

DIAGNOSTIC TROUBLE CODE CHART

HINT:

Parameters listed in the chart may be different than your readings depending on the type of instrument and other factors.

If any DTCs are displayed during a check mode DTC check, check the circuit for the DTCs listed in the table below. For details of each DTC, refer to the page indicated.

SFI SYSTEM:

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P0010	Camshaft Position "A" Actuator Circuit (Bank 1)	1. Open or short in oil control valve circuit 2. Oil control valve 3. ECM	Come on	DTC stored	ES-54
P0011	Camshaft Position "A" - Timing Over-Advanced or System Performance (Bank 1)	1. Valve timing 2. Oil control valve 3. Camshaft timing gear assembly 4. ECM	Come on	DTC stored	ES-58
P0012	Camshaft Position "A" - Timing Over-Retarded (Bank 1)	Same as DTC P0011	Come on	DTC stored	ES-58
P0016	Crankshaft Position - Camshaft Position Correlation (Bank 1 Sensor A)	1. Mechanical system (timing chain has jumped a tooth, chain stretched) 2. ECM	Come on	DTC stored	ES-62
P0031	Oxygen (A/F) Sensor Heater Control Circuit Low (Bank 1 Sensor 1)	1. Open or short in heater circuit of A/F sensor 2. A/F sensor heater 3. EFI M relay (Integration relay) 4. ECM	Come on	DTC stored	ES-64
P0032	Oxygen (A/F) Sensor Heater Control Circuit High (Bank 1 Sensor 1)	1. Short in heater circuit of A/F sensor 2. A/F sensor heater 3. EFI M relay (Integration relay) 4. ECM	Come on	DTC stored	ES-64
P0037	Oxygen Sensor Heater Control Circuit Low (Bank 1 Sensor 2)	1. Open or short in heater circuit of the heated oxygen sensor 2. Heated oxygen sensor heater 3. EFI M relay (integration relay) 4. ECM	Come on	DTC stored	ES-69
P0038	Oxygen Sensor Heater Control Circuit High (Bank 1 Sensor 2)	1. Short in heater circuit of the heated oxygen sensor 2. Heated oxygen sensor heater 3. EFI M relay (integration relay) 4. ECM	Come on	DTC stored	ES-69
P0100	Mass or Volume Air Flow Circuit	1. Open or short in mass air flow meter circuit 2. Mass air flow meter 3. ECM	Come on	DTC stored	ES-75
P0101	Mass Air Flow Circuit Range / Performance Problem	Mass air flow meter	Come on	DTC stored	ES-82
P0102	Mass or Volume Air Flow Circuit Low Input	1. Open in mass air flow meter circuit 2. Mass air flow meter 3. ECM	Come on	DTC stored	ES-75
P0103	Mass or Volume Air Flow Circuit High Input	1. Short in mass air flow meter circuit 2. Mass air flow meter 3. ECM	Come on	DTC stored	ES-75
P0110	Intake Air Temperature Circuit	1. Open or short in intake air temperature sensor circuit 2. Intake air temperature sensor (built in mass air flow meter) 3. ECM	Come on	DTC stored	ES-84

