

PRODEMAND

YMMS: 2008 Mazda 3 i Sport
 Engine: 2.0L Eng
 VIN:

May 31, 2022
 License:
 Odometer:

ECM,Engine

Auto Transmission

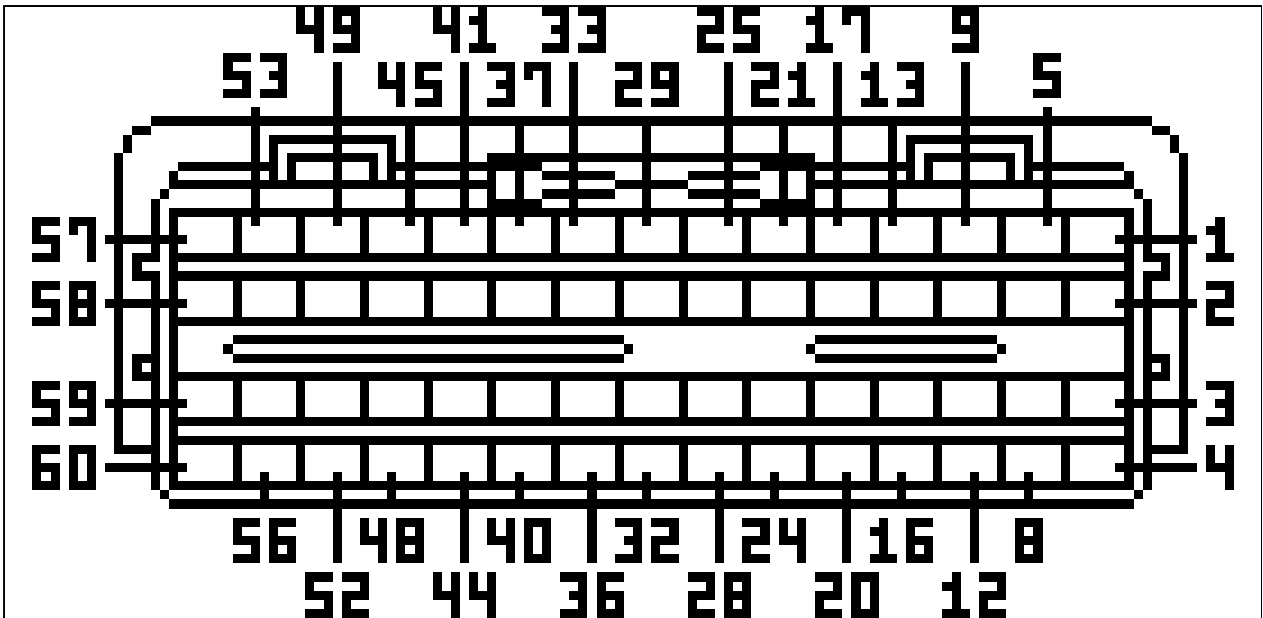
View:Backprobing Harness Connector, PCM Connector - 0140 - 101A (Gray)



Pin Assignment	Wire Color
1=Power Supply	Red
2=Power Supply	Gray
3=Back-up Power Supply	Green
4=Not Used	
5=Ground	Black
6=Ground	Black
7=Ground	Black
8=Not Used	
9=A/C Relay	Orange
10-12=Not Used	
13=CV Solenoid Control	SkyBlue
14-15=Not Used	
16=MAF Sensor Ground	Violet
17=Main Relay	Yellow
18=Cooling Fan Control	Violet

19-23=Not Used	
24=APP 2 Sensor	SkyBlue
25-27=Not Used	
28=Brake Switch	Green
29=IAT Sensor	Yellow
30=FTP Sensor 5 Volt Reference	Brown
31=APP Sensor 5 Volt Reference	Gray
32-33=Not Used	
34=FTP Sensor	LtGreen
35=CAN Ground	Red
36=APP Sensor Ground	LtGreen
37=MAF Sensor	Green
38=Not Used	
39=CAN Power	White
40=Cruise Control Switch Ground	SkyBlue
41= Not Used	
42= APP 1 Sensor	Orange
43=Cruise Control Switch	Green
44=Sensor Ground	Gray
45-50=Not Used	
51=Ignition Switch	LtGreen
52=Not Used	
53=EVAP Purge Control	Gray
54=Starter Relay Control	Blue
55=Neutral Position Switch	Violet
56=CPP Switch	White
57=Ground	Black
58=Not Used	
59=Fuel Pump Control	Brown
60=Not Used	

View: Backprobing Harness Connector, PCM Connector - 0140 - 101B (Gray)



Pin Assignment	Wire Color
1=A/F Sensor Heater Control	LtGreen
2=O2 Sensor Heater Control	SkyBlue
3-4=Not Used	
5=OCV Control Ground	Brown
6=Not Used	
7=Ignition Coil 1	Violet
8=Ignition Coil 4	SkyBlue
9=Variable Tumble Solenoid Valve	Gray
10=Variable Intake Air Solenoid Valve	White
11=Ignition Coil 2	Pink
12=Ignition Coil 3	Orange
13-16=Not Used	
17=O2 Sensor Signal	Brown
18=Variable Tumble Shutter Valve Switch	Yellow
19=CMP Sensor Signal	Gray
20=Not Used	
21=KS Signal	White
22=KS Ground	Orange
23=CKP Sensor Signal	Brown
24=Ground (Sensor Shield)	Black
25=Not Used	
26=A/F Sensor Power	Green

27=Generator Field Coil Control	Red
28=Not Used	
29=A/F Sensor Ground	Yellow
30=A/F Sensor Signal	Blue
31=Not Used	
32=Generator Output Voltage	White
33=MAP Sensor Signal	Red
34=ECT 1 Sensor	Gray
35-36=Not Used	
37=TP Sensor 1	Orange
38=TP Sensor 2	SkyBlue
39=CMP Sensor Power	Blue
40=TP Sensor Ground	Yellow
41=ECT 2 Sensor	Blue
42=Not Used	
43=CKP Sensor Power	Green
44=TP Sensor 5 Volt Reference	LtGreen
45=O2 Sensor Ground	Yellow
46=EGR Valve Control Signal	Violet
47=MAP Sensor 5 Volt Reference	Gray
48=Ground	Pink
49=EGR Valve Control Ground	Pink
50=EGR Valve Control Ground	Yellow
51=Not Used	
52=Fuel Injector 4	Violet
53=EGR Valve Control Power	White
54=Fuel Injector 1	Red
55=Fuel Injector 2	Brown
56=Fuel Injector 3	Pink
57=Throttle Actuator Control Signal	Violet
58=Throttle Actuator Control Ground	Blue
59=OCV Signal	SkyBlue
60=Not Used	

