

YMMS: 2011 Ford Pickup F250 Super Duty  
 Engine: 6.2L Eng  
 VIN:

Oct 25, 2021  
 License:  
 Odometer:

## DTC P0351: IGNITION COIL A PRIMARY/SECONDARY CIRCUIT

### P0351 - IGNITION COIL A PRIMARY/SECONDARY CIRCUIT

<b>Description:</b>	Each ignition primary circuit is continuously monitored. The test fails when the powertrain control module (PCM) does not receive a valid ignition diagnostic monitor (IDM) pulse signal from the ignition module (integrated in the PCM).		
<b>Possible Causes:</b>	<ul style="list-style-type: none"> <li>• Open or short in the ignition START/RUN circuit</li> <li>• Open coil driver circuit in the harness</li> <li>• Coil driver circuit short to ground</li> <li>• Damaged coil</li> <li>• Coil driver circuit short to voltage</li> </ul>		
<b>Diagnostic Aids:</b>	<p>DTC P035x only sets for a coil primary circuit failure. A secondary ignition coil or spark plug failure does not set DTC P035x. DTC P030x does not set for a coil primary circuit malfunction. DTC P035x may set with or without DTC P030x; however DTC P035x sets first.</p> <p>When this DTC is set, the PCM enters failure mode effects management (FMEM) which shuts down the injector for the associated cylinder in order to protect the catalytic converter. This is normal operation; do not attempt to diagnose the injector with this DTC present.</p> <p>If a primary coil is damaged due to a harness short to ground the PCM will not be damaged. Do not replace the PCM without verifying the coil driver functionality. Use the 12-volt non-powered test lamp to verify START/RUN voltage at the ignition coil harness connector.</p> <p>Check the coil driver circuit for open, short to voltage, or short to ground.</p>		
<b>Application</b>	<b>Key On Engine Off</b>	<b>Key On Engine Running</b>	<b>Continuous Memory</b>
Crown Victoria, E-Series, Edge, Escape / Mariner, Expedition, Explorer, F-150, F-Series Super Duty, Focus, Flex, Fusion, Grand	GO to PINPOINT TEST JF .		

Marquis, Milan, MKT, MKX, MKZ, Mustang, Navigator, Taurus, Town Car, Transit Connect	
Ranger, Fiesta	GO to PINPOINT TEST JE .

## TEST PROCEDURES

### JF1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

**NOTE:** *Electronic ignition engine timing is entirely controlled by the PCM. Electronic ignition timing is not adjustable. Do not attempt to check base timing. You will receive false readings.*

**NOTE:** *Pull on the suspect coil connector to determine if it is correctly seated before proceeding with the current diagnostic path. If the suspect coil connector is not seated correctly, reconnect the suspect connector until an audible click can be heard.*

**NOTE:** *Coil letter A through J corresponds with cylinder number 1 through 10.*

**Are DTCs P0351, P0352, P0353, P0354, P0355, P0356, P0357, P0358, P0359, P0360, P2300, P2301, P2303, P2304, P2306, P2307, P2309, P2310, P2312, P2313, P2315 OR P2316 present?**

Yes	No
For F-150 3.5L, GO to JF4. For all others, GO to JF2.	For all other DTCs, GO to DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS . For F-150 3.5L, symptoms with out DTCs, GO to JF4. For all others, symptoms with out DTCs, GO to JF2.

**JF2 CHECK THE FUNCTIONALITY OF THE SUSPECT COIL DRIVER CIRCUIT**

Ignition OFF.

Suspect coil connector disconnected.

Remove the fuel pump fuse to disable the fuel pump.

Connect a non-powered test lamp between the IGN START/RUN and suspect coil driver, harness side.

Observe the test lamp while cranking the engine.

**Is the test lamp blinking consistently?**

Yes	No
GO to JF3.	GO to JF4.

**JF3 CHECK THE FUNCTIONALITY OF THE SUSPECT COIL**

Ignition OFF.

Carry out a visual inspection. Closely inspect the coil case and boot for carbon tracking, cracks and torn or incorrectly installed boots.

Remove the suspect COP from the spark plug.

Connect the Adjustable Ignition Spark Tester THX458 or equivalent.

Suspect coil connector connected.

Crank the engine.

Observe the spark tester while cranking the engine.

**Is a bluish-white spark present?**

Yes	No
GO to PINPOINT TEST Z .	INSTALL a new suspect coil. If necessary, INSTALL a new spark plug. REFER to the appropriate Engine Ignition article. Clear the PCM DTCs. REPEAT the self-test. If the concern or DTC is still present, GO to JF15.

**JF4 CHECK THE IGNITION START/RUN SUPPLY TO THE SUSPECT COIL**

Ignition ON, engine OFF.

Suspect coil connector disconnected.

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) COP Connector, Harness Side	(-) Vehicle Battery
IGN START/RUN	Negative terminal

**Is the voltage greater than 10 V?**

Yes	No
For F-150 3.5L, GO to JF5. For all others, GO to JF6.	For Crown Victoria, Grand Marquis, and Town Car, GO to JF10. For all others, REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF5 CHECK THE SUSPECT COIL GROUND CIRCUIT FOR AN OPEN IN THE HARNESS**

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) COP Connector, Harness Side	(-) COP Connector, Harness Side
IGN START/RUN	GND

**Is the voltage greater than 10 V?**

Yes	No
GO to JF6.	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF6 CHECK THE SUSPECT COIL DRIVER CIRCUIT FOR AN OPEN IN THE HARNESS**

Ignition OFF.

PCM connector disconnected.

Suspect coil connector disconnected.

