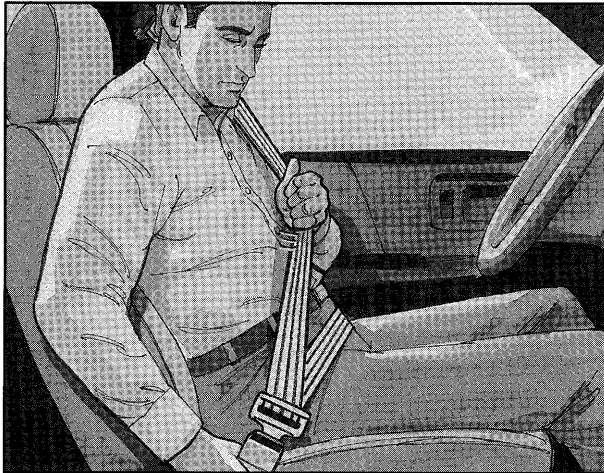
The shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

I-16

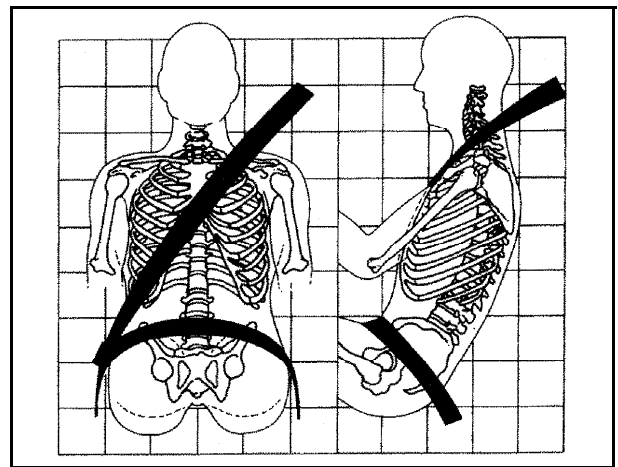
4. Push the latch plate into the buckle until it clicks.

Pull up on the latch plate to make sure it is secure. If the belt isn't long enough, see "Safety Belt Extender" at the end of this section.

Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



5. To make the lap part tight, pull down on the buckle end of the belt as you pull up on the shoulder belt.

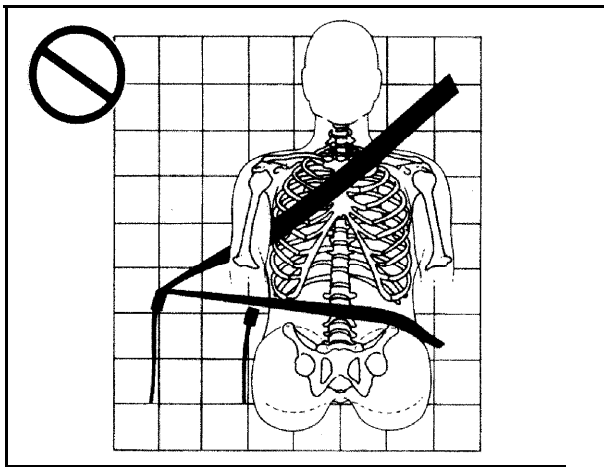


The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you'd be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there's a sudden stop or crash, or if you pull the belt very quickly out of the retractor.

1-17

Q: What's wrong with this?



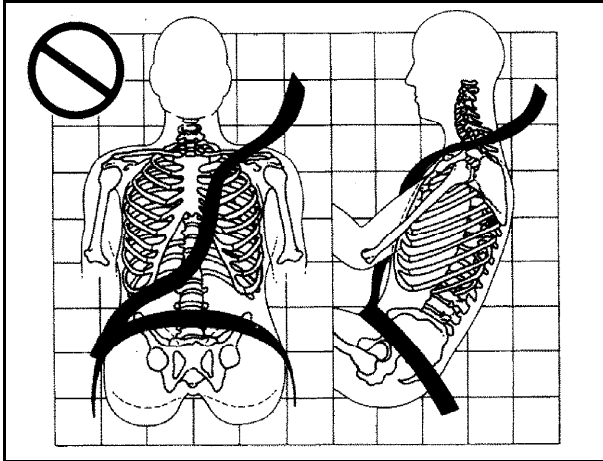
A: The belt is buckled in the wrong place.

CAUTION:

You can be seriously injured if your belt is buckled in the wrong place like this. In a crash, the belt would go up over your abdomen. The belt forces would be there, not at the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.

1-19

Q: What's wrong with this?



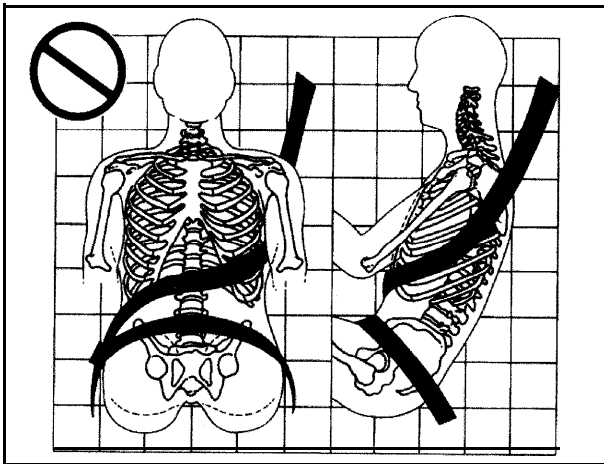
A: The shoulder belt is too loose. It won't give nearly as much protection this way.