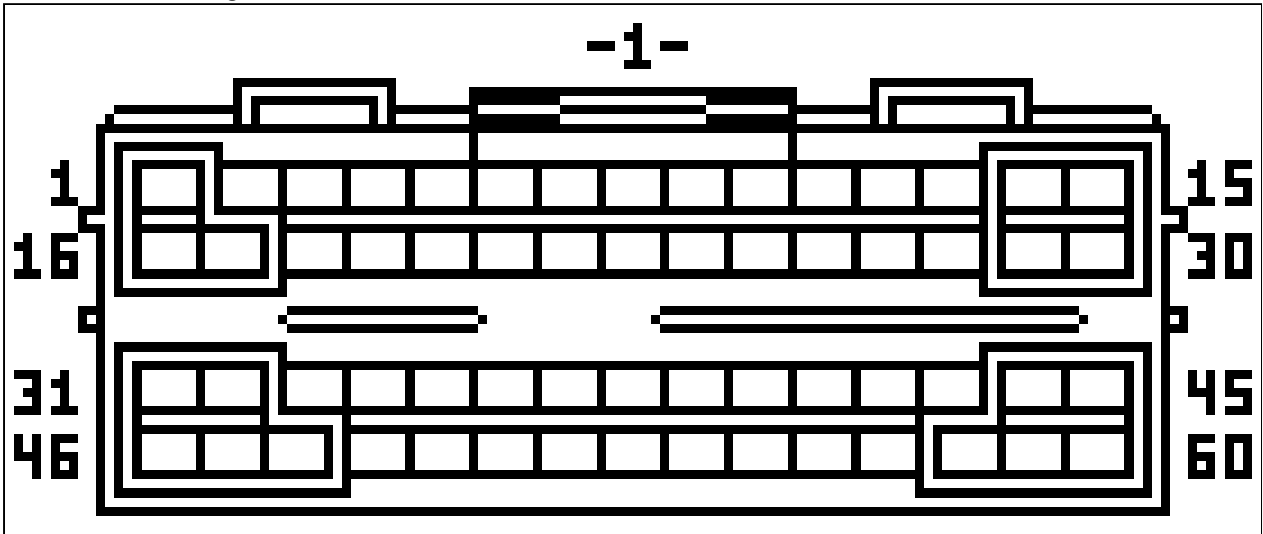
Module Location

Location:

In Engine compartment next to battery.

Manual Transmission

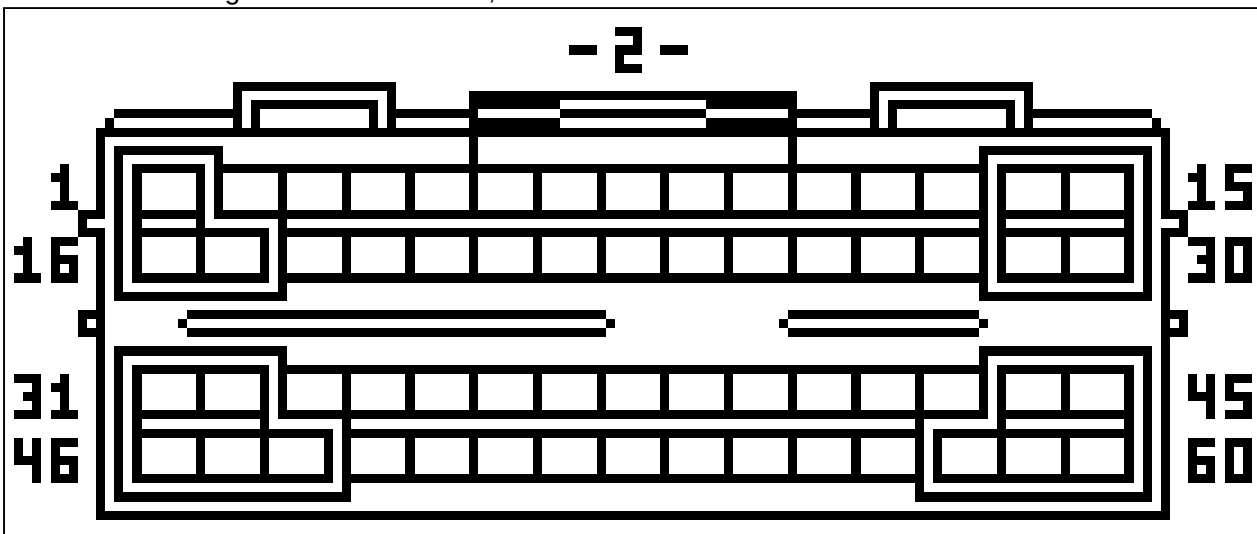
View:Front Probing Harness Connector, PCM Connector



Pin Assignment
01=Battery Voltage
02=Back-Up Power Supply
03-04=Not Used
05=APP 2 Sensor
06=MAF Sensor
07-09=Not Used
10=EVAP Leak Detection Pump
11=Main Relay Control
12=Not Used
13=A/C Relay
14-15=Not Used
16=Drive By Wire Relay(+)
17=Ground
18=Drive By Wire Relay Control
19=IAT Sensor
20=APP 1 Sensor
21=APP Sensor 5 Volt Reference
22-24=Not Used
25=EVAP Leak Detection Pump Solenoid
26=Cooling Fan Module
27=Not Used

28=Refrigerent Pressure Switch (Medium)
29=Not Used
30=Starter Relay Control
31-32=Not Used
33=Ignition Voltage
34=Refrigerent Pressure Switch (High & Low)
35=Cruise Control Switch
36=CAN H
37=CAN L
38-45=Not Used
46-48=Ground
49=Sensor Ground
50=MAF Sensor Ground
51-53=Not Used
54=Brake Switch
55=Neutral Switch (M/T)
55=Not Used (A/T)
56-58=Not Used
59=Fuel Pump Relay Control
60=Clutch Pedal Position Switch (M/T)
60=Not Used (A/T)