Measure the resistance between:

**RESISTANCE REFERENCE CHART**

(+) PCM Connector, Harness Side	(-) COP Connector, Harness Side
COP	COP

**Is the resistance less than 5 ohms?**

Yes	No
GO to JF7.	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF7 CHECK THE SUSPECT COIL DRIVER CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS**

Ignition ON, engine OFF.

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) PCM Connector, Harness Side	(-) Vehicle Battery
COP	Negative terminal

**Is the voltage less than 1 V?**

Yes	No
GO to JF8.	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF8 CHECK THE SUSPECT COIL DRIVER CIRCUIT FOR A SHORT TO GROUND IN THE HARNESS**

Ignition OFF.

Measure the resistance between:

**RESISTANCE REFERENCE CHART**

(+) PCM Connector, Harness Side	(-) Vehicle Battery
COP	Negative terminal

**Is the resistance greater than 10K ohms?**

Yes	No
For F-150 3.5L, GO to JF9. For all others, GO to JF14.	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test. If the concern or DTC is still present, GO to JF9.

**JF9 CHECK THE SUSPECT COIL FOR DAMAGE**

PCM connector connected.

Connect the Adjustable Ignition Spark Tester THX458 or equivalent to the suspect coil.

Crank the engine.

Observe the spark tester while cranking the engine.

**Is a bluish-white spark present?**

Yes	No
If necessary, INSTALL a new spark plug. REFER to the appropriate Engine Ignition article. Clear the PCM DTCs. REPEAT the self-test.	INSTALL a new suspect coil. REFER to the appropriate Engine Ignition article. Clear the PCM DTCs. REPEAT the self-test. If the concern or DTC is still present, GO to JF15.

**JF10 CHECK VPWR CIRCUIT CONTINUITY BETWEEN THE SUSPECT COIL AND IGNITION COILS RELAY**

Ignition OFF.

Ignition Coils Relay connector disconnected.

Measure the resistance between:

**RESISTANCE REFERENCE CHART**

(+) Ignition Coils Relay Connector, Harness Side	(-) Suspect coil Connector, Harness Side
VPWR - Pin 3	IGN START/RUN

**Is the resistance less than 5 ohms?**

Yes	No
GO to JF11.	REPAIR the open circuit. The open is between the splice and the ignition coils relay. Clear the PCM DTCs. REPEAT the self-test.

**JF11 CHECK THE B+ AND IGN START/RUN VOLTAGE TO IGNITION COILS RELAY**

Ignition ON, engine OFF.

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) Ignition Coils Relay Connector, Harness Side	(-)
B+ - Pin 5	Ground
IGN START/RUN - Pin 2	Ground

**Are the voltage greater than 10 V?**

Yes	No
GO to JF12.	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF12 CHECK THE IGNITION COILS RELAY GND CIRCUIT FOR AN OPEN IN THE HARNESS**

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) Ignition Coils Relay Connector, Harness Side	(-) Ignition Coils Relay Connector, Harness Side
B+ - Pin 5	GND - Pin 1

**Is the voltage greater than 10 V?**

Yes	No
GO to JF13.	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

**JF13 CHECK THE IGNITION COILS RELAY**

Carry out the ignition coils relay component test. Refer to the appropriate ELECTRONIC ENGINE CONTROLS article.

**Is a concern present?**

Yes	No
INSTALL a new Ignition Coils relay. Clear the PCM DTCs. REPEAT the self-test.	GO to JF14.

**JF14 TEST DIRECTION FOR PINPOINT TEST A**

**Were you directed to this pinpoint test from pinpoint test step A8?**

Yes	No
GO to PINPOINT TEST A step 9 .	GO to JF15.

**JF15 CHECK FOR CORRECT PCM OPERATION**

Disconnect all the PCM connectors.

Visually inspect for:  
 pushed out pins  
 corrosion

Connect all the PCM connectors and make sure they seat correctly.

Carry out the PCM self-test.

Verify the concern is still present.

**Is the concern still present?**

Yes	No
INSTALL a new PCM. REFER to FLASH ELECTRICALLY ERASABLE PROGRAMMABLE READ ONLY MEMORY (EEPROM) , PROGRAMMING THE VID BLOCK FOR A REPLACEMENT PCM .	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

**DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS**

**INDEX**

DTC	Description
P0001	FUEL VOLUME REGULATOR CONTROL CIRCUIT/OPEN
P0003	FUEL VOLUME REGULATOR CONTROL CIRCUIT LOW
P0004	FUEL VOLUME REGULATOR CONTROL CIRCUIT HIGH
P000A	INTAKE A CAMSHAFT POSITION SLOW RESPONSE BANK 1
P000B	EXHAUST B CAMSHAFT POSITION SLOW RESPONSE BANK 1
P0010	INTAKE CAMSHAFT POSITION ACTUATOR CIRCUIT/OPEN (BANK 1)
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P0012	INTAKE CAMSHAFT POSITION TIMING - OVER-RETARDED (BANK 1)
P0013	EXHAUST CAMSHAFT POSITION ACTUATOR CIRCUIT/OPEN (BANK 1)
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P0060	HO2S HEATER RESISTANCE (BANK 2, SENSOR 2)
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P0073	AMBIENT AIR TEMPERATURE SENSOR CIRCUIT HIGH
P0074	AMBIENT AIR TEMPERATURE SENSOR CIRCUIT INTERMITTENT/ERRATIC
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P0315	CRANKSHAFT POSITION SYSTEM VARIATION NOT LEARNED
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P0320	IGNITION/DISTRIBUTOR ENGINE SPEED INPUT CIRCUIT
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P0326	KNOCK SENSOR 1 CIRCUIT RANGE/PERFORMANCE (BANK 1)