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P0112	Intake Air Temperature Circuit Low Input	1. Short in intake air temperature sensor circuit 2. Intake air temperature sensor (built in mass air flow meter) 3. ECM	Come on	DTC stored	ES-84
P0113	Intake Air Temperature Circuit High Input	1. Open in intake air temperature sensor circuit 2. Intake air temperature sensor (built in mass air flow meter) 3. ECM	Come on	DTC stored	ES-84
P0115	Engine Coolant Temperature Circuit	1. Open or short in engine coolant temperature sensor circuit 2. Engine coolant temperature sensor 3. ECM	Come on	DTC stored	ES-90
P0116	Engine Coolant Temperature Circuit Range / Performance Problem	Engine coolant temperature sensor	Come on	DTC stored	ES-96
P0117	Engine Coolant Temperature Circuit Low Input	1. Short in engine coolant temperature sensor circuit 2. Engine coolant temperature sensor 3. ECM	Come on	DTC stored	ES-90
P0118	Engine Coolant Temperature Circuit High Input	1. Open in engine coolant temperature sensor circuit 2. Engine coolant temperature sensor 3. ECM	Come on	DTC stored	ES-90
P0120	Throttle / Pedal Position Sensor / Switch "A" Circuit Malfunction	1. Open or short in throttle position sensor circuit 2. Throttle position sensor (built into throttle body) 3. ECM	Come on	DTC stored	ES-99
P0121	Throttle / Pedal Position Sensor / Switch "A" Circuit Range / Performance Problem	Throttle position sensor (built into throttle body)	Come on	DTC stored	ES-106
P0122	Throttle / Pedal Position Sensor / Switch "A" Circuit Low Input	1. Throttle position sensor (built into throttle body) 2. Short in VTA1 circuit 3. Open in VC circuit 4. ECM	Come on	DTC stored	ES-99
P0123	Throttle / Pedal Position Sensor / Switch "A" Circuit High Input	1. Throttle position sensor (built into throttle body) 2. Open in VTA1 circuit 3. Open in E2 circuit 4. Short between VC and VTA1 circuits 5. ECM	Come on	DTC stored	ES-99
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	1. Cooling system 2. Engine coolant temperature sensor 3. Thermostat	Come on	DTC stored	ES-108
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)	1. Thermostat 2. Cooling system 3. Engine coolant temperature sensor 4. ECM	Come on	DTC stored	ES-111
P0136	Oxygen Sensor Circuit Malfunction (Bank 1 Sensor 2)	1. Open or short in HO2 sensor (sensor 2) circuit 2. HO2 sensor (sensor 2) 3. HO2 sensor heater (sensor 2) 4. Air-fuel ratio (A/F) sensor (sensor 1) 5. Integration relay (EFI M relay) 6. Gas leakage from exhaust system	Come on	DTC stored	ES-114
P0137	Oxygen Sensor Circuit Low Voltage (Bank 1 Sensor 2)	1. Open in HO2 sensor (sensor 2) circuit 2. HO2 sensor (sensor 2) 3. HO2 sensor heater (sensor 2) 4. Integration relay (EFI M relay) 5. Gas leakage from exhaust system	Come on	DTC stored	ES-114

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P0138	Oxygen Sensor Circuit High Voltage (Bank 1 Sensor 2)	1. Short in HO2 sensor (sensor 2) circuit 2. HO2 sensor (sensor 2) 3. ECM internal circuit malfunction	Come on	DTC stored	ES-114
P0171	System Too Lean (Fuel Trim)	1. Air induction system 2. Injector has blockage 3. Mass air flow meter 4. Engine coolant temperature sensor 5. Fuel pressure 6. Gas leakage in exhaust system 7. Open or short in A/F sensor (bank 1 sensor 1) circuit 8. A/F sensor (bank 1 sensor 1) 9. A/F sensor heater (bank 1 sensor 1) 10. EFI M relay (integration relay) 11. PCV valve and hose 12. PCV hose connection 13. ECM	Come on	DTC stored	ES-133
P0172	System Too Rich (Bank 1)	1. Injector has leakage or blockage 2. Mass air flow meter 3. Engine coolant temperature sensor 4. Ignition system 5. Fuel pressure 6. Gas leakage in exhaust system 7. Open or short in A/F sensor (bank 1 sensor 1) circuit 8. A/F sensor (bank 1 sensor 1) 9. A/F sensor heater (bank 1 sensor 1) 10. EFI M relay (integration relay) 11. ECM	Come on	DTC stored	ES-133
P0220	Throttle / Pedal Position Sensor / Switch "B" Circuit	1. Open or short in throttle position sensor circuit 2. Throttle position sensor (built into throttle body) 3. ECM	Come on	DTC stored	ES-99
P0222	Throttle / Pedal Position Sensor / Switch "B" Circuit Low Input	1. Throttle position sensor (built into throttle body) 2. Short in VTA2 circuit 3. Open in VC circuit 4. ECM	Come on	DTC stored	ES-99
P0223	Throttle / Pedal Position Sensor / Switch "B" Circuit High Input	1. Throttle position sensor (built into throttle body) 2. Open in VTA2 circuit 3. Open in E2 circuit 4. Short between VC and VTA2 circuits 5. ECM	Come on	DTC stored	ES-99
P0300	Random / Multiple Cylinder Misfire Detected	1. Open or short in engine wire harness 2. Connector connection 3. Vacuum hose connection 4. Ignition system 5. Injector 6. Fuel pressure 7. Mass air flow meter 8. Engine coolant temperature sensor 9. Compression pressure 10. Valve clearance 11. Valve timing 12. PCV hose connection 13. PCV hose 14. ECM	Come on/ Blink	DTC stored	ES-147
P0301	Cylinder 1 Misfire Detected	Same as DTC P0300	Come on/ Blink	DTC stored	ES-147
P0302	Cylinder 2 Misfire Detected	Same as DTC P0300	Come on/ Blink	DTC stored	ES-147
P0303	Cylinder 3 Misfire Detected	Same as DTC P0300	Come on/ Blink	DTC stored	ES-147