View:Front Probing Harness Connector, PCM Connector



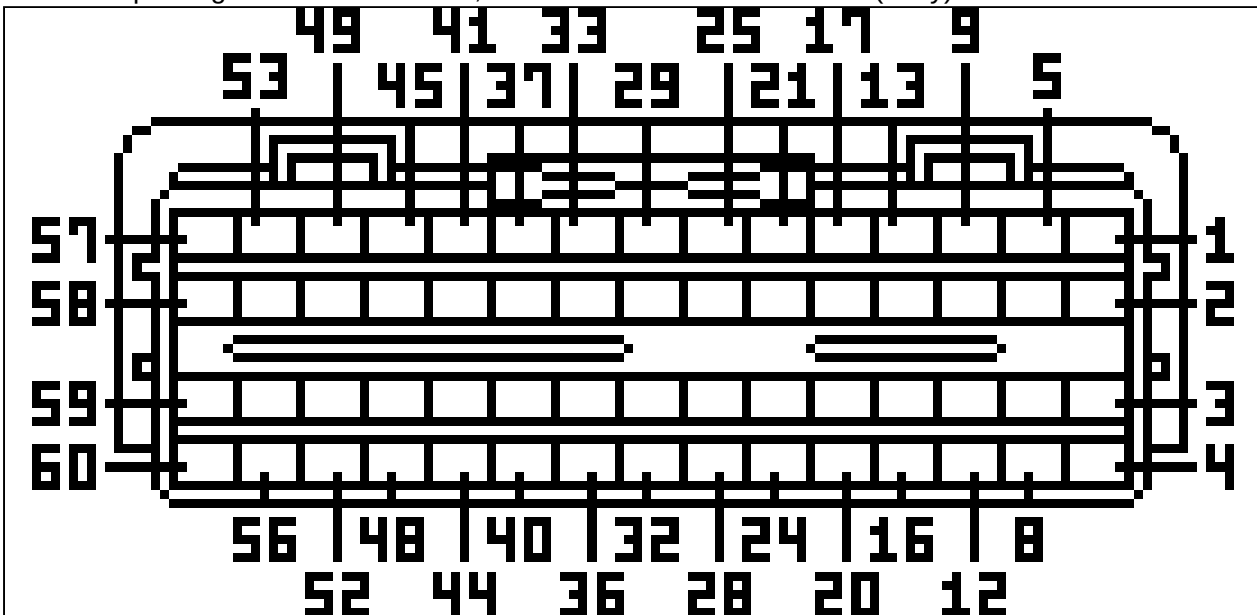
Pin Assignment
01=Rear O2 Sensor Heater Control
02=Ignition Coil 1

03=Ignition Coil 2
04=Not Used
05=TPS 5 Volt Reference
06=TPS 1
07=MAP Sensor
08=Front O2 Sensor (VSIP)
09=Not Used
10=KS Signal
11=Rear O2 Sensor Signal
12=Not Used
13=Variable Tumble Control Solenoid Valve
14=OCV Control
15=Throttle Actuator Control (+)
16=Not Used
17=Fuel Injector 1
18=Ignition Coil 3
19=Ignition Coil 4
20=TPS Ground
21=TPS 2
22=ECT Sensor
23=Front O2 Sensor (IP+)
24=Front O2 Sensor Power Supply
25=KS Ground
26-27=Not Used
28=Variable Intake Air Solenoid Valve
29=Not Used
30=Throttle Actuator Control (-)
31=Front O2 Sensor Heater Control
32=Fuel Injector 2
33-34=Not Used
35=CKP Sensor (+)
36=CMP Sensor (+)
37=Generator Control
38=Variable Tumble Shutter Valve Switch
39=Not Used

40=CKP Sensor Signal
41=CMP Sensor Signal
42=Not Used
43=EGR Valve Coil 1
44=EGR Valve Coil 2
45=Purge Solenoid Valve
46=Not Used
47=Fuel Injector 3
48=Fuel Injector 4
49=Not Used
50=5 Volt Reference (MAP, Variable Tumble Shutter Valve Switch)
51=Not Used
52=Generator Output
53-54=Not Used
55=Shield Wire Ground
56=Not Used
57=Sensor Ground
58=EGR Valve Coil 3
59=EGR Valve Coil 4
60=Not Used

Manual Transmission

View:Backprobing Harness Connector, PCM Connector - 0140 - 101A (Gray)