P0327	KNOCK SENSOR 1 CIRCUIT LOW (BANK 1)
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P0330	KNOCK SENSOR 2 CIRCUIT (BANK 2)
P0331	KNOCK SENSOR 2 CIRCUIT RANGE/PERFORMANCE (BANK 2)
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P0354	IGNITION COIL D PRIMARY/SECONDARY CIRCUIT
P0355	IGNITION COIL E PRIMARY/SECONDARY CIRCUIT
P0356	IGNITION COIL F PRIMARY/SECONDARY CIRCUIT
P0357	IGNITION COIL G PRIMARY/SECONDARY CIRCUIT
P0358	IGNITION COIL H PRIMARY/SECONDARY CIRCUIT
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P0391	CAMSHAFT POSITION SENSOR B CIRCUIT RANGE/PERFORMANCE (BANK 2)
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P0400	EXHAUST GAS RECIRCULATION (EGR) FLOW
P0401	EXHAUST GAS RECIRCULATION (EGR) FLOW INSUFFICIENT DETECTED

P0402	EXHAUST GAS RECIRCULATION (EGR) FLOW EXCESSIVE DETECTED
P0403	EXHAUST GAS RECIRCULATION (EGR) CONTROL CIRCUIT
P0405	EXHAUST GAS RECIRCULATION (EGR) SENSOR A CIRCUIT LOW
P0406	EXHAUST GAS RECIRCULATION (EGR) SENSOR A CIRCUIT HIGH
P0420	CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1)
P0430	CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2)
P0442	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (SMALL LEAK)
P0443	EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT
P0444	EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE A CIRCUIT OPEN
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P0450	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH
P0451	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH RANGE/PERFORMANCE
P0452	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH LOW
P0453	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH HIGH
P0454	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH INTERMITTENT
P0455	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (GROSS LEAK/NO FLOW)
P0456	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (VERY SMALL LEAK)
P0457	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF)
P0458	EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT LOW
P0459	EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH
P0460	FUEL LEVEL SENSOR A CIRCUIT
P0461	FUEL LEVEL SENSOR A CIRCUIT RANGE/PERFORMANCE
P0462	FUEL LEVEL SENSOR A CIRCUIT LOW
P0463	FUEL LEVEL SENSOR A CIRCUIT HIGH
P0480	FAN 1 CONTROL CIRCUIT
P0481	FAN 2 CONTROL CIRCUIT
P0496	EVAPORATIVE EMISSION SYSTEM HIGH PURGE FLOW
P0497	EVAPORATIVE EMISSION SYSTEM LOW PURGE FLOW
P0500	VEHICLE SPEED SENSOR (VSS) A
P0501	VEHICLE SPEED SENSOR A RANGE/PERFORMANCE
P0503	VEHICLE SPEED SENSOR (VSS) A INTERMITTENT/ERRATIC/HIGH
P0504	BRAKE SWITCH CORRELATION

P0505	IDLE AIR CONTROL (IAC) SYSTEM
P0506	IDLE AIR CONTROL (IAC) SYSTEM RPM LOWER THAN EXPECTED
P0507	IDLE AIR CONTROL (IAC) SYSTEM RPM HIGHER THAN EXPECTED
P050A	COLD START IDLE AIR CONTROL PERFORMANCE
P050B	COLD START IGNITION TIMING PERFORMANCE
P050E	COLD START ENGINE EXHAUST TEMPERATURE OUT OF RANGE
P0511	IDLE AIR CONTROL (IAC) CIRCUIT
P0512	STARTER REQUEST CIRCUIT
P0528	FAN SPEED SENSOR CIRCUIT NO SIGNAL
P052A	COLD START INTAKE (A) CAMSHAFT POSITION TIMING OVER-ADVANCED (BANK 1)
P052B	COLD START INTAKE (A) CAMSHAFT POSITION TIMING OVER-RETARDED (BANK 1)
P052C	COLD START INTAKE (A) CAMSHAFT POSITION TIMING OVER-ADVANCED (BANK 2)
P052D	COLD START INTAKE (A) CAMSHAFT POSITION TIMING OVER-RETARDED (BANK 2)
P053A	POSITIVE CRANKCASE VENTILATION (PCV) HEATER CONTROL CIRCUIT/OPEN
P053F	COLD START FUEL PRESSURE PERFORMANCE
P054A	COLD START EXHAUST (B) CAMSHAFT POSITION TIMING OVER-ADVANCED (BANK 1)
P054B	COLD START EXHAUST (B) CAMSHAFT POSITION TIMING OVER-RETARDED (BANK 1)
P054C	COLD START EXHAUST (B) CAMSHAFT POSITION TIMING OVER-ADVANCED (BANK 2)
P054D	) COLD START EXHAUST (B) CAMSHAFT POSITION TIMING OVER-RETARDED (BANK 2)
P0552	POWER STEERING PRESSURE (PSP) SENSOR/SWITCH CIRCUIT LOW
P0553	POWER STEERING PRESSURE (PSP) SENSOR CIRCUIT HIGH INPUT
P0562	SYSTEM VOLTAGE LOW
P0563	SYSTEM VOLTAGE HIGH
P0571	BRAKE SWITCH A CIRCUIT
P0572	BRAKE SWITCH A CIRCUIT LOW
P0573	BRAKE SWITCH A CIRCUIT HIGH
P0579	CRUISE CONTROL MULTIFUNCTION INPUT A CIRCUIT RANGE/PERFORMANCE
P0581	CRUISE CONTROL MULTIFUNCTION INPUT A CIRCUIT HIGH
P0600	SERIAL COMMUNICATION LINK
P0602	POWERTRAIN CONTROL MODULE (PCM) PROGRAMMING ERROR
P0603	INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR
P0604	INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR
P0605	INTERNAL CONTROL MODULE READ ONLY MEMORY (ROM) ERROR

