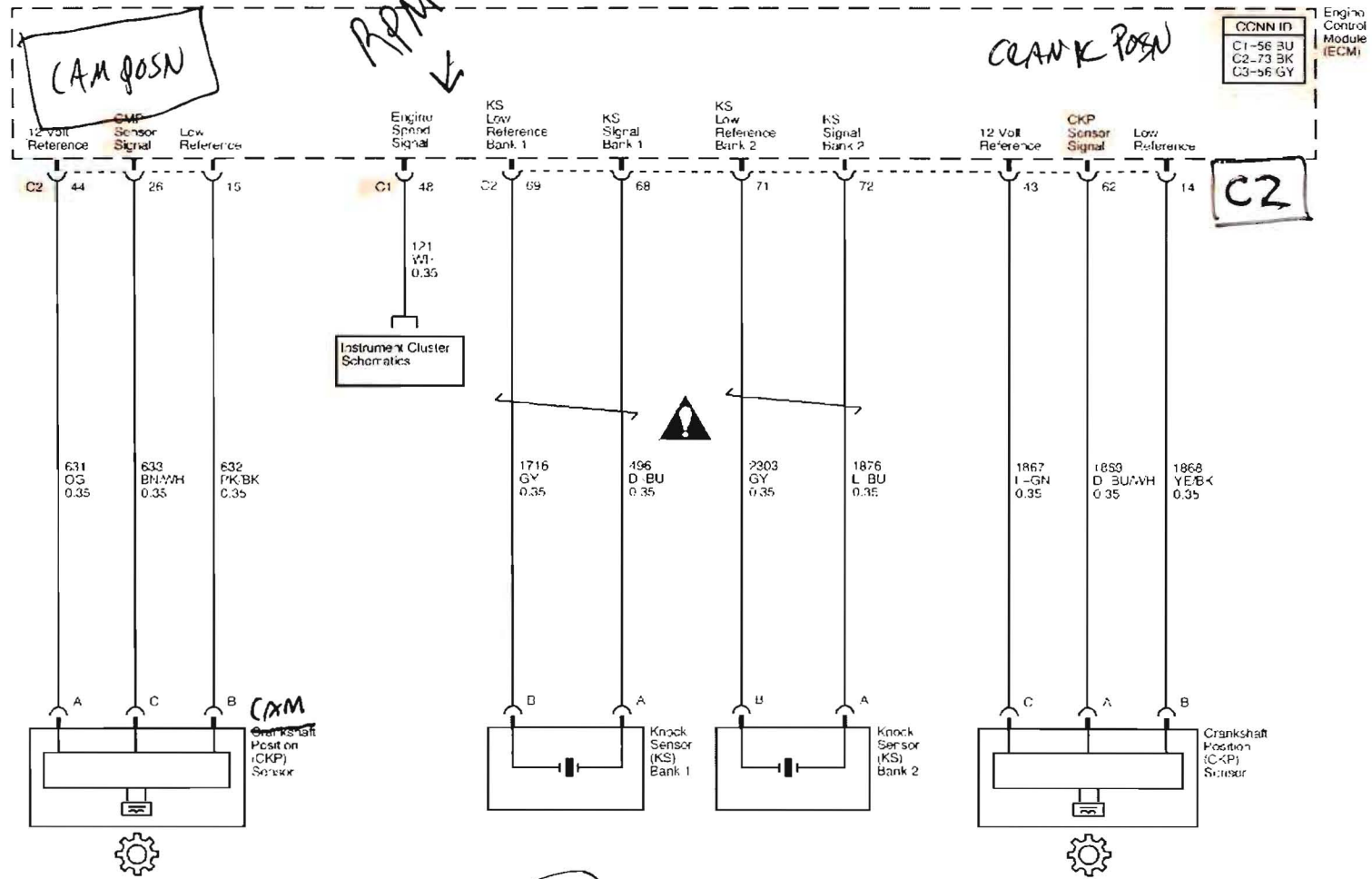


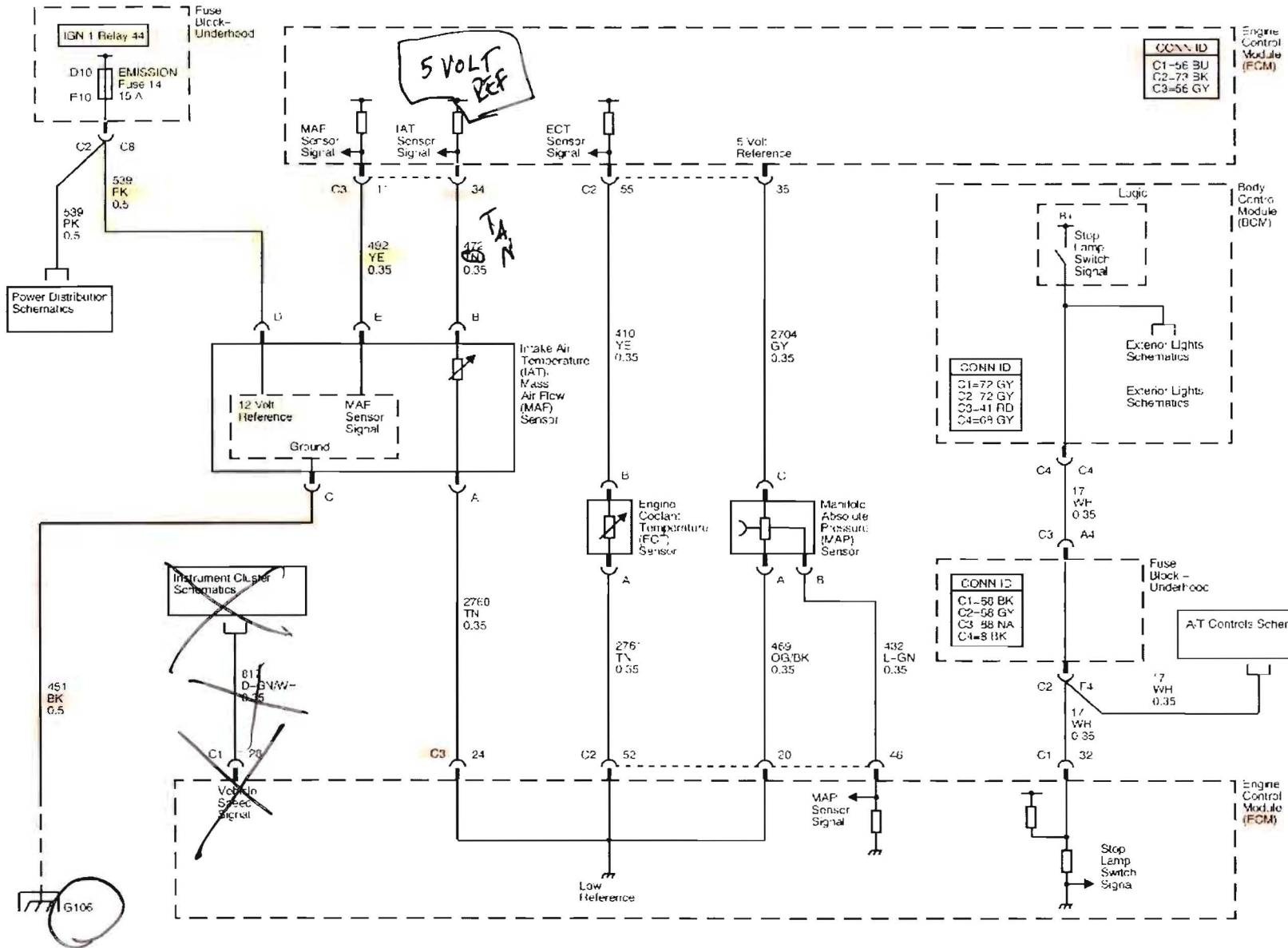
Ignition Controls - CMP, KS and CKP Sensors