! CAUTION:

You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.

1-18

Q: What's wrong with this?



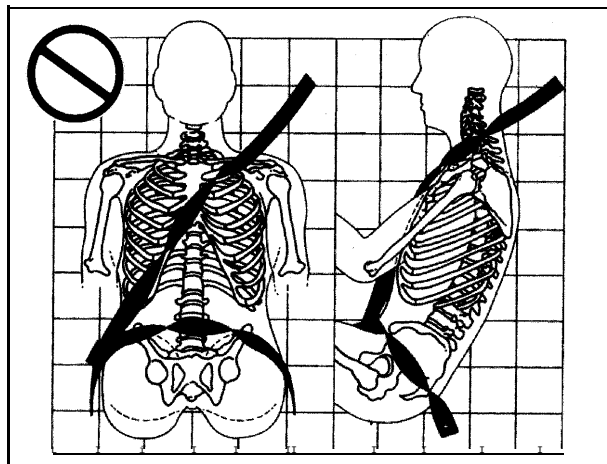
A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

! CAUTION:

You can be seriously injured if you wear the shoulder belt under your arm. In a crash, your body would move too far forward, which would increase the chance of head and neck injury. Also, the belt would apply too much force to the ribs, which aren't as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen.

1-20

Q: What's wrong with this?



A: The belt is twisted across the body.

CAUTION:

You can be seriously injured by a twisted belt. In a crash, you wouldn't have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it.

1-21

The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it's more likely that the fetus won't be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

Right Front Passenger Position

To learn how to wear the right front passenger's safety belt properly, see "Driver Position" earlier in this section.

The right front passenger's safety belt works the same way as the driver's safety belt -- except for one thing. If you ever pull the shoulder portion of the belt out all the way, you will engage the child restraint locking feature. If this happens, just let the belt go back all the way and start again.

Air Bag System

This part explains the air bag system.

Your vehicle has air bags -- one air bag for the driver and another air bag for the right front passenger.

Frontal air bags are designed to help reduce the risk of injury from the force of an inflating air bag. But these air bags must inflate very quickly to do their job and comply with federal regulations.

Here are the most important things to know about the air bag system:

CAUTION:

You can be severely injured or killed in a crash if you aren't wearing your safety belt -- even if you have air bags. Wearing your safety belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Air bags are designed to work with safety belts, but don't replace them. Air bags are designed to work only in moderate to severe crashes where the front of your vehicle hits something. They aren't designed to inflate at all in rollover, rear or low-speed frontal crashes, or in many side crashes. And, for some unrestrained occupants, air bags may provide less protection in frontal crashes than more forceful air bags have provided in the past. Everyone in your vehicle should wear a safety belt properly -- whether or not there's an air bag for that person.

1-23

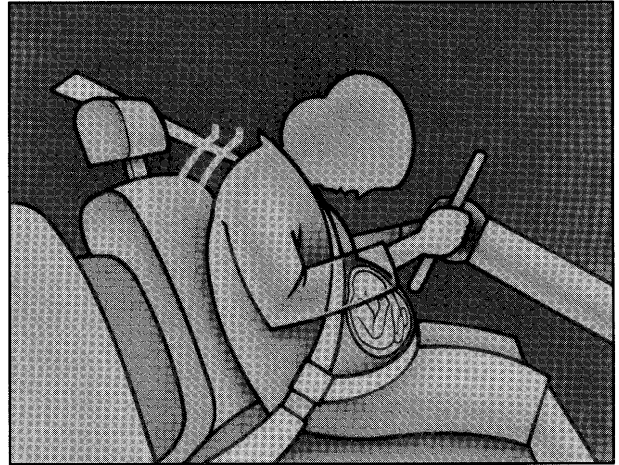


To unlatch the belt, just push the button on the buckle. The belt should go back out of the way.

Before you close the door, be sure the belt is out of the way. If you slam the door on it, you can damage both the belt and your vehicle.

Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they don't wear safety belts.



A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.

1-22

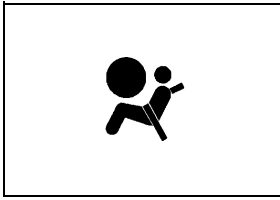
CAUTION:

Air bags inflate with great force, faster than the blink of an eye. If you're too close to an inflating air bag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position before and during a crash. Always wear your safety belt, even with air bags. The driver should sit as far back as possible while still maintaining control of the vehicle.

CAUTION:

Anyone who is up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer the best protection for adults, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle. To read how, see the part of this manual called "Children."