P0606	CONTROL MODULE PROCESSOR
P0607	CONTROL MODULE PERFORMANCE
P060A	INTERNAL CONTROL MODULE MONITORING PROCESSOR PERFORMANCE
P060B	INTERNAL CONTROL MODULE A/D PROCESSING PERFORMANCE
P060C	INTERNAL CONTROL MODULE MAIN PROCESSOR PERFORMANCE
P060D	INTERNAL CONTROL MODULE ACCELERATOR PEDAL POSITION PERFORMANCE
P0610	CONTROL MODULE VEHICLE OPTIONS ERROR
P0616	STARTER RELAY CIRCUIT LOW
P0617	STARTER RELAY CIRCUIT HIGH
P061A	INTERNAL CONTROL MODULE TORQUE PERFORMANCE
P061B	INTERNAL CONTROL MODULE TORQUE CALCULATION PERFORMANCE
P061C	INTERNAL CONTROL MODULE ENGINE RPM PERFORMANCE
P061D	INTERNAL CONTROL MODULE ENGINE AIR MASS PERFORMANCE
P061F	INTERNAL CONTROL MODULE THROTTLE ACTUATOR CONTROLLER PERFORMANCE
P0620	GENERATOR CONTROL CIRCUIT
P0622	GENERATOR FIELD TERMINAL CIRCUIT
P0625	GENERATOR FIELD TERMINAL CIRCUIT LOW
P0626	GENERATOR FIELD TERMINAL CIRCUIT HIGH
P0627	FUEL PUMP A CONTROL CIRCUIT/OPEN
P062C	INTERNAL CONTROL MODULE VEHICLE SPEED PERFORMANCE
P062F	INTERNAL CONTROL MODULE EEPROM ERROR (PCM)
P062F	INTERNAL CONTROL MODULE EEPROM ERROR (TCM)
P0630	VIN NOT PROGRAMMED OR INCOMPATIBLE - ECM/PCM
P0642	SENSOR REFERENCE VOLTAGE A CIRCUIT LOW
P0643	SENSOR REFERENCE VOLTAGE A CIRCUIT HIGH
P064D	INTERNAL CONTROL MODULE O2 SENSOR PROCESSOR PERFORMANCE - BANK 1
P064E	INTERNAL CONTROL MODULE O2 SENSOR PROCESSOR PERFORMANCE - BANK 2
P0652	SENSOR REFERENCE VOLTAGE B CIRCUIT LOW
P0653	SENSOR REFERENCE VOLTAGE B CIRCUIT HIGH
P0657	ACTUATOR SUPPLY VOLTAGE A CIRCUIT/OPEN
P065B	GENERATOR CONTROL CIRCUIT RANGE/PERFORMANCE
P065C	GENERATOR MECHANICAL PERFORMANCE
P0660	INTAKE MANIFOLD TUNING VALVE (IMTV) CONTROL CIRCUIT OPEN - BANK 2

P0663	INTAKE MANIFOLD TUNING VALVE (IMTV) CONTROL CIRCUIT OPEN - BANK 2
P0685	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY CONTROL CIRCUIT/OPEN
P0686	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY CONTROL CIRCUIT LOW
P0687	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY CONTROL CIRCUIT HIGH
P0689	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY SENSE CIRCUIT LOW
P068A	ECM/PCM POWER RELAY DE-ENERGIZED - TOO EARLY
P0690	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY SENSE CIRCUIT HIGH
P0691	FAN 1 CONTROL CIRCUIT LOW
P0692	FAN 1 CONTROL CIRCUIT HIGH
P06B6	INTERNAL CONTROL MODULE KNOCK SENSOR PROCESSOR 1 PERFORMANCE
P06B8	INTERNAL CONTROL MODULE NON-VOLATILE RANDOM ACCESS MEMORY (NVRAM) ERROR
P06D1	INTERNAL CONTROL MODULE IGNITION COIL CONTROL MODULE PERFORMANCE
P0703	BRAKE SWITCH B INPUT CIRCUIT
P0704	CLUTCH SWITCH INPUT CIRCUIT
P0720	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT
P0721	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT RANGE/PERFORMANCE
P0722	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT NO SIGNAL
P0723	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT INTERMITTENT
P07XX	TRANSMISSION CODE
P0815	UPSHIFT SWITCH CIRCUIT
P0830	CLUTCH PEDAL SWITCH A CIRCUIT
P0833	CLUTCH PEDAL SWITCH B CIRCUIT
P0840	TRANSMISSION FLUID PRESSURE SENSOR/SWITCH A CIRCUIT
P09XX	TRANSMISSION CODE
P0A3B	GENERATOR OVER TEMPERATURE
P0A5A	GENERATOR CURRENT SENSOR CIRCUIT RANGE/PERFORMANCE
P0A5B	GENERATOR CURRENT SENSOR CIRCUIT LOW
P0A5C	GENERATOR CURRENT SENSOR CIRCUIT HIGH
P1000	ON-BOARD DIAGNOSTIC (OBD) SYSTEMS READINESS TEST NOT COMPLETE