DVM
 check 12V
 negative to BATT neg
 .loss than voltage (9vd.)
 100 mill.volt.
 .009 V
 .007

Bump
 200ms

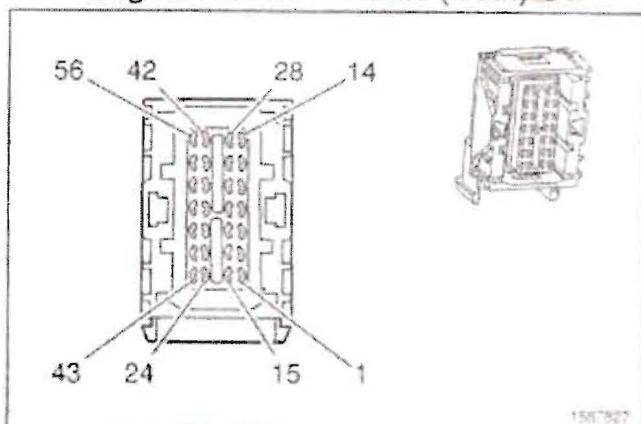
Engine Data Sensors — Pressure, Temperature, MAF, VSS and Brake Travel



7/25/2019 11:11 AM

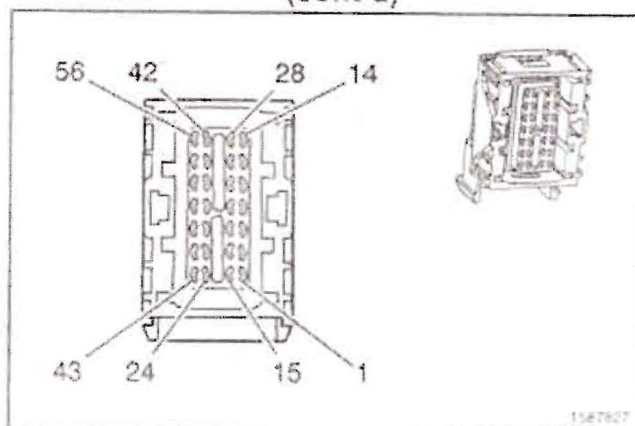
**Engine Control Module (ECM)
Connector End Views**

Engine Control Module (ECM) C1



Connector Part Information		<ul style="list-style-type: none"> • 9123-7148 • 56-way F (BU) 	
Pin	Wire Color	Circuit No.	Function
1	TN/BK	2500	High Speed GMLAN Serial Data Bus+
2	TN	2501	High Speed GMLAN Serial Data Bus-
3	—	—	Not Used
4	BN/WH	419	Check Engine Indicator Lamp Output
5-6	—	—	Not Used
7	BN	1271	Electronic Throttle Pedal Position Return 1
8	PU	1272	Electronic Throttle Pedal Position Return 2
9	—	—	Not Used
10	BN	5069	Engine Control Relay Coil Control
11-12	—	—	Not Used
13	YE	447	Starter Relay Output-Coil
14	PK	439	Ignition 1 Voltage
15-17	—	—	Not Used
18	YE	1843	Accessory Voltage
19	OG	300	Ignition 3 Voltage
20	OG/BK	740	Battery Positive Voltage
21	PU/WH	5197	VSS Signal
22	BU	1161	Electronic Throttle Pedal Position Signal 1
23	—	—	Not Used
24	GN	890	Fuel Tank Pressure Sensor Signal
25	—	—	Not Used
26	GN/BK	380	A/C Refrigerant Pressure Sensor Signal
27-28	—	—	Not Used