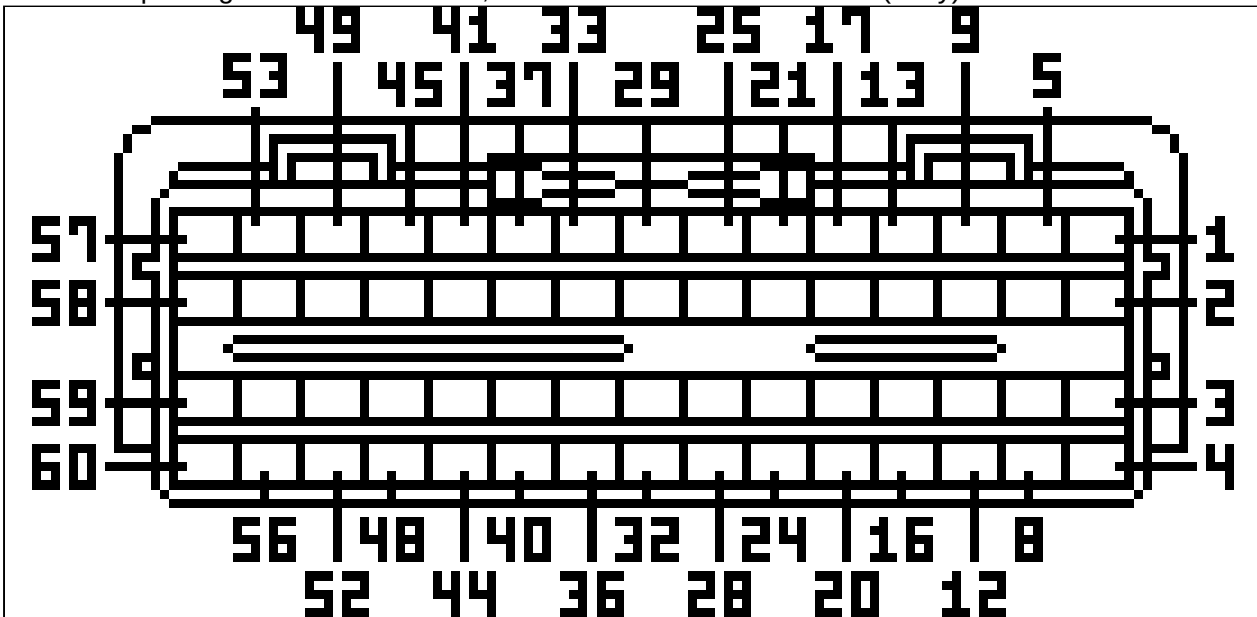


Pin Assignment	Wire Color
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1=Power Supply	Red
2=Power Supply	Gray
3=Back-up Power Supply	Green
4=Not Used	
5=Ground	Black
6=Ground	Black
7=Ground	Black
8=Not Used	
9=A/C Relay	Orange
10-12=Not Used	
13=CV Solenoid Control	SkyBlue
14-15=Not Used	
16=MAF Sensor Ground	Violet
17=Main Relay	Yellow
18=Cooling Fan Control	Violet
19-23=Not Used	
24=APP 2 Sensor	SkyBlue
25-27=Not Used	
28=Brake Switch	Green
29=IAT Sensor	Yellow
30=FTP Sensor 5 Volt Reference	Brown
31=APP Sensor 5 Volt Reference	Gray
32-33=Not Used	
34=FTP Sensor	LtGreen
35=CAN Ground	Red
36=APP Sensor Ground	LtGreen
37=MAF Sensor	Green
38=Not Used	
39=CAN Power	White
40=Cruise Control Switch Ground	SkyBlue
41= Not Used	
42= APP 1 Sensor	Orange
43=Cruise Control Switch	Green
44=Sensor Ground	Gray
45-50=Not Used	

51=Ignition Switch	LtGreen
52=Not Used	
53=EVAP Purge Control	Gray
54=Starter Relay Control	Red
55=Neutral Position Switch	Violet
56=CPP Switch	White
57=Ground	Black
58=Not Used	
59=Fuel Pump Control	Brown
60=Not Used	

View: Backprobing Harness Connector, PCM Connector - 0140 - 101B (Gray)



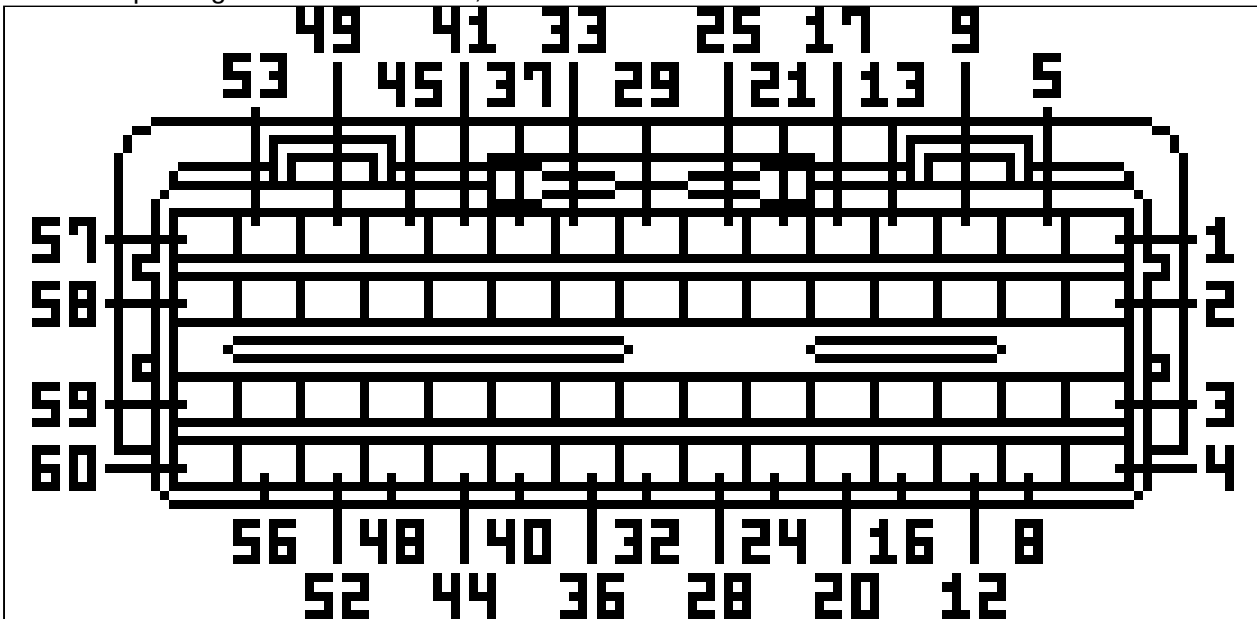
Pin Assignment	Wire Color
1=A/F Sensor Heater Control	LtGreen
2=O2 Sensor Heater Control	SkyBlue
3-4=Not Used	
5=OCV Control Ground	Brown
6=Not Used	
7=Ignition Coil 1	Violet
8=Ignition Coil 4	SkyBlue
9=Variable Tumble Solenoid Valve	Gray
10=Variable Intake Air Solenoid Valve	White
11=Ignition Coil 2	Pink
12=Ignition Coil 3	Orange

13-16=Not Used	
17=O2 Sensor Signal	Brown
18=Variable Tumble Shutter Valve Switch	Yellow
19=CMP Sensor Signal	Gray
20=Not Used	
21=KS Signal	White
22=KS Ground	Orange
23=CKP Sensor Signal	Brown
24=Ground (Sensor Shield)	Black
25=Not Used	
26=A/F Sensor Power	Green
27=Generator Field Coil Control	Red
28=Not Used	
29=A/F Sensor Ground	Yellow
30=A/F Sensor Signal	Blue
31=Not Used	
32=Generator Output Voltage	White
33=MAP Sensor Signal	Red
34=ECT 1 Sensor	Gray
35-36=Not Used	
37=TP Sensor 1	Orange
38=TP Sensor 2	SkyBlue
39=CMP Sensor Power	Blue
40=TP Sensor Ground	Yellow
41=ECT 2 Sensor	Blue
42=Not Used	
43=CKP Sensor Power	Green
44=TP Sensor 5 Volt Reference	LtGreen
45=O2 Sensor Ground	Yellow
46=EGR Valve Control Signal	Violet
47=MAP Sensor 5 Volt Reference	Gray
48=Ground	Pink
49=EGR Valve Control Ground	Pink
50=EGR Valve Control Ground	Yellow
51=Not Used	