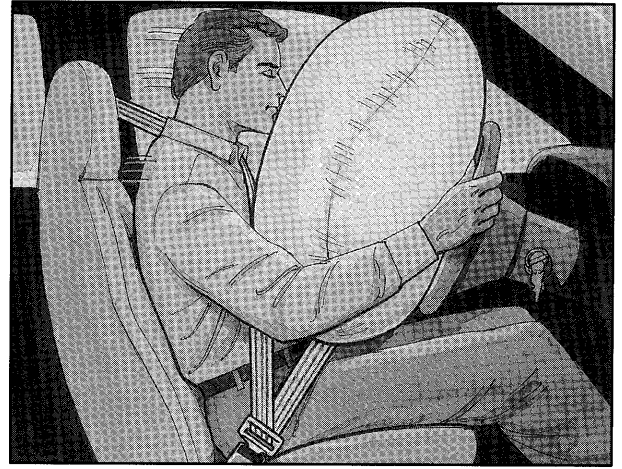
1-24



There is an air bag readiness light on the instrument panel, which shows the air bag symbol.

The system checks the air bag electrical system for malfunctions. The light tells you if there is an electrical problem. See “Air Bag Readiness Light” in the Index for more information.

How the Air Bag System Works



Where are the air bags?

The driver's air bag is in the middle of the steering wheel.

When should an air bag inflate?

An air bag is designed to inflate in a moderate to severe frontal or near-frontal crash. The air bag will inflate only if the impact speed is above the system's designed “threshold level.” If your vehicle goes straight into a wall that doesn't move or deform, the threshold level is about 9 to 16 mph (14 to 26 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range. If your vehicle strikes something that will move or deform, such as a parked car, the threshold level will be higher. The air bag is not designed to inflate in rollovers, rear impacts, or in many side impacts because inflation would not help the occupant.

In any particular crash, no one can say whether an air bag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. Inflation is determined by the angle of the impact and how quickly the vehicle slows down in frontal or near-frontal impacts.

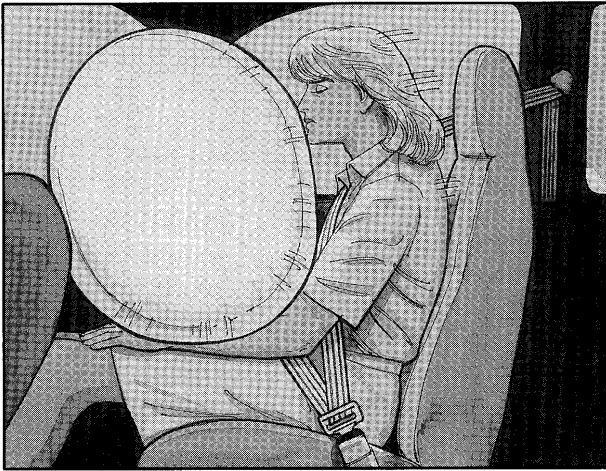
The air bag system is designed to work properly under a wide range of conditions, including off-road usage. Observe safe driving speeds, especially on rough terrain. As always, wear your safety belt. See “Off-Road Driving” in the Index for more tips on off-road driving.

What makes an air bag inflate?

In an impact of sufficient severity, the air bag sensing system detects that the vehicle is in a crash. The sensing system triggers a release of gas from the inflator, which inflates the air bag. The inflator, air bag and related hardware are all part of the air bag modules inside the steering wheel and in the instrument panel in front of the right front passenger.

How does an air bag restrain?

In moderate to severe frontal or near-frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. Air bags supplement the protection provided by safety belts. Air bags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But air bags would not help you in many types of collisions, including rollovers, rear impacts and many side impacts, primarily because an occupant's motion is not toward those air bags. Air bags should never be regarded as anything more than a supplement to safety belts, and then only in moderate to severe frontal or near-frontal collisions.



The right front passenger's air bag is in the instrument panel on the passenger's side.

CAUTION:

If something is between an occupant and an air bag, the bag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating air bag must be kept clear. Don't put anything between an occupant and an air bag, and don't attach or put anything on the steering wheel hub or on or near any other air bag covering.

1-26

What will you see after an air bag inflates?

After an air bag inflates, it quickly deflates, so quickly that some people may not even realize the air bag inflated. Some components of the air bag module -- the steering wheel hub for the driver's air bag, or the instrument panel for the right front passenger's bag -- will be hot for a short time. The parts of the bag that come into contact with you may be warm, but not too hot to touch. There will be some smoke and dust coming from vents in the deflated air bags. Air bag inflation doesn't prevent the driver from seeing or from being able to steer the vehicle, nor does it stop people from leaving the vehicle.

CAUTION:

When an air bag inflates, there is dust in the air. This dust could cause breathing problems for people with a history of asthma or other breathing trouble. To avoid this, everyone in the vehicle should get out as soon as it is safe to do so. If you have breathing problems but can't get out of the vehicle after an air bag inflates, then get fresh air by opening a window or door.

- Air bags are designed to inflate only once. After they inflate, you'll need some new parts for your air bag system. If you don't get them, the air bag system won't be there to help protect you in another crash. A new system will include air bag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle is equipped with a diagnostic module, which records information about the air bag system. The module records information about the readiness of the system, when the system commands air bag inflation and driver's safety belt usage at deployment.
- Let only qualified technicians work on your air bag system. Improper service can mean that your air bag system won't work properly. See your dealer for service.

1-28

NOTICE:

If you damage the covering for the driver’s or the right front passenger’s air bag, the bag may not work properly. You may have to replace the air bag module in the steering wheel or both the air bag module and the instrument panel for the right front passenger’s air bag. Do not open or break the air bag coverings.