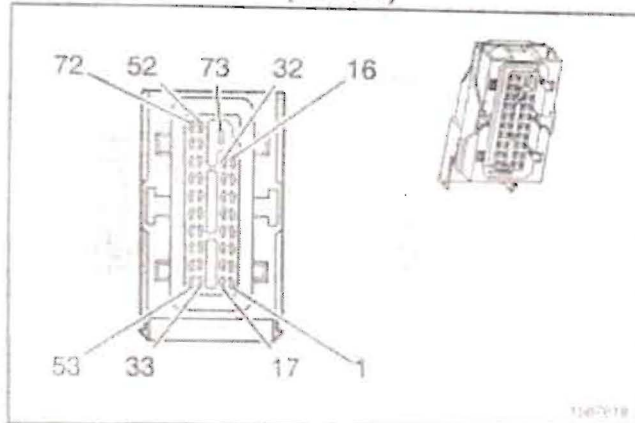
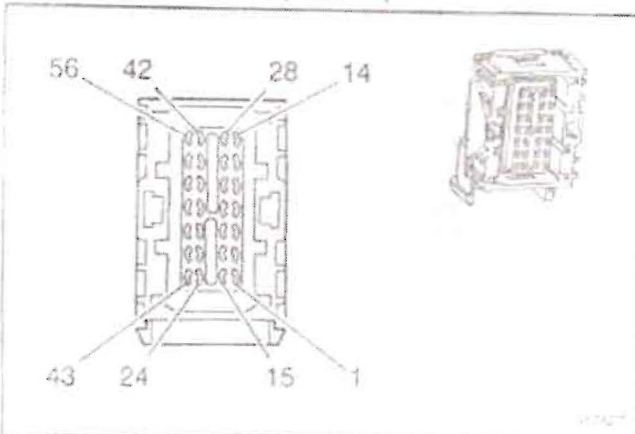
**Engine Control Module (ECM) C1
(cont'd)**



Connector Part Information		<ul style="list-style-type: none"> • 9123-7148 • 56-way F (BU) 	
Pin	Wire Color	Circuit No.	Function
29	TN	1274	Electronic Throttle Pedal Position 5-Volt Reference 2
30	GN	2700	A/C Refrigerant Pressure Sensor Signal 5-Volt Reference
31	GY	2709	Fuel Tank Pressure Sensor 1, 5-Volt Reference
32	BU/RD	20	Stop Lamp Switch Signal
33-34	—	—	Not Used
35	WH/BK	1164	Electronic Throttle Pedal Position 5 Volt Reference 1
36	OG/BK	335	Low Speed Cooling Fan Relay Control
37	PU	30	Fuel Gage Sensor Signal
38	GY	847	Extended Travel Brake Switch Signal
39-40	—	—	Not used
41	L-BU	1162	Electronic Throttle Pedal Position 2
42	YE	1652	Reverse Lockout Solenoid Control
43	PU/WH	379	CPP Switch Signal
44	—	—	Not Used
45	GN/WH	465	Fuel Pump Relay Feed-Coil
46	BN	86	Cruise Control Release Signal
47	—	—	Not Used
48	BN	121	Tachometer Signal
49-50	—	—	Not Used
51	GN/BU	275	Park/Neutral Position Switch Park Signal
52	PU	5	Crank Voltage

Engine Control Module (ECM) C1
(cont'd)

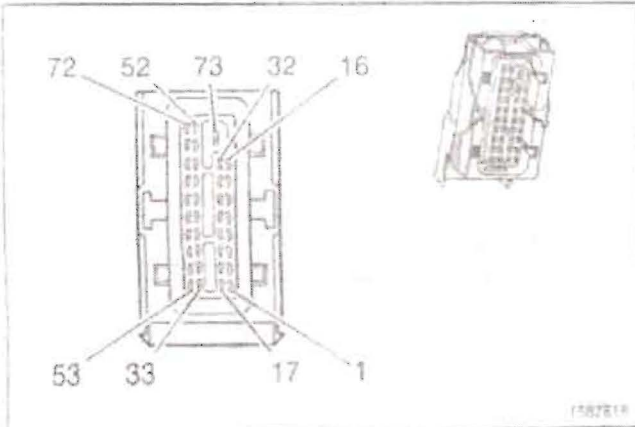
Engine Control Module (ECM) C2
(cont'd)