52=Fuel Injector 4	Violet
53=EGR Valve Control Power	White
54=Fuel Injector 1	Red
55=Fuel Injector 2	Brown
56=Fuel Injector 3	Pink
57=Throttle Actuator Control Signal	Violet
58=Throttle Actuator Control Ground	Blue
59=OCV Signal	SkyBlue
60=Not Used	

Auto Transmission

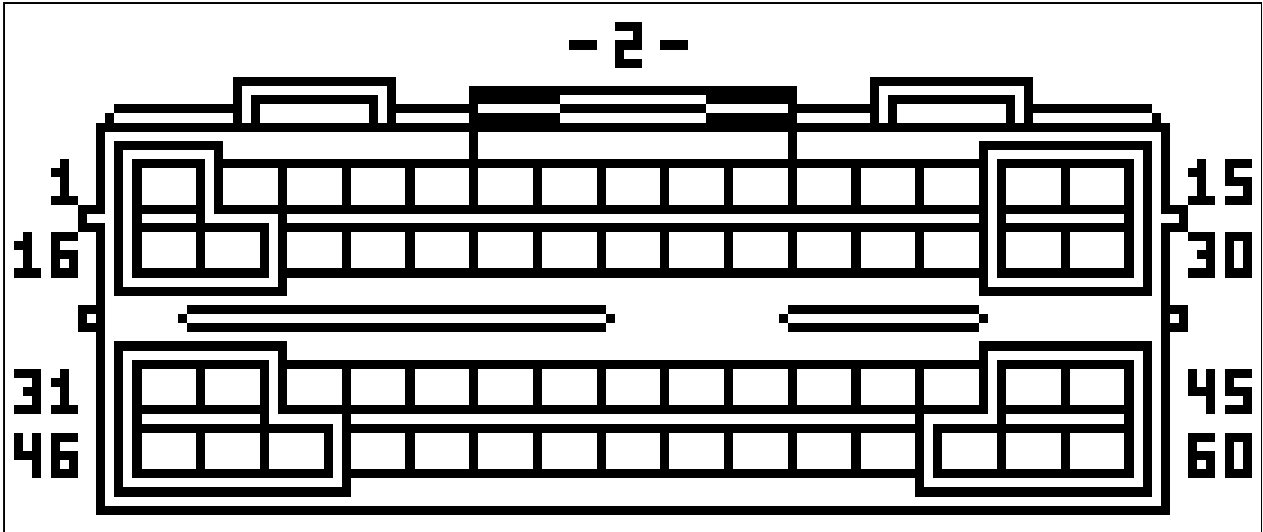
View:Backprobing Harness Connector, PCM Connector



Pin Assignment	Wire Color
01=Power Supply (+)	Red
02=Power Supply (+)	Gray
03=Back-Up Power Supply (+)	Green
04=Not Used	
05=Ground (-)	Black
06=Ground (-)	Black
07=Ground (-)	Black
08=Not Used	
09=A/C	Orange
10-12=Not Used	
13=CV Solenoid Control	SkyBlue

14-15=Not Used	
16=MAF Sensor Ground	Violet
17=Main Control Relay	Yellow
18=Cooling Fan Control	Violet
19-23=Not Used	
24=APP 2 Sensor	SkyBlue
25-27=Not Used	
28=Brake Switch	Green
29=IAT Sensor	Yellow
30=FTP Constant Voltage	Brown
31=APP Constant Voltage	Gray
32-33=Not Used	
34=FTP Sensor	LtGreen
35=CAN Bus (-)	Red
36=APP Sensor Ground	LtGreen
37=MAF Sensor	Green
38=Not Used	
39=CAN Bus (+)	White
40=Cruise Control Switch Ground	SkyBlue
41=Not Used	
42=APP 1 Sensor	Orange
43=Cruise Control Switch	Green
44=Sensor Ground	Gray
45-50=Not Used	
51=Ignition (+)	LtGreen
52=Not Used	
53=Purge Solenoid Control	Gray
54=Starter Relay Control	Red
55=Neutral Position (M/T only)	Violet
56=Clutch Operation (M/T only)	White
57=Ground (-)	Black
58=Not Used	
59=Fuel Pump Control	Brown
60=Not Used	

View:Backprobing Harness Connector, PCM Connector



Pin Assignment	Wire Color
01=A/F Sensor Heater Control	LtGreen
02=HO2S Heater Control	SkyBlue
03-04=Not Used	
05=OCV Control	Brown
06=Not Used	
07=Ignition Coil 1	Violet
08=Ignition Coil 4	SkyBlue
09=Variable Tumble Control	Gray
10=Variable Intake Air Control	White
11=Ignition Coil 2	Pink
12=Ignition Coil 3	Orange
13-16=Not Used	
17=HO2S	Brown
18=Variable Tumble Shutter Valve Monitor	Yellow
19=CMP Signal	Gray
20=Not Used	
21=KS Signal	White
22=KS Ground	Orange
23=CKP Signal	Brown
24=Sensor Shield Ground	Black
25=Not Used	
26=A/F Sensor	Green
27=Generator Field Coil Control	Red
28=Not Used	

29=A/F Sensor	Yellow
30=A/F Sensor	Blue
31=Not Used	
32=Generator Output Voltage	White
33=MAP Sensor	Red
34=ECT 1 Sensor	Gray
35-36=Not Used	
37=TP 1 Sensor	Orange
38=TP 2 Sensor	SkyBlue
39=CMP Power	Blue
40=TP Sensor Ground	Yellow
41=ECT 2 Sensor	Blue
42=Not Used	
43=CKP Sensor Power	Green
44=TP Constant Voltage	LtGreen
45=HO2S Ground	Yellow
46=EGR Valve Control	Violet
47=MAP Sensor Constant Voltage	Gray
48=Sensor Ground	Pink
49=EGR Valve Control	Pink
50=EGR Valve Control	Yellow
51=Not Used	
52=Fuel Injection 4	Violet
53=EGR Valve Control	White
54=Fuel Injection 1	Red
55=Fuel Injection 2	Brown
56=Fuel Injection 3	Pink
57=Throttle Actuator Control (+)	Violet
58=Throttle Actuator Control (-)	Blue
59=OCV Control	SkyBlue
60=Not Used	

Throttle Control System,Accelerator Pedal Position Sensor,Engine

Operation

This sensor contains two position sensors built into one unit, and is used to detect accelerator pedal opening and travel. As the accelerator pedal is depressed, signal voltages at these two sensors will

vary accordingly. This signal is used by the ECM to calculate engine load and compensate fuel delivery accordingly.