CAUTION:

For up to 10 minutes after the ignition key is turned off and the battery is disconnected, an air bag can still inflate during improper service. You can be injured if you are close to an air bag when it inflates. Avoid wires wrapped with yellow tape or yellow connectors. They are probably part of the air bag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.

The air bag system does not need regular maintenance.

Servicing Your Air Bag-Equipped Vehicle

Air bags affect how your vehicle should be serviced. There are parts of the air bag system in several places around your vehicle. You don’t want the system to inflate while someone is working on your vehicle. Your dealer and the service manual have information about servicing your vehicle and the air bag system. To purchase a service manual, see “Service and Owner Publications” in the Index.

Adding Equipment to Your Air Bag-Equipped Vehicle

If I add a push bumper or a bicycle rack to the front of my vehicle, will it keep the air bags from working properly?

As long as the push bumper or bicycle rack is attached to your vehicle so that the vehicle's basic structure isn't changed, it's not likely to keep the air bags from working properly in a crash.

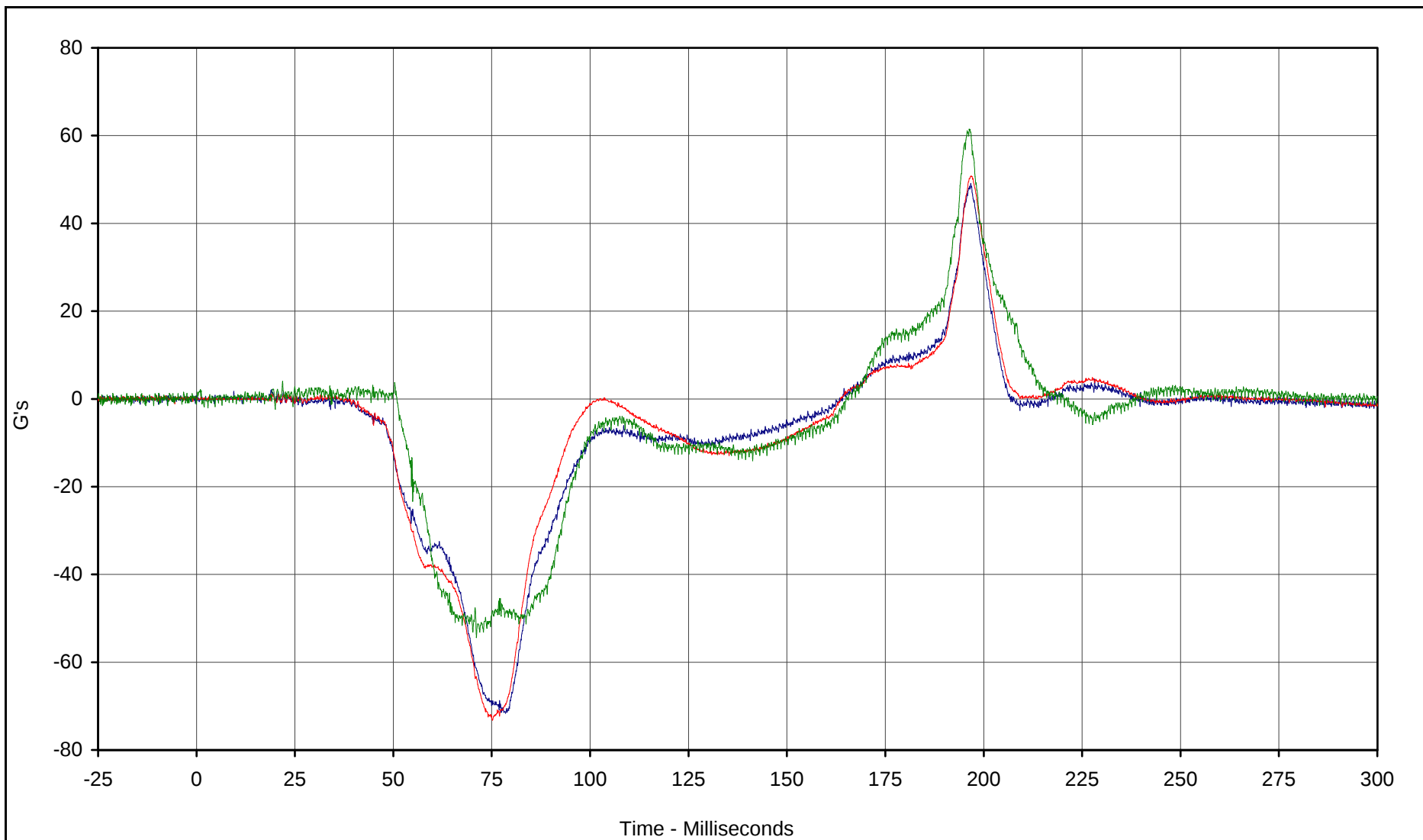
Q: Is there anything I might add to the front of the vehicle that could keep the air bags from working properly?

A: Yes. If you add things that change your vehicle's frame, bumper system, front end sheet metal or height, they may keep the air bag system from working properly. Also, the air bag system may not work properly if you relocate any of the air bag sensors. If you have any questions about this, you should contact Customer Assistance before you modify your vehicle. The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual. See "Customer Satisfaction Procedure" in the Index.