Connector Part Information		<ul style="list-style-type: none"> • 9123-7148 • 56-way F (BU) 	
Pin	Wire Color	Circuit No.	Function
53-54		—	Not Used
55	TN	5514	A/C Refrigerant Pressure Sensor Signal
56	BU/WH	473	High Speed Cooling Fan Relay Control

Connector Part Information		<ul style="list-style-type: none"> • 9123-7131 • 72-Way F (BK) 	
Pin	Wire Color	Circuit No.	Function
11-12	—	—	Not Used
13	YE	846	Fuel Injector 6 Control
14	L-BU/BK	574	Low Reference
15	RD/WH	532	Low Reference
16	BN	2129	Low Reference
17-19	—	—	Not Used
20	BK	469	MAP Sensor-Return
21	GN	470	Low Reference
22-23	—	—	Not Used
24	BN/WH	331	Engine Oil Pressure Signal
25	—	—	Not Used
26	BN	633	CMP Sensor
27-28	—	—	Not Used
29	PU	486	Throttle Position Sensor 2 Signal
30	—	—	Not Used
31	GN	485	Throttle Position Sensor 1 Signal
32-33	—	—	Not Used
35	PU/WH	2704	MAP Sensor 5-Volt Reference
36	BN/WH	1704	Low Reference
37	BU/YE	596	Reference Voltage 5-Volt Reference
38-40	—	—	Not Used
41	L-BU/BK	1688	5-Volt Reference
42	—	—	Not Used
43	L-BU/WH	2867	12-Volt Reference Voltage
44	WH/BK	631	Low Coolant Level Indicator Signal
45	GY	23	Generator Turn On Signal
46	L-GN	432	MAP Sensor Signal

Engine Control Module (ECM) C2

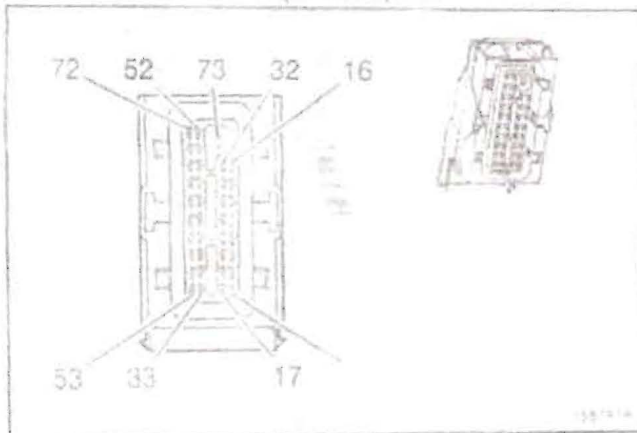


Connector Part Information		<ul style="list-style-type: none"> • 9123-7131 • 72-Way F (BK) 	
Pin	Wire Color	Circuit No.	Function
1	L-GN/RD	3113	HO2S Bank 2 Sensor 1 Heater Control
2	BK/WH	3212	HO2S Bank 1 Sensor 1 Heater Control
3	—	—	Not Used
4	L-GN	878	Fuel Injector 8 Control
5	BU	1744	Fuel Injector 1 Control
6	GN	1745	Fuel Injector 2 Control
7	PK/BK	877	Fuel Injector 7 Control
8	BN/YE	844	Fuel Injector 4 Control
9	PU	1746	Fuel Injector 3 Control
10	GY	845	Fuel Injector 5 Control