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P0304	Cylinder 4 Misfire Detected	Same as DTC P0300	Come on/ Blink	DTC stored	ES-147
P0325	Knock Sensor 1 Circuit	1. Open or short in knock sensor circuit 2. Knock sensor (under-torqued or looseness) 3. ECM	Come on	DTC stored	ES-160
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)	1. Short in knock sensor circuit 2. Knock sensor 3. ECM	Come on	DTC stored	ES-160
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)	1. Open in knock sensor circuit 2. Knock sensor 3. ECM	Come on	DTC stored	ES-160
P0335	Crankshaft Position Sensor "A" Circuit	1. Open or short in crankshaft position sensor circuit 2. Crankshaft position sensor 3. Signal plate (crankshaft) 4. ECM	Come on	DTC stored	ES-165
P0340	Camshaft Position Sensor Circuit Malfunction	1. Open or short in camshaft position sensor circuit 2. Camshaft position sensor 3. Camshaft timing pulley 4. Timing chain has jumped a tooth 5. ECM	Come on	DTC stored	ES-169
P0341	Camshaft Position Sensor "A" Circuit Range / Performance (Bank 1 or Single Sensor)	Same as DTC P0340	Come on	DTC stored	ES-169
P0351	Ignition Coil "A" Primary / Secondary Circuit	1. Ignition system 2. Open or short in IGF or IGT1 circuit between ignition coil with igniter and ECM 3. No. 1 ignition coil with igniter 4. ECM	Come on	DTC stored	ES-173
P0352	Ignition Coil "B" Primary / Secondary Circuit	1. Ignition system 2. Open or short in IGF or IGT2 circuit between ignition coil with igniter and ECM 3. No. 2 ignition coil with igniter 4. ECM	Come on	DTC stored	ES-173
P0353	Ignition Coil "C" Primary / Secondary Circuit	1. Ignition system 2. Open or short in IGF or IGT3 circuit between ignition coil with igniter and ECM 3. No. 3 ignition coil with igniter 4. ECM	Come on	DTC stored	ES-173
P0354	Ignition Coil "D" Primary / Secondary Circuit	1. Ignition system 2. Open or short in IGF or IGT4 circuit between ignition coil with igniter and ECM 3. No. 4 ignition coil with igniter 4. ECM	Come on	DTC stored	ES-173
P0420	Catalyst System Efficiency Below Threshold (Bank 1)	1. Gas leakage in exhaust system 2. A/F sensor 3. Heated oxygen sensor 4. 3-way catalytic converter	Come on	DTC stored	ES-183
P043E	Evaporative Emission System Reference Orifice Clog Up	1. Canister pump module (Reference orifice, leak detection pump, vent valve) 2. Connector/wire harness (Canister pump module-ECM) 3. EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) 4. ECM	Come on	DTC stored	ES-190
P043F	Evaporative Emission System Reference Orifice High Flow	Same as DTC P043E	Come on	DTC stored	ES-190