This signal is also used by the TCM to adjust line pressure, calculate shift timing, and other related operations.

Accelerator pedal position sensor (APP) is part of an electronic throttle Control system that employs 2 sensors to send signals to PCM. PCM then commands throttle motor to move the throttle plate. Sensors are non contact hall Element design. APP1 (main sensor) outputs a Duty signal, APP2 (sub sensor) outputs a DC voltage signal. If one sensor fails PCM still maintains throttle Control with second sensor. At closed throttle, both APP1 and APP2 reading is low. Under WOT, both read high Value.

Location

Best Test Location:

At two pin connector on the accelerator pedal position sensor.

Component Location:

On the accelerator pedal.

Location

Best Test Location:

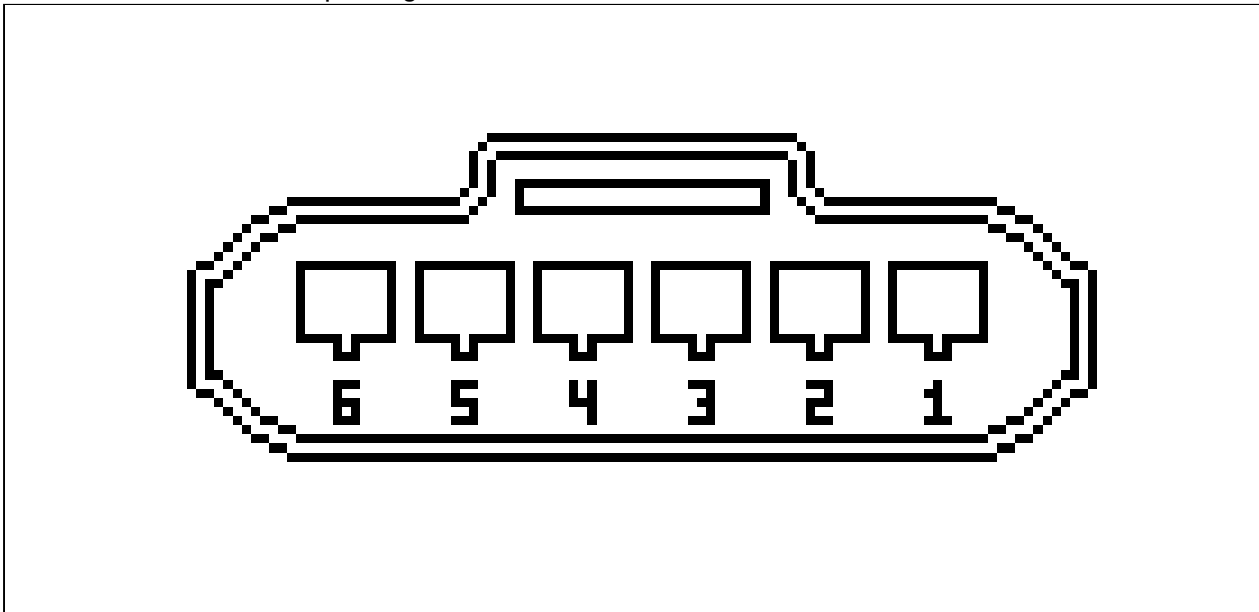
At two pin connector on the accelerator pedal position sensor.

Component Location:

On the accelerator pedal.

Connector

View: Harness Side, Backprobing: APP Sensor - 0140-229



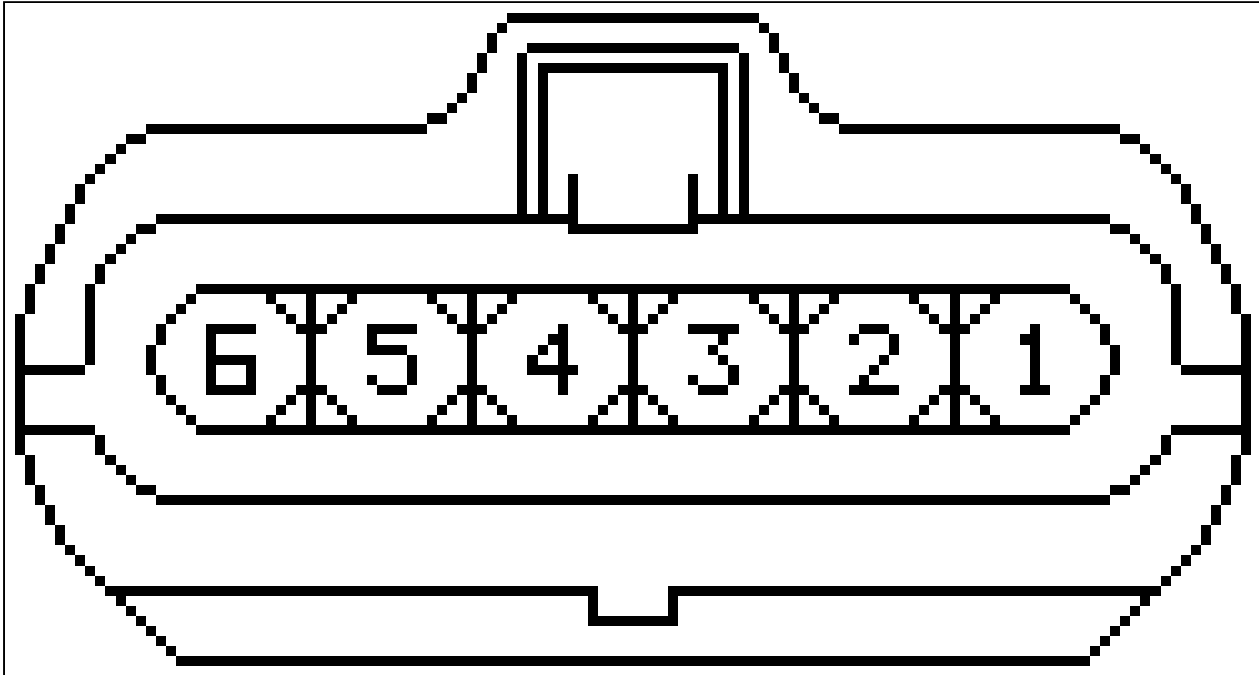
Pin Assignment	Wire Color
1=5V Reference	Green - Yellow
2=APP 1 Signal	Gray
3=APP Sensor Ground	Yellow
4=Ground	Black
5=APP 2 Signal	White