P1001	KEY ON ENGINE RUNNING (KOER) NOT ABLE TO COMPLETE, KOER ABORTED
P1100	MASS AIR FLOW (MAF) SENSOR CIRCUIT INTERMITTENT
P1101	MASS AIR FLOW (MAF) SENSOR OUT OF SELF-TEST RANGE
P1112	INTAKE AIR TEMPERATURE (IAT) CIRCUIT INTERMITTENT
P1114	INTAKE AIR TEMPERATURE 2 (IAT2) CIRCUIT LOW (SUPERCHARGED/TURBOCHARGED ENGINES)
P1115	INTAKE AIR TEMPERATURE 2 (IAT2) CIRCUIT HIGH (SUPERCHARGED/TURBOCHARGED ENGINES)
P1116	ENGINE COOLANT TEMPERATURE (ECT) SENSOR OUT OF SELF-TEST RANGE
P1117	ENGINE COOLANT TEMPERATURE (ECT) SENSOR CIRCUIT INTERMITTENT
P1120	THROTTLE POSITION SENSOR A OUT OF RANGE LOW (RATCH TOO LOW)
P1121	THROTTLE POSITION SENSOR A INCONSISTENT WITH MAF/MAP SENSOR
P1124	THROTTLE POSITION SENSOR A OUT OF SELF-TEST RANGE
P1127	EXHAUST TEMPERATURE OUT OF RANGE, O2 SENSOR TESTS NOT COMPLETED
P115E	THROTTLE ACTUATOR CONTROL (TAC) THROTTLE BODY AIR FLOW TRIM AT MAX LIMIT
P117A	ENGINE OIL OVER TEMPERATURE - FORCED LIMITED POWER
P1227	WASTEGATE FAILED CLOSED (OVER PRESSURE)
P1228	WASTEGATE FAILED OPEN (UNDER PRESSURE)
P1229	CHARGE AIR COOLER (CAC) PUMP DRIVER
P1233	FUEL PUMP DRIVER MODULE DISABLED OR OFF LINE
P1235	FUEL PUMP CONTROL OUT OF RANGE
P1237	FUEL PUMP SECONDARY CIRCUIT
P1244	ALTERNATOR LOAD HIGH INPUT
P1245	ALTERNATOR LOAD LOW INPUT
P1246	ALTERNATOR LOAD INPUT
P1260	THEFT DETECTED, VEHICLE IMMOBILIZED
P1270	ENGINE RPM OR VEHICLE SPEED LIMITER REACHED
P1285	CYLINDER HEAD OVER TEMPERATURE CONDITION
P1288	CYLINDER HEAD TEMPERATURE (CHT) SENSOR OUT OF SELF-TEST RANGE
P1289	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT HIGH
P128A	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT INTERMITTENT/ERRATIC
P1290	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT LOW
P1299	CYLINDER HEAD OVER TEMPERATURE PROTECTION ACTIVE

P130D	ENGINE KNOCK/COMBUSTION PERFORMANCE - FORCED LIMITED POWER
P1336	CRANKSHAFT/CAMSHAFT SENSOR RANGE/PERFORMANCE
P1397	SYSTEM VOLTAGE OUT OF SELF-TEST RANGE
P1405	DIFFERENTIAL PRESSURE FEEDBACK SENSOR UPSTREAM HOSE OFF OR PLUGGED
P1406	DIFFERENTIAL PRESSURE FEEDBACK SENSOR DOWNSTREAM HOSE OFF OR PLUGGED
P1408	EXHAUST GAS RECIRCULATION (EGR) FLOW OUT OF SELF-TEST RANGE
P1409	EXHAUST GAS RECIRCULATION (EGR) VACUUM REGULATOR SOLENOID CIRCUIT
P144A	EVAPORATIVE EMISSION SYSTEM PURGE VAPOR LINE RESTRICTED/BLOCKED
P144C	EVAPORATIVE EMISSION SYSTEM PURGE CHECK VALVE PERFORMANCE
P1450	UNABLE TO BLEED UP FUEL TANK VACUUM
P1451	EVAPORATIVE EMISSION SYSTEM VENT CONTROL CIRCUIT
P145E	PCV HEATER CONTROL B CIRCUIT
P1474	FAN CONTROL PRIMARY CIRCUIT
P1479	HIGH FAN CONTROL PRIMARY CIRCUIT
P1489	PCV HEATER CONTROL CIRCUIT
P1500	VEHICLE SPEED SENSOR (VSS)
P1501	VEHICLE SPEED SENSOR (VSS) OUT OF SELF-TEST RANGE
P1502	VEHICLE SPEED SENSOR (VSS) INTERMITTENT
P1504	IDLE AIR CONTROL (IAC) CIRCUIT
P1506	IDLE AIR CONTROL (IAC) OVERSPEED ERROR
P1507	IDLE AIR CONTROL (IAC) UNDERSPEED ERROR
P1548	ENGINE AIR FILTER RESTRICTION
P1550	POWER STEERING PRESSURE (PSP) SENSOR OUT OF SELF-TEST RANGE
P1561	BRAKE LINE PRESSURE SENSOR CIRCUIT
P1572	BRAKE PEDAL SWITCH CIRCUIT
P1575	PEDAL POSITION OUT OF SELF TEST RANGE
P1588	THROTTLE CONTROL DETECTED LOSS OF RETURN SPRING
P160A	CONTROL MODULE VEHICLE OPTIONS RECONFIGURATION ERROR
P161A	INCORRECT RESPONSE FROM IMMOBILIZER CONTROL MODULE
P1633	KEEP ALIVE POWER (KAPWR) VOLTAGE TOO LOW
P1635	TIRE/AXLE RATIO OUT OF ACCEPTABLE RANGE
P1636	INDUCTIVE SIGNATURE CHIP COMMUNICATION ERROR