- Sensor Signal

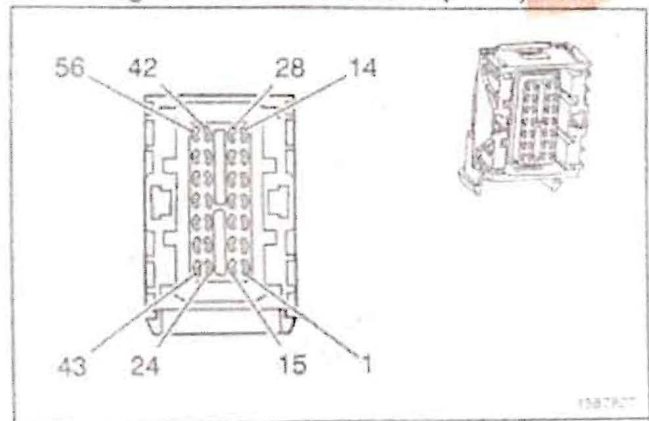
CKP
12 volt
12 volt
Reference
CMP

Engine Control Module (ECM) C2
(cont'd)



Connector Part Information		<ul style="list-style-type: none"> • 9123-7131 • 72-Way F (BK) 	
Pin	Wire Color	Circuit No.	Function
47	—	—	Not Used
48	PU	1665	HO2S High Signal Bank 1 Sensor 1
49	BU/BK	1664	HO2S Low Signal Bank 1 Sensor 1
50	GN/YE	428	EVAP Canister Purge Solenoid Control
51	GY	1666	HO2S High Signal Bank 2 Sensor 1
52	GY/BK	2761	Low Reference
53	YE	2127	Ignition Coil 7 Control
54	WH	1310	EVAP Canister Vent Solenoid Control
55	YE	410	ECT Sensor Signal 5-Volt Reference
56	OG	225	Generator Field Duty Cycle Signal
57	L-GN	2126	Ignition Coil 6 Control
58	WH	2124	Ignition Coil 4 Control
59	GN	2125	Ignition Coil 5 Control
60	BN	582	TAC Motor Control-2
61	BU	2123	Ignition Coil 3 Control
62	BU	573	CKP Sensor Signal
63	YE	581	TAC Motor Control-1
64	PU	2130	Low Reference
65	L-BU	2128	Ignition Coil 8 Control
66	YE/BK	2122	Ignition Coil 2 Control
67	—	—	Not Used
68	BU	496	Knock Sensor 1 Signal
69	GY	2303	Knock Sensor 1 Return
70	GY/BK	1667	HO2S Low Signal Bank 2 Sensor 1
71	GY	1716	Knock Sensor 2 Return
72	L-BU	1876	Knock Sensor 2 Signal
73	BK/RD	450	Ground

Engine Control Module (ECM) C3



Connector Part Information		<ul style="list-style-type: none"> • 9123-7148 • 56-Way F (GY) 	
Pin	Wire Color	Circuit No.	Function
1	—	—	Not Used
2	L-BU	3223	HO2S Bank 1 Sensor 2 Heater Control
3	RD/WH	3122	HO2S Bank 2 Sensor 2 Heater Control
4-10	—	—	Not Used
11	BN/WH	492	MAF Sensor Signal
12-17	—	—	Not Used
18	BN/RD	1669	HO2S Low Signal Bank 1 Sensor 2
19	PU/WH	1668	HO2S High Signal Bank 1 Sensor 2
20	PU/BK	1670	HO2S High Signal Bank 2 Sensor 2
21	BN/BU	1671	HO2S Low Signal Bank 2 Sensor 2
22	OG/BK	1786	Park/Neutral Signal
23	—	—	Not Used
24	BK	2759	Low Reference
25-33	—	—	Not Used
34	BK	472	IAT Sensor Signal
35-42	—	—	Not Used
44	BN/OG	401	VSS Low Signal
45	BU/WH	400	VSS High Signal
46-47	—	—	Not Used
48	GY	587	Skip Shift Solenoid Control
49	BK	2759	Low Reference
50	—	—	Not Used
51	L-GN/BK	459	A/C Compressor Clutch Relay Control
52-56	—	—	Not Used

MAF SIGNAL

CRANK POSN SENS