6=Drive-By-Wire Relay Control

Green - Yellow

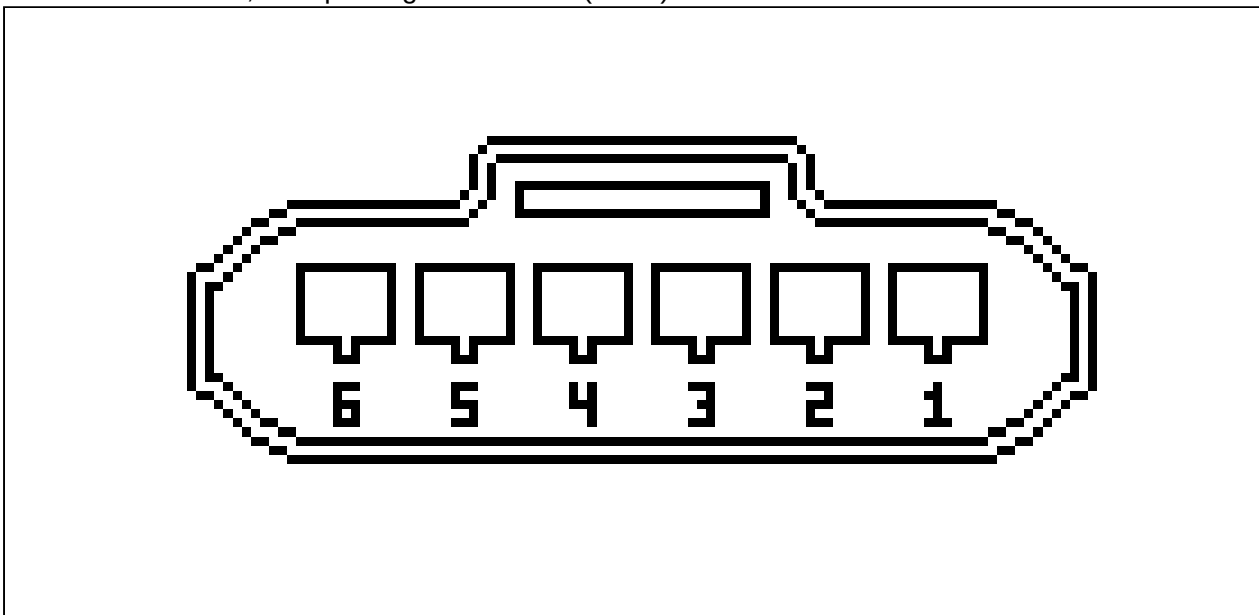
Connector

View: Harness Side, Backprobing - 0140 - 05 (Black)



Pin Assignment	Wire Color
1=APP 5 Volt Reference	Yellow
2=APP Sensor Ground	Brown
3=APP 2 Sensor Signal	White -Red
4=APP Sensor Voltage	Yellow -Red
5=APP Sensor Ground	Brown - Yellow
6=APP 1 Sensor Signal	White

View: Harness Side, Backprobing - 0140 - 117 (Black)



Pin Assignment	Wire Color
1=Ignition Power	Pink
2=APP 2 Sensor Signal	SkyBlue
3=Ground	Black
4=APP Sensor Ground	LtGreen
5=APP 1 Sensor Signal	Orange
6=5 Volt Reference	Gray

Tests

DC Voltage Test

When checking component, values given are approximate. Actual readings may vary.

Connect test leads:

Yellow=APP 1 signal

Green=APP 2 signal

Black=Known good ground.

KOEO, with throttle fully closed.

APP #1 Duty should be 8 percent.

APP #2 voltage should be 1.0 VDC.

Slowly sweep throttle to full open.

APP #1 Duty should reach about 66.5 percent.

APP #2 voltage should reach about 3.3vdc.

there should be no dropouts or glitches during test.

Out Of Range No Signal Test

If voltage is out of Range or no signal appears then: Connect test Leads:

Yellow=ECM(-) or PCM(-)

Black=Known good ground

KOEO, should be below 100mv. If OK,

Connect test Leads:

Yellow=ECM(+5V)

Black=Known good ground

KOEO, should be about 5.0V.

Connect test leads:

Yellow=IGN (+)

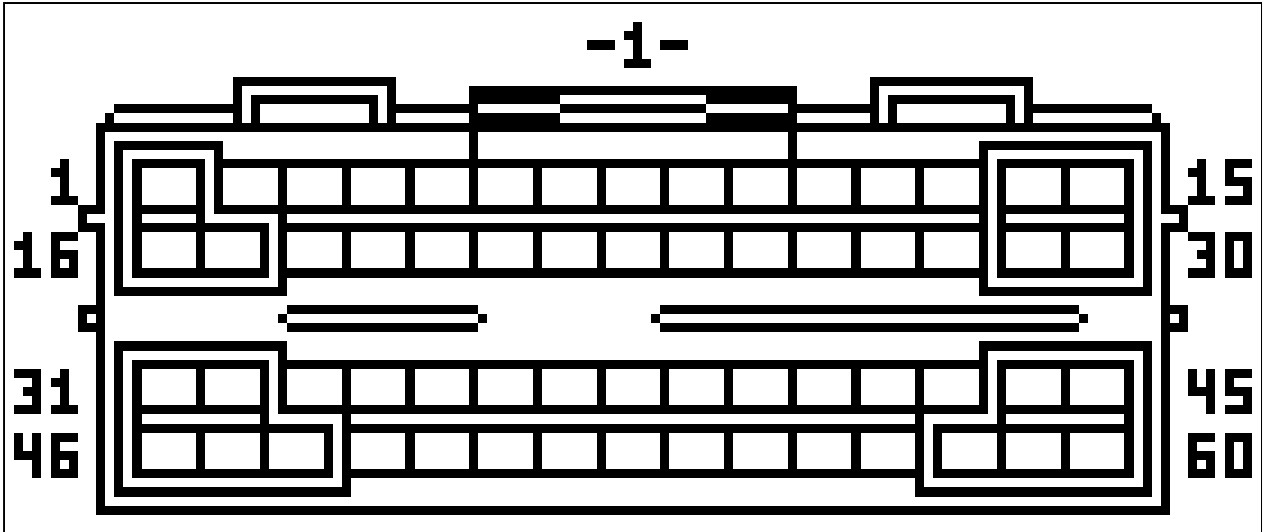
Black=Known good ground

KOEO, should be about 12.0V.