P1639	VEHICLE ID (VID) BLOCK CORRUPTED, NOT PROGRAMMED
P1640	POWERTRAIN DTCS AVAILABLE IN ANOTHER MODULE
P1646	LINEAR O2 SENSOR CONTROL CHIP (BANK 1)
P1647	LINEAR O2 SENSOR CONTROL CHIP (BANK 2)
P164A	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT PERFORMANCE (BANK 1 SENSOR 1)
P164B	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT PERFORMANCE (BANK 2 SENSOR 1)
P1650	POWER STEERING PRESSURE (PSP) SWITCH OUT OF SELF-TEST RANGE
P1647	CONTROL MODULE SOFTWARE CORRUPTED
P1703	BRAKE SWITCH OUT OF SELF-TEST RANGE
P1705	TRANSMISSION RANGE SENSOR OUT OF SELF-TEST RANGE
P1709	PARK/NEUTRAL POSITION (PNP) SWITCH OUT OF SELF-TEST RANGE
P1729	4X4L SWITCH
P1780	TRANSMISSION CONTROL SWITCH (TCS) OUT OF SELF-TEST RANGE
P1781	4X4L SWITCH OUT OF SELF-TEST RANGE
P1793	IGNITION SUPPLY MALFUNCTION
DTC P17XX:	DTC P17XX:
DTC P18XX:	DTC P18XX:
P1900	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT INTERMITTENT
P1901	TURBINE SHAFT SPEED (TSS) SENSOR CIRCUIT INTERMITTENT
P193C	STEERING WHEEL ANGLE SIGNAL
P2004	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 1)
P2005	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 2)
P2006	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 1)
P2007	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 2)
P2008	INTAKE MANIFOLD RUNNER CONTROL (IMRC) CIRCUIT OPEN (BANK 1)
P2014	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT (BANK 1)
P2015	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT RANGE/PERFORMANCE (BANK 1)
P2020	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT RANGE/PERFORMANCE (BANK 2)
P2025	EVAPORATIVE EMISSIONS FUEL VAPOR TEMPERATURE SENSOR CIRCUIT PERFORMANCE
P2026	EVAPORATIVE EMISSIONS FUEL VAPOR TEMPERATURE SENSOR CIRCUIT LOW

	VOLTAGE
P2027	EVAPORATIVE EMISSIONS FUEL VAPOR TEMPERATURE SENSOR CIRCUIT HIGH VOLTAGE
P2065	FUEL LEVEL SENSOR B CIRCUIT
P2066	FUEL LEVEL SENSOR B CIRCUIT RANGE/PERFORMANCE
P2067	FUEL LEVEL SENSOR B CIRCUIT LOW
P2068	FUEL LEVEL SENSOR B CIRCUIT HIGH
P2070	INTAKE MANIFOLD TUNING VALVE (IMTV) STUCK OPEN BANK 1
P2071	INTAKE MANIFOLD TUNING VALVE (IMTV) STUCK CLOSED BANK 1
P2072	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - ICE BREAKAGE
P2088	A CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT LOW BANK 1
P2089	A CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT HIGH BANK 1
P2090	B CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT LOW BANK 1
P2091	B CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT HIGH BANK 1
P2096	POST CATALYST FUEL TRIM SYSTEM TOO LEAN BANK 1
P2097	POST CATALYST FUEL TRIM SYSTEM TOO RICH BANK 1
P2098	POST CATALYST FUEL TRIM SYSTEM TOO LEAN BANK 2
P2099	POST CATALYST FUEL TRIM SYSTEM TOO RICH BANK 2
P2100	THROTTLE ACTUATOR CONTROL (TAC) MOTOR CIRCUIT/OPEN
P2101	THROTTLE ACTUATOR CONTROL (TAC) MOTOR RANGE/PERFORMANCE
P2104	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED IDLE
P2105	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED ENGINE SHUTDOWN
P2107	THROTTLE ACTUATOR CONTROL (TAC) MODULE PROCESSOR
P2109	THROTTLE/PEDAL POSITION SENSOR A MINIMUM STOP PERFORMANCE
P2110	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED LIMITED RPM
P2111	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - STUCK OPEN
P2112	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - STUCK CLOSED
P2118	THROTTLE ACTUATOR A CONTROL MOTOR CURRENT RANGE/PERFORMANCE
P2119	THROTTLE ACTUATOR A CONTROL THROTTLE BODY RANGE/PERFORMANCE
P2121	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT RANGE/PERFORMANCE
P2122	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT LOW
P2123	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT HIGH
P2126	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT RANGE/PERFORMANCE