APPENDIX G

NINE ACCELEROMETER HEAD ARRAY

G-1



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X	138	FIL	G's	49.1	196.7	-71.6	78.5	1000
Driver Yarm-X	142	FIL	G's	50.8	196.8	-73.2	75.2	1000
Driver Zarm-X	145	FIL	G's	61.4	196.3	-54.4	71.1	1000



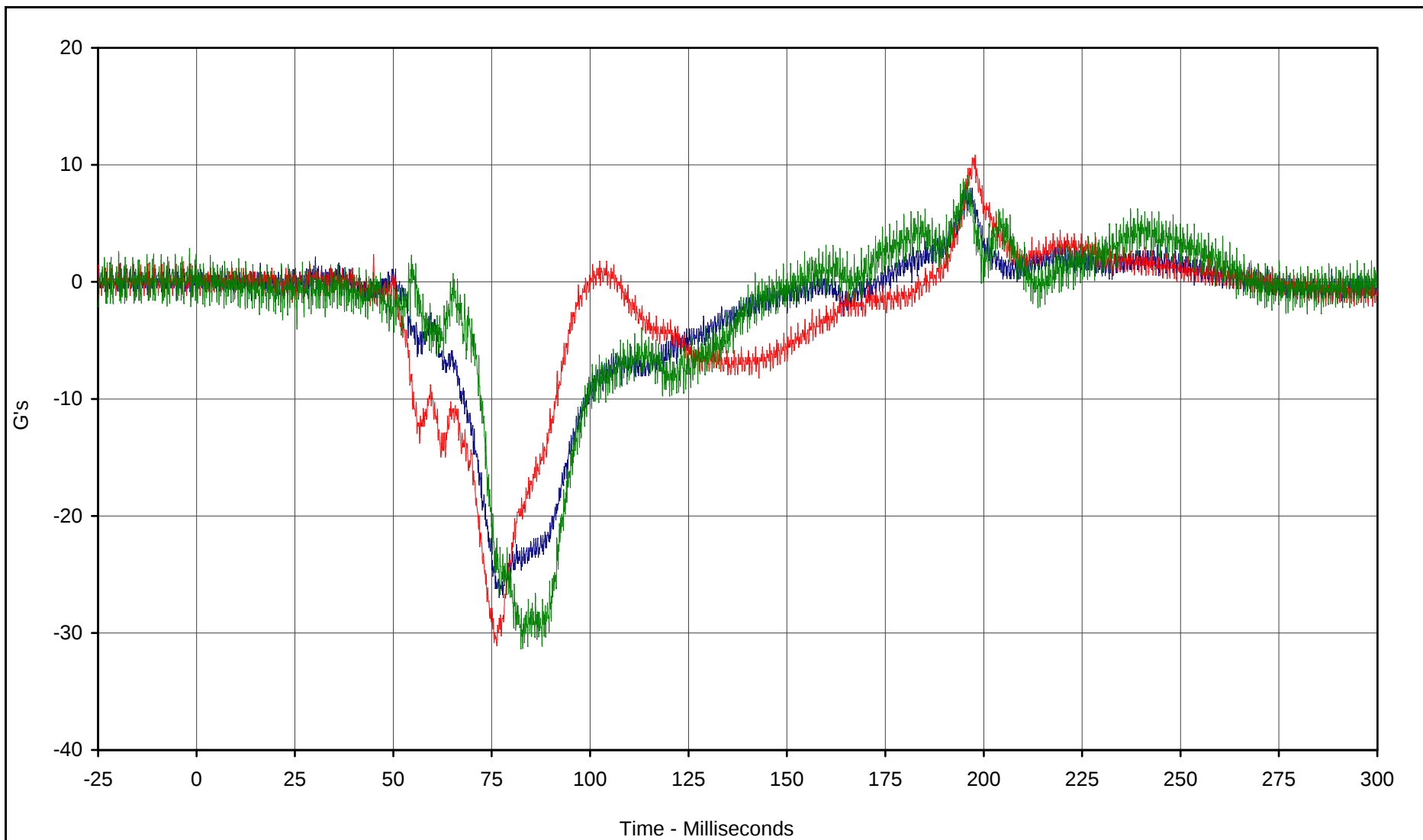
Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105

KAR22001-02



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Y	139	FIL	G's	8.0	195.5	-27.0	76.9	1000
Driver Xarm-Y	144	FIL	G's	10.9	197.8	-31.1	76.3	1000
Driver Zarm-Y	146	FIL	G's	9.1	195.9	-31.3	82.4	1000