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P0441	Evaporative Emission Control System Incorrect Purge Flow	1. Purge VSV 2. Connector/wire harness (Purge VSV-ECM) 3. Canister pump module 4. Leakage from EVAP system 5. Leakage from EVAP line (Purge VSV-Intake manifold) 6. ECM	Come on	DTC stored	ES-214
P0446	Evaporative Emission Control System Vent Control Circuit	1. Leak from EVAP system 2. Pressure switching valve 3. Purge VSV 4. Vent valve 5. Fuel tank pressure sensor	Come on	DTC stored	ES-239
P0450	Evaporative Emission Control System Pressure Sensor Malfunction	1. Canister pump module 2. EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) 3. Connector/wire harness (Canister pump module ECM) 4. ECM	Come on	DTC stored	ES-255
P0451	Evaporative Emission Control System Pressure Sensor Range / Performance	1. Canister pump module 2. EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) 3. ECM	Come on	DTC stored	ES-255
P0452	Evaporative Emission Control System Pressure Sensor / Switch Low Input	Same as DTC P0450	Come on	DTC stored	ES-255
P0453	Evaporative Emission Control System Pressure Sensor / Switch High Input	Same as DTC P0450	Come on	DTC stored	ES-255
P0455	Evaporative Emission Control System Leak Detected (Gross Leak)	1. Fuel cap (loose) 2. Leakage from EVAP line (Canister-Fuel tank) 3. Leakage from EVAP line (Purge VSV-Canister) 4. Canister pump module 5. Leakage from fuel tank 6. Leakage from canister	Come on	DTC stored	ES-269
P0456	Evaporative Emission Control System Leak Detected (Very Small Leak)	Same as DTC P0455	Come on	DTC stored	ES-269
P0505	Idle Control System Malfunction	1. Electronic throttle control system 2. Air induction system 3. PCV valve and hose 4. ECM	Come on	DTC stored	ES-293
P0560	System Voltage	1. Open in back up power source circuit 2. ECM	Come on	DTC stored	ES-296
P0604	Internal Control Module Random Access Memory (RAM) Error	ECM	Come on	DTC stored	ES-300
P0606	ECM / PCM Processor	1. Exhaust gas leak 2. HO2 sensor 3. ECM	Come on	DTC stored	ES-302
P0607	Control Module Performance	ECM	Come on	DTC stored	ES-305
P0657	Actuator Supply Voltage Circuit / Open	ECM	Come on	DTC stored	ES-307
P1115	Coolant Temperature Sensor Circuit for Coolant Heat Storage System	1. Open or short in CHS (Coolant Heat Storage) tank outlet temperature sensor circuit 2. CHS tank outlet temperature sensor 3. ECM	Come on	DTC stored	ES-309
P1116	Coolant Temperature Sensor Circuit Stack for Coolant Heat Storage	1. Coolant heat storage tank outlet temperature sensor 2. Cooling system (clogging)	Come on	DTC stored	ES-314