P2127	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT LOW
P2128	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT HIGH
P2131	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT RANGE/PERFORMANCE
P2132	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT LOW
P2133	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT HIGH
P2135	THROTTLE/PEDAL POSITION SENSOR/SWITCH A/B VOLTAGE CORRELATION
P2138	THROTTLE/PEDAL POSITION SENSOR/SWITCH D/E VOLTAGE CORRELATION
P2163	THROTTLE/PEDAL POSITION SENSOR A MAXIMUM STOP PERFORMANCE
P2176	THROTTLE ACTUATOR A CONTROL SYSTEM - IDLE POSITION NOT LEARNED
P2195	O2 SENSOR SIGNAL BIASED/STUCK LEAN - BANK 1, SENSOR 1
P2196	O2 SENSOR SIGNAL BIASED/STUCK RICH - BANK 1, SENSOR 1
P2197	O2 SENSOR SIGNAL BIASED/STUCK LEAN - BANK 2, SENSOR 1
P2198	O2 SENSOR SIGNAL BIASED/STUCK RICH - BANK 2, SENSOR 1
P219A	BANK 1 AIR/FUEL RATIO IMBALANCE
P219B	BANK 2 AIR/FUEL RATIO IMBALANCE
P2227	BAROMETRIC PRESSURE SENSOR A CIRCUIT RANGE/PERFORMANCE
P2228	BAROMETRIC PRESSURE SENSOR A CIRCUIT LOW
P2229	BAROMETRIC PRESSURE SENSOR A CIRCUIT HIGH
P2237	O2 SENSOR POSITIVE CURRENT CONTROL CIRCUIT OPEN - BANK 1, SENSOR 1
P2240	O2 SENSOR POSITIVE CURRENT CONTROL CIRCUIT OPEN - BANK 2, SENSOR 1
P2243	O2 SENSOR REFERENCE VOLTAGE CIRCUIT OPEN - BANK 1, SENSOR 1
P2247	O2 SENSOR REFERENCE VOLTAGE CIRCUIT OPEN - BANK 2, SENSOR 1
P2251	O2 SENSOR NEGATIVE CURRENT CONTROL CIRCUIT OPEN - BANK 1, SENSOR 1
P2254	O2 SENSOR NEGATIVE CURRENT CONTROL CIRCUIT OPEN - BANK 2, SENSOR 1
P2270	O2 SENSOR SIGNAL STUCK LEAN - BANK 1, SENSOR 2
P2271	O2 SENSOR SIGNAL STUCK RICH - BANK 1, SENSOR 2
P2272	O2 SENSOR SIGNAL STUCK LEAN - BANK 2, SENSOR 2
P2273	O2 SENSOR SIGNAL STUCK RICH - BANK 2, SENSOR 2
P2279	INTAKE AIR SYSTEM LEAK
P2280	AIR FLOW RESTRICTION/AIR LEAK BETWEEN AIR FILTER AND MAF BANK 1
P2281	AIR LEAK BETWEEN MAF AND THROTTLE BODY
P2282	AIR LEAK BETWEEN THROTTLE BODY AND INTAKE VALVE
P2297	O2 SENSOR OUT OF RANGE DURING DECELERATION (BANK 1, SENSOR 1)

P2300	IGNITION COIL A PRIMARY CONTROL CIRCUIT LOW
P2301	IGNITION COIL A PRIMARY CONTROL CIRCUIT HIGH
P2303	IGNITION COIL B PRIMARY CONTROL CIRCUIT LOW
P2304	IGNITION COIL B PRIMARY CONTROL CIRCUIT HIGH
P2306	IGNITION COIL C PRIMARY CONTROL CIRCUIT LOW
P2307	IGNITION COIL C PRIMARY CONTROL CIRCUIT HIGH
P2309	IGNITION COIL D PRIMARY CONTROL CIRCUIT LOW
P2310	IGNITION COIL D PRIMARY CONTROL CIRCUIT HIGH
P2312	IGNITION COIL E PRIMARY CONTROL CIRCUIT LOW
P2313	IGNITION COIL E PRIMARY CONTROL CIRCUIT HIGH
P2315	IGNITION COIL F PRIMARY CONTROL CIRCUIT LOW
P2316	IGNITION COIL F PRIMARY CONTROL CIRCUIT HIGH
P2510	ECM/PCM POWER RELAY SENSE CIRCUIT RANGE/PERFORMANCE
P260F	EVAPORATIVE SYSTEM MONITORING PROCESSOR PERFORMANCE
P2610	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) INTERNAL ENGINE OFF TIMER PERFORMANCE
P2626	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT/OPEN (BANK 1 SENSOR 1)
P2627	O2 SENSOR PUMPING CURRENT TRIM CIRCUIT LOW BANK 1, SENSOR 1
P2628	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT HIGH (BANK 1 SENSOR 1)
P2629	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT/OPEN (BANK 2 SENSOR 1)
P2630	O2 SENSOR PUMPING CURRENT TRIM CIRCUIT LOW BANK 2, SENSOR 1
P2631	O2 SENSOR POSITIVE CURRENT TRIM CIRCUIT HIGH (BANK 2 SENSOR 1)
P2632	FUEL PUMP B CONTROL CIRCUIT/OPEN
P2A01	O2 CIRCUIT RANGE/PERFORMANCE BANK 1, SENSOR 2
P2A04	O2 CIRCUIT RANGE/PERFORMANCE BANK 2, SENSOR 2
U0101	LOST COMMUNICATION WITH TRANSAXLE CONTROL MODULE (TCM)
U0109	LOST COMMUNICATION WITH FUEL PUMP CONTROL MODULE A
U0120	LOST COMMUNICATION WITH STARTER/GENERATOR CONTROL MODULE
U0121	LOST COMMUNICATION WITH ANTI-LOCK BRAKE SYSTEM (ABS) CONTROL MODULE
U0140	LOST COMMUNICATION WITH BODY CONTROL MODULE
U0155	LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER CONTROL MODULE
U016C	LOST COMMUNICATION WITH FUEL PUMP CONTROL MODULE B
U029F	LOST COMMUNICATION WITH EVAPORATIVE EMISSION SYSTEM LEAK DETECTION CONTROL MODULE

U0300	INTERNAL CONTROL MODULE SOFTWARE INCOMPATIBILITY
U0402	INVALID DATA RECEIVED FROM TCM
U0415	INVALID DATA RECEIVED FROM ABS CONTROL MODULE
U0422	INVALID DATA RECEIVED FROM BODY CONTROL MODULE
U0423	INVALID DATA RECEIVED FROM IPC
U0469	INVALID DATA RECEIVED FROM STARTER/GENERATOR CONTROL MODULE
U05A0	INVALID DATA RECEIVED FROM EVAPORATIVE EMISSION SYSTEM LEAK DETECTION CONTROL MODULE
U1039	SCP (J1850) INVALID OR MISSING DATA FOR VEHICLE SPEED
U210B	LOST COMMUNICATION BETWEEN FUEL PUMP CONTROL MODULE A AND RESTRAINTS CONTROL MODULE
U210C	LOST COMMUNICATION BETWEEN FUEL PUMP CONTROL MODULE B AND RESTRAINTS CONTROL MODULE
U300C	IGNITION INPUT OFF/ON/START

**NOTE:** Refer to the appropriate service information to diagnose the body and chassis DTCs.

**NOTE:** An X equals any number 0 through 9 or the letter A through F.

**TEST PROCEDURE**

**JE1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)**

Are DTCs P0351, P0352, P0353, P2300, P2301, P2303 or P2304 present?