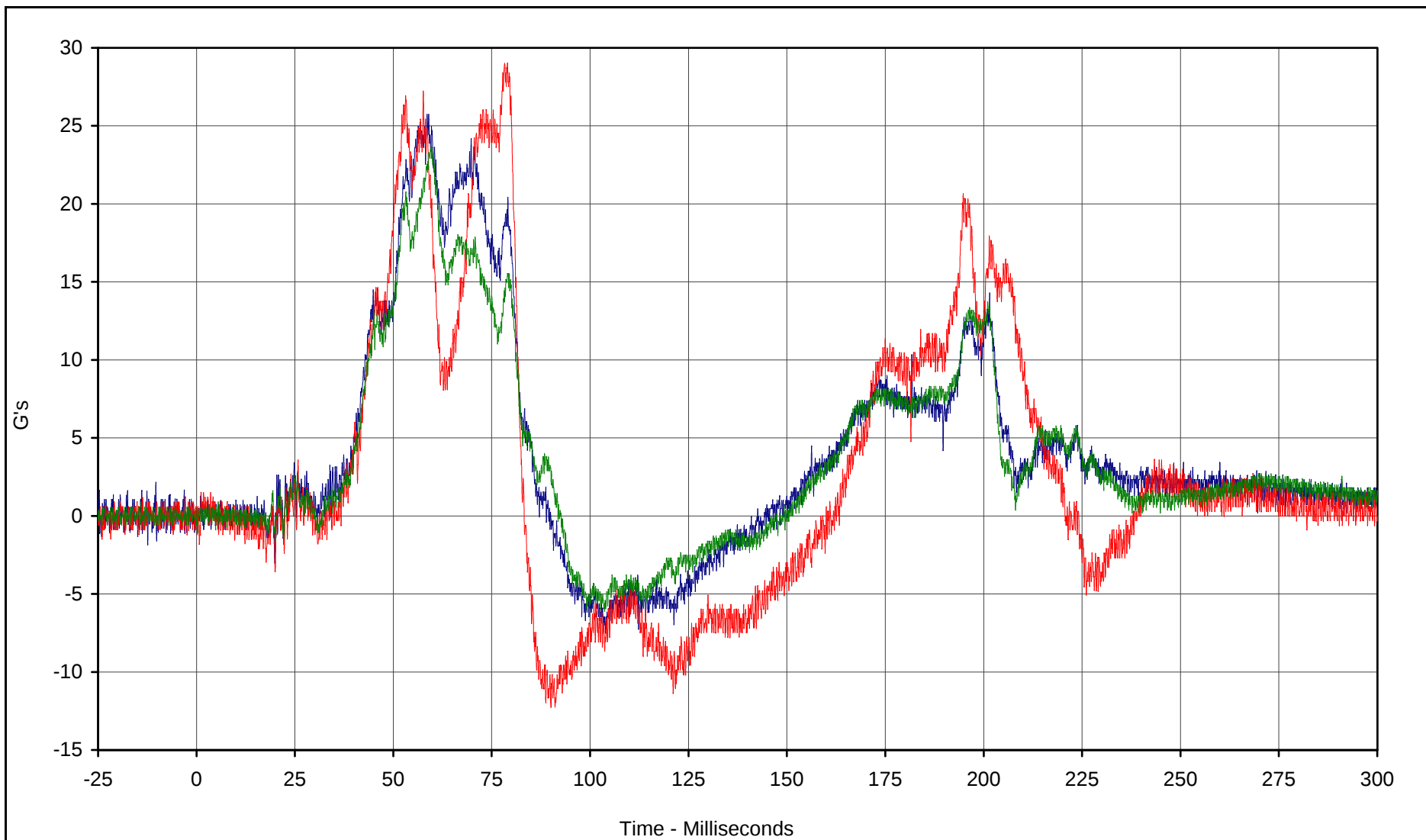


Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Z	140	FIL	G's	25.7	58.6	-7.5	103.3	1000
Driver Xarm-Z	143	FIL	G's	29.0	78.3	-12.3	90.0	1000
Driver Yarm-Z	141	FIL	G's	23.6	59.6	-6.1	103.7	1000