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P1117	Coolant Temperature Sensor Circuit Low for Coolant Heat Storage	1. Short in CHS tank outlet temperature sensor circuit 2. CHS tank outlet temperature sensor 3. ECM	Come on	DTC stored	ES-309
P1118	Coolant Temperature Sensor Circuit High for Coolant Heat Storage	1. Open in CHS tank outlet temperature sensor circuit 2. CHS tank outlet temperature sensor 3. ECM	Come on	DTC stored	ES-309
P1120	Coolant Flow Control Valve Position Sensor Circuit	1. Open or short in water valve position sensor circuit 2. Water valve (coolant flow control valve) 3. ECM	Come on	DTC stored	ES-316
P1121	Coolant Flow Control Valve Position Sensor Circuit Stuck	1. Water valve (coolant flow control valve) 2. Cooling system (clogging) 3. ECM	Come on	DTC stored	ES-322
P1122	Coolant Flow Control Valve Position Sensor Circuit Low	1. Water valve (coolant flow control valve) 2. Short in WBAD (valve position signal) circuit 3. Open in VC circuit 4. ECM	Come on	DTC stored	ES-316
P1123	Coolant Flow Control Valve Position Sensor Circuit High	1. Water valve (coolant flow control valve) 2. Open in E2 circuit 3. VC and WBAD circuits are short circuited 4. Open in WBAD circuit 5. ECM	Come on	DTC stored	ES-316
P1150	Coolant Path Clog of Coolant Heat Storage System	1. Coolant heat storage tank outlet temperature sensor 2. Water valve (coolant flow control valve) 3. Cooling system (clogging) 4. ECM	Come on	DTC stored	ES-326
P1151	Coolant Heat Storage Tank	Coolant heat storage tank	Come on	DTC stored	ES-330
P1450	Fuel Tank Pressure Sensor	1. Fuel tank pressure sensor 2. Connector/wire harness (Fuel tank pressure sensor-ECM) 3. ECM	Come on	DTC stored	ES-333
P1451	Fuel Tank Pressure Sensor Range/Performance	1. Fuel tank pressure sensor 2. Connector/wire harness (Fuel tank pressure sensor-ECM) 3. ECM	Come on	DTC stored	ES-333
P1452	Fuel Tank Pressure Sensor Low Input	1. Fuel tank pressure sensor 2. Connector/wire harness (Fuel tank pressure sensor-ECM) 3. ECM	Come on	DTC stored	ES-333
P1453	Fuel Tank Pressure Sensor High Input	1. Fuel tank pressure sensor 2. Connector/wire harness (Fuel tank pressure sensor-ECM) 3. ECM	Come on	DTC stored	ES-333
P1455	Vapor Reducing Fuel Tank System Malfunction	1. Fuel Tank 2. Fuel system 3. ECM	Come on	DTC stored	ES-345
P2102	Throttle Actuator Control Motor Circuit Low	1. Open in throttle control motor circuit 2. Throttle control motor 3. ECM	Come on	DTC stored	ES-347