Yes	No
For DTCs P0351, P0352 or P0353, GO to JE2. For DTCs P2300, P2301, P2303 or P2304, GO to JE4.	For all other DTCs, GO to DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS .

**JE2 DETERMINE WHICH COIL IS NOT FIRING CORRECTLY**

**NOTE:** Electronic ignition engine timing is entirely controlled by the PCM. Electronic ignition timing is not adjustable. Do not attempt to check base timing. You will receive false readings.

Determine which coil is not firing correctly using the information from Pinpoint Test JB or a DTC and the table at the beginning of this pinpoint test.

Record the suspect cylinder, coil and PCM pin number from the table.

**Is the suspect cylinder number, coil driver and PCM pin number recorded?**

Yes	No
GO to JE3.	To obtain the required information, REPEAT step, GO to JE2.

**JE3 DTC P0351, P0352, P0353: CHECK IGN START/RUN VOLTAGE TO THE COIL PACK**

Suspect coil connector disconnected.

Ignition ON, engine OFF.

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) Coil Pack Assembly Connector, Harness Side	(-)
IGN START/RUN	Ground

**Is the voltage greater than 10 V?**

Yes	No
GO to JE4.	The IGN START/RUN has a circuit concern. CHECK the condition of the related fuses/fuse links. If OK, REPAIR the open circuit. If the fuse/fuse link is damaged, CHECK the IGN START/RUN <b>circuit</b> for a short to ground. REPAIR as necessary. CARRY OUT the misfire monitor drive cycle. REFER to ON BOARD DIAGNOSTIC (OBD) DRIVE CYCLE . Clear the PCM DTCs. REPEAT the self-test.

**JE4 CHECK THE FUNCTIONALITY OF THE SUSPECT COIL DRIVER (CD) CIRCUIT**

Ignition OFF.

Remove the fuel pump fuse to disable the fuel pump.

Connect a test lamp between IGN START/RUN and the suspect CD circuit (determined from the table) at the coil pack harness connector.

Observe the test lamp while cranking the engine.

**Does the test lamp blink consistently?**

Yes	No
GO to JE8.	GO to JE5.

**JE5 CHECK THE SUSPECT CD CIRCUIT FOR AN OPEN IN THE HARNESS**

Ignition OFF.

PCM connector disconnected.

Measure the resistance between:

**RESISTANCE REFERENCE CHART**

(+) Coil Pack Assembly Connector, Harness Side	(-) PCM Connector, Harness Side
Suspect coil driver	Suspect coil driver

**Is the resistance less than 5 ohms?**

Yes	No
GO to JE6.	REPAIR the open circuit. CARRY out the misfire monitor drive cycle. REFER to ON BOARD DIAGNOSTIC (OBD) DRIVE CYCLE . Clear the PCM DTCs. REPEAT the self-test.

**JE6 CHECK THE SUSPECT CD CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS**

Ignition ON, engine OFF.

Measure the voltage between:

**VOLTAGE REFERENCE CHART**

(+) PCM Connector, Harness Side	(-)
Suspect coil driver	Ground

**Is any voltage present?**

Yes	No
REPAIR the short circuit. CARRY out the misfire monitor drive cycle. REFER to ON BOARD DIAGNOSTIC (OBD) DRIVE CYCLE . Clear the PCM DTCs. REPEAT the self-test.	GO to JE7.

**JE7 CHECK THE SUSPECT CD CIRCUIT FOR A SHORT TO GROUND IN THE HARNESS**

Ignition OFF.

Measure the resistance between:

**RESISTANCE REFERENCE CHART**

(+) PCM Connector, Harness Side	(-)
Suspect coil driver	Ground

**Is the resistance greater than 10K ohms?**

Yes	No
GO to JE9.	REPAIR the short circuit. CARRY out the misfire monitor drive cycle. REFER to ON BOARD DIAGNOSTIC (OBD) DRIVE CYCLE . Clear the PCM DTCs. REPEAT the self-test.

**JE8 CHECK THE SUSPECT COIL FOR DAMAGE**

Ignition OFF.

Remove the spark plug wire from the suspect coil tower (as determined from the table).

Connect the Adjustable Ignition Spark Tester THX458 or equivalent to the suspect spark plug wire.

Observe the spark tester while cranking the engine.

**Is a bluish-white spark present?**

Yes	No
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GO to PINPOINT TEST Z .	INSTALL a new coil pack as needed. REFER to the appropriate Engine Ignition article . CARRY out the misfire monitor drive cycle. REFER to ON BOARD DIAGNOSTIC (OBD) DRIVE CYCLE . Clear the PCM DTCs. REPEAT the self-test.
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**JE9 CHECK FOR CORRECT PCM OPERATION**

Disconnect all the PCM connectors.

Visually inspect for:

    pushed out pins

    corrosion

Connect all the PCM connectors and make sure they seat correctly.

Carry out the PCM self-test.

Verify the concern is still present.

**Is the concern still present?**

Yes	No
INSTALL a new PCM. REFER to FLASH ELECTRICALLY ERASABLE PROGRAMMABLE READ ONLY MEMORY (EEPROM) , PROGRAMMING THE VID BLOCK FOR A REPLACEMENT PCM .	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.