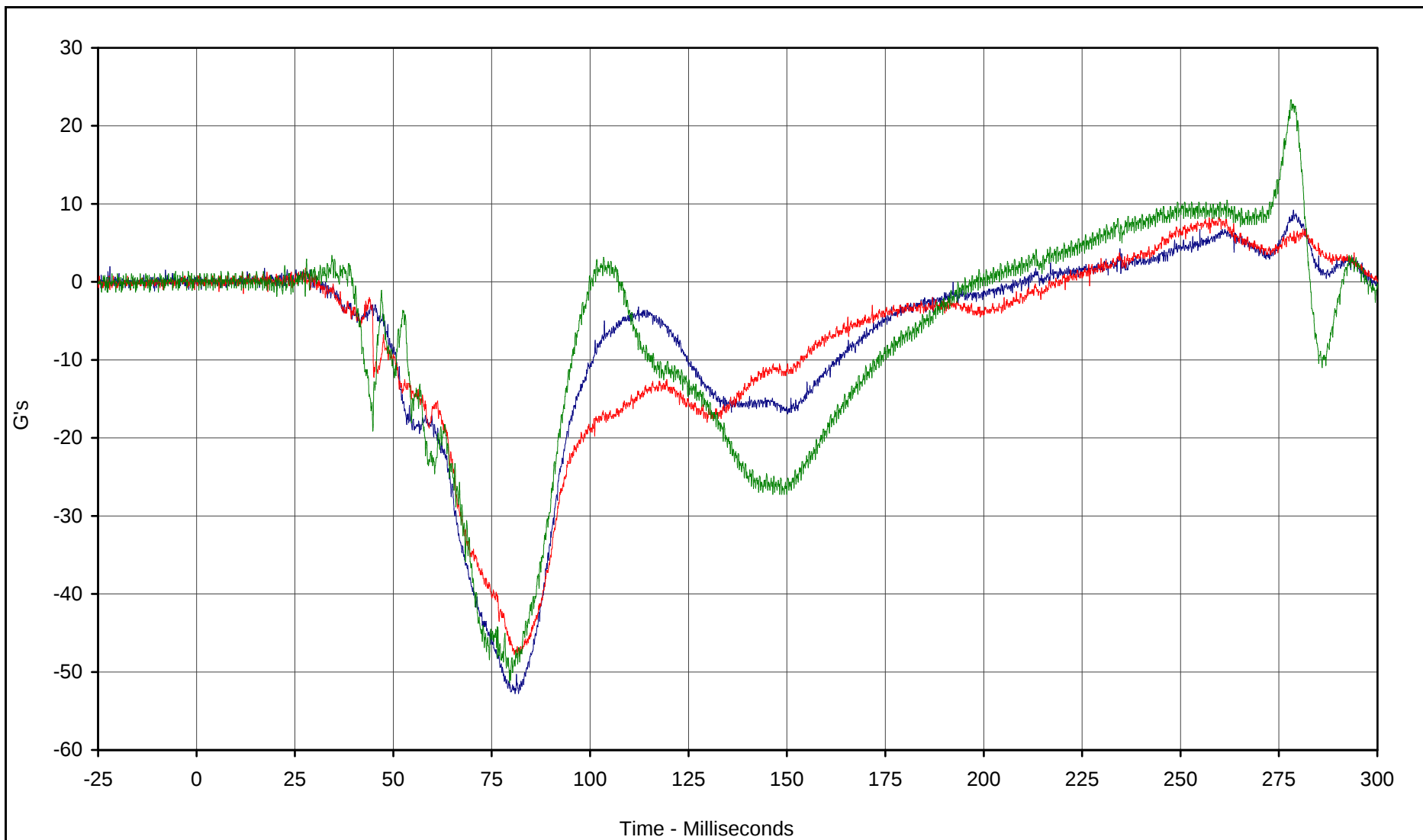


Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X	147	FIL	G's	9.2	278.7	-52.8	80.9	1000
Passenger Yarm-X	151	FIL	G's	8.3	257.3	-48.0	82.1	1000
Passenger Zarm-X	154	FIL	G's	23.3	278.0	-51.3	79.5	1000