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P2103	Throttle Actuator Control Motor Circuit High	1. Short in throttle control motor circuit 2. Throttle control motor 3. Throttle valve 4. Throttle body assembly 5. ECM	Come on	DTC stored	ES-347
P2111	Throttle Actuator Control System - Stuck Open	1. Throttle control motor circuit 2. Throttle control motor 3. Throttle body 4. Throttle valve	Come on	DTC stored	ES-351
P2112	Throttle Actuator Control System - Stuck Closed	1. Throttle control motor circuit 2. Throttle control motor 3. Throttle body 4. Throttle valve	Come on	DTC stored	ES-351
P2118	Throttle Actuator Control Motor Current Range / Performance	1. Open in ETCS power source circuit 2. ETCS fuse 3. ECM	Come on	DTC stored	ES-354
P2119	Throttle Actuator Control Throttle Body Range / Performance	1. Electric throttle control system 2. ECM	Come on	DTC stored	ES-359
P2135	Throttle / Pedal Position Sensor / Switch "A" / "B" Voltage Correlation	1. Short between VTA1 and VTA2 circuits 2. Throttle position sensor (built into throttle body) 3. ECM	Come on	DTC stored	ES-99
P2195	Oxygen (A/F) Sensor Signal Stuck Lean (Bank 1 Sensor 1)	1. Open or short in A/F sensor (bank 1 sensor 1) circuit 2. A/F sensor (bank 1 sensor 1) 3. A/F sensor heater 4. Integration relay 5. A/F sensor heater and relay circuit 6. Air induction system 7. Fuel pressure 8. Injector 9. PCV hose connection 10. ECM	Come on	DTC stored	ES-362
P2196	Oxygen (A/F) Sensor Signal Stuck Rich (Bank 1 Sensor 1)	Same as DTC P2195	Come on	DTC stored	ES-362
P2237	Oxygen (A/F) Sensor Pumping Current Circuit / Open (Bank 1 Sensor 1)	1. Open or short in A/F sensor (sensor 1) circuit 2. A/F sensor (sensor 1) 3. ECM	Come on	DTC stored	ES-375
P2238	Oxygen (A/F) Sensor Pumping Current Circuit Low (Bank 1 Sensor 1)	1. Open or short in A/F sensor (sensor 1) circuit 2. A/F sensor (sensor 1) 3. ECM	Come on	DTC stored	ES-375
P2239	Oxygen (A/F) Sensor Pumping Current Circuit High (Bank 1 Sensor 1)	1. Open or short in A/F sensor (sensor 1) circuit 2. A/F sensor (sensor 1) 3. ECM	Come on	DTC stored	ES-375
P2252	Oxygen (A/F) Sensor Reference Ground Circuit Low (Bank 1 Sensor 1)	1. Open or short in A/F sensor (sensor 1) circuit 2. A/F sensor (sensor 1) 3. ECM	Come on	DTC stored	ES-375
P2253	Oxygen (A/F) Sensor Reference Ground Circuit High (Bank 1 Sensor 1)	1. Open or short in A/F sensor (sensor 1) circuit 2. A/F sensor (sensor 1) 3. ECM	Come on	DTC stored	ES-375
P2401	Evaporative Emission Leak Detection Pump Stuck OFF	Same as DTC P043E	Come on	DTC stored	ES-190
P2402	Evaporative Emission Leak Detection Pump Stuck ON	Same as DTC P043E	Come on	DTC stored	ES-190
P2419	Evaporative Emission Pressure Switching Valve Stuck ON	Same as DTC P043E	Come on	DTC stored	ES-190

DTC Code	Detection Item	Trouble Area	MIL	Memory	See page
P2420	Evaporative Emission Pressure Switching Valve Stuck OFF	1. Pump module (0.02 inch orifice, vacuum pump, vent valve) 2. Connector / wire harness (Pump module ECM) 3. ECM	Come on	DTC stored	ES-383
P2601	Coolant Pump Control Circuit Range / Performance	1. CHS water pump 2. CHS water pump relay 3. Open or short in CHS water pump circuit 4. ECM	Come on	DTC stored	ES-405
P2610	ECM / PCM Internal Engine Off Timer Performance	ECM	Come on	DTC stored	ES-411
P2A00	A/F Sensor Circuit Slow Response (Bank 1 Sensor 1)	1. Open or short in A/F sensor (bank 1 sensor 1) circuit 2. A/F sensor (bank 1 sensor 1) 3. A/F sensor heater 4. EFI M relay (integration relay) 5. A/F sensor heater and relay circuit 6. Air induction system 7. Fuel pressure 8. Injector 9. PCV hose connection 10. ECM	Come on	DTC stored	ES-413
P3190	Poor Engine Power	1. Air induction system 2. Throttle body 3. Fuel pressure 4. Engine 5. Air flow meter 6. Lack of fuel 7. Engine coolant temperature sensor 8. Crankshaft position sensor 9. Camshaft position sensor 10. ECM	Come on	DTC stored	ES-425
P3191	Engine does not Start	1. Air induction system 2. Throttle body 3. Fuel pressure 4. Engine 5. Air flow meter 6. Lack of fuel 7. Engine coolant temperature sensor 8