PCM,Transmission

Pinouts

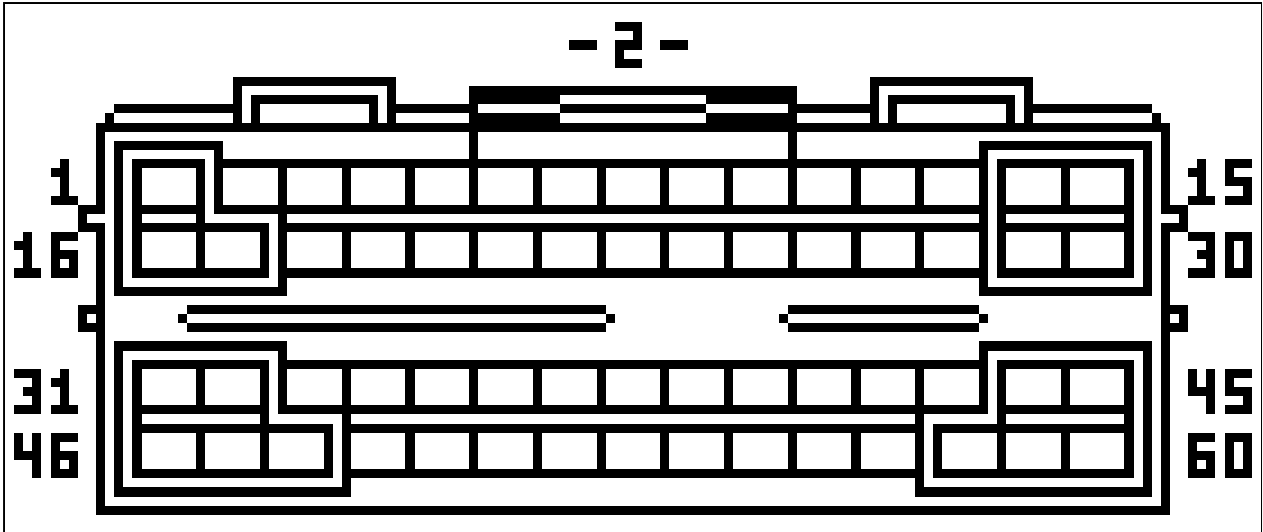
VIEW: BACK PROBING HARNESS CONNECTOR, PCM CONNECTOR



PCM PINS
01=BATT (+)
02=BACK-UP POWER SUPPLY
03=VSS
04=SENSOR GROUND
05=INPUT/TURBINE SPEED SENSOR (+)
06=MAF SENSOR
07=INPUT/TURBINE SPEED SENSOR (-)
08=APP SENSOR 2
09=COOLING FAN MODULE
10=EVAP LDP (PUMP)
11=MAIN RELAY CONTROL
12=LINE PRESSURE CONTROL SOLENOID (+)
13=A/C RELAY
14=SHIFT SOLENOID B
15=SHIFT SOLENOID A
16=DRIVE BY WIRE RELAY (+)
17=GROUND
18=DRIVE-BY-WIRE RELAY CONTROL
19=IAT SENSOR SIGNAL
20=APP 1
21=APP SENSOR (Vref)
22=SELECTOR LEVER POSITION (T/R SWITCH)
23=SHIFT SOLENOID D
24=SHIFT SOLENOID E

25=EVAP LDP (SOLENOID)
26=NOT USED
27=LINE PRESSURE CONTROL SOLENOID (-)
28=REFRIGERANT PRESSURE SWITCH (medium)
29=SHIFT SOLENOID C
30=STARTER RELAY
31=MAIN RELAY
32=NOT USED
33=IGNITION SWITCH
34=A/C ON SIGNAL (REFRIGERANT PRESSURE SWITCH HIGH & LOW)
35=CRUISE CONTROL SWITCH
36=CAN (H)
37=CAN (L)
38-40=NOT USED
41=GROUND(SENSOR SHIELD)
42-45=NOT USED
46-48=GROUND
49=NOT USED
50=MAF SENSOR GROUND
51=MANUAL RANGE SWITCH
52=MANUAL MODE SWITCH (UP)
52=NOT USED
53=MANUAL MODE SWITCH (DOWN)
54=BRAKE SWITCH
55=NOT USED (A/T)
56-58=NOT USED
59=FUEL PUMP RELAY
60=NOT USED (A/T)

VIEW: BACK PROBING HARNESS CONNECTOR, PCM CONNECTOR



PCM PINS
01=REAR O2 SENSOR HEATER CONTROL
02=#1 IGNITION COIL
03=#2 IGNITION COIL
04=NOT USED
05=TPS VOLTAGE REFERENCE
06=TPS #1 SIGNAL
07=MAP SENSOR
08=ATF TEMP SENSOR
09=NOT USED
10=KNOCK SENSOR(+)
11=REAR O2 SENSOR SIGNAL
12=NOT USED
13=VARIABLE TUMBLE CONTROL SOLENOID
14=OIL CONTROL VALVE
15=THROTTLE ACTUATOR CONTROL (+)
16=MIDDLE O2 SENSOR HEATER CONTROL
17=INJECTOR #1
18=#3 IGNITION COIL
19=#4 IGNITION COIL
20=TPS GROUND
21=TPS #2 SIGNAL
22=ECT
23=FRONT O2 SENSOR SIGNAL
24=FRONT O2 SENSOR GROUND

25=KNOCK SENSOR (-)
26=MIDDLE O2 SENSOR SIGNAL
27=NOT USED
28=VARIBLE INTAKE CONTROL SOLENOID
29=NOT USED
30=THROTTLE ACTUATOR CONTROL (-)
31=FRONT O2 SESNOR HEATER CONTROL
32=INJECTOR #2
33=SENSOR GROUND
34=5V REFERENCE
35=CKP VOLTAGE REF
36=CMV VOLTAGE REF
37=GENERATOR CONTROL
38=VARIBLE TUMBLE SHUTTER VALVE SWITCH
39=NOT USED
40=CKP SENSOR SIGNAL
41=CMV SENSOR SIGNAL
42=NOT USED
43=EGR VALVE COIL #1
44=EGR VALVE COIL #2
45=PURGE CONTROL SOLENOID
46=GROUND
47=INJECTOR #3
48=INJECTOR #4
49-51=NOT USED
52=GENERATOR OUTPUT
53-54=NOT USED
55=GROUND (O2 SHIELD)
56-57=NOT USED
58=EGR VALVE COIL#3
59=EGR VALVE COIL #4
60=NOT USED