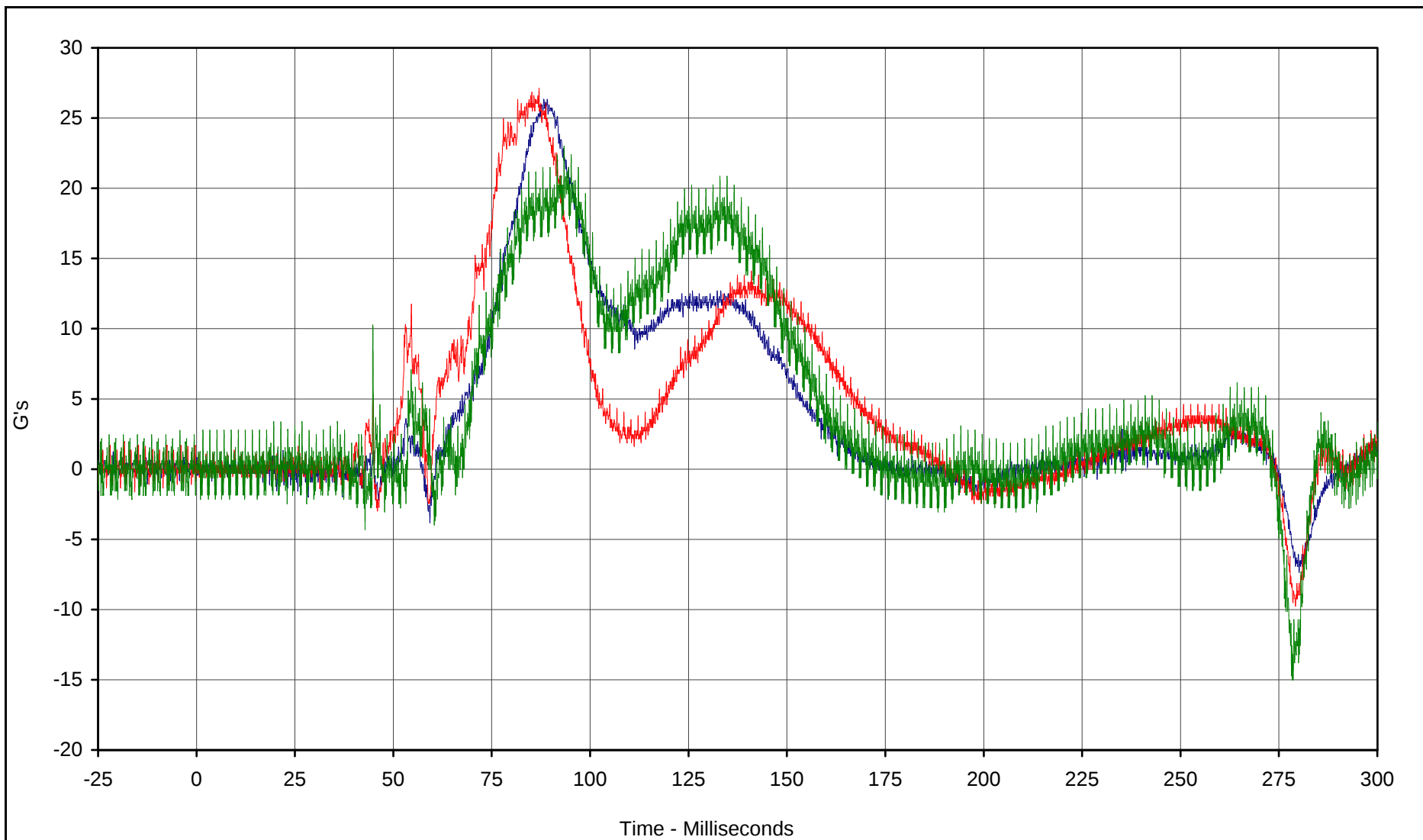


Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Y	148	FIL	G's	26.3	88.2	-7.3	280.1	1000
Passenger Xarm-Y	153	FIL	G's	27.1	87.0	-9.8	279.2	1000
Passenger Zarm-Y	155	FIL	G's	23.0	93.4	-15.0	278.4	1000

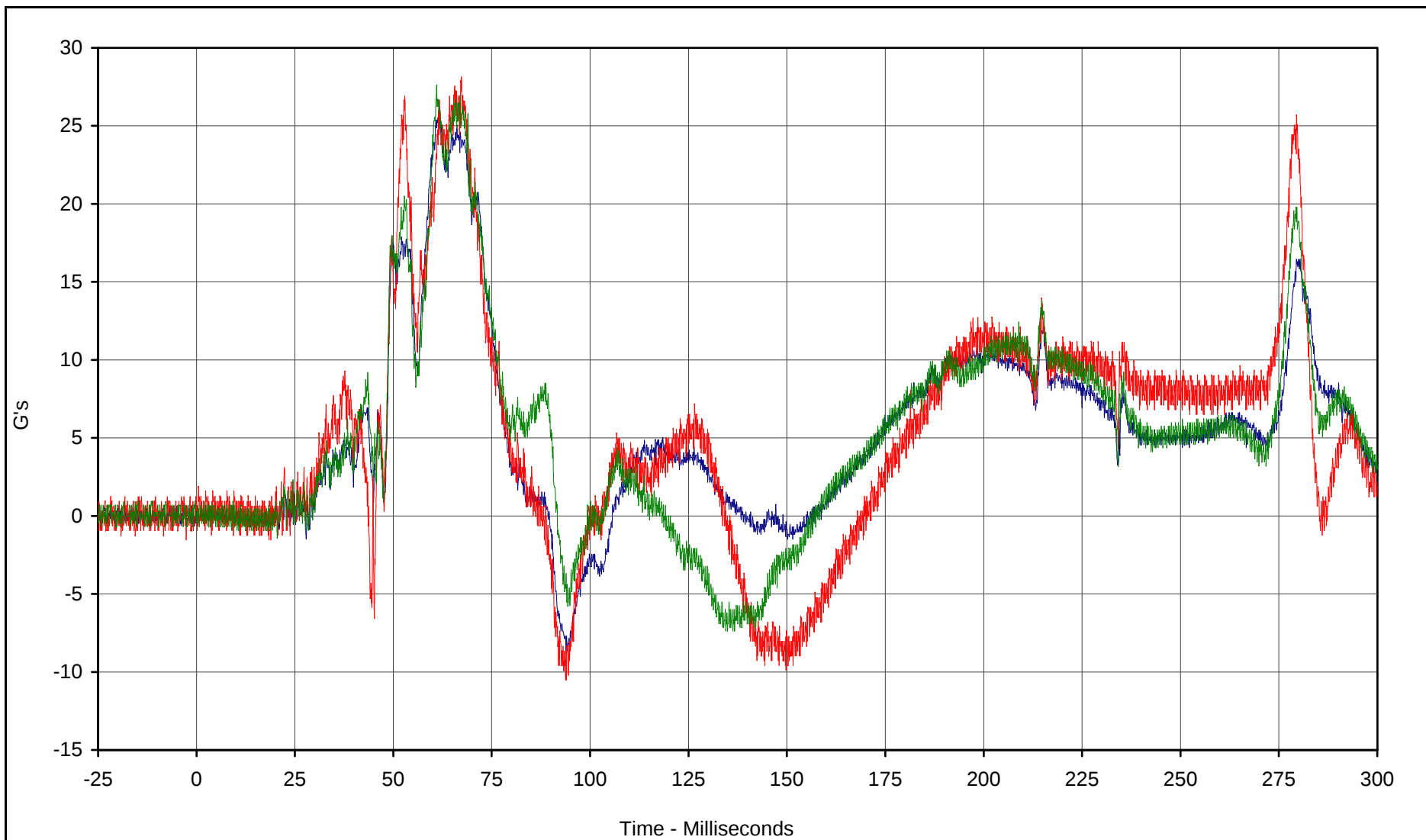


Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Z	149	FIL	G's	26.5	61.6	-8.8	93.9	1000
Passenger Xarm-Z	152	FIL	G's	28.1	67.3	-10.5	93.8	1000
Passenger Yarm-Z	150	FIL	G's	27.6	61.0	-7.4	134.5	1000



Test Vehicle: 2002 Chevrolet Blazer LS ZR2 SUV

Test Date: 12/13/01

Test Program: 2002 NHTSA 35mph NCAP

NHTSA No.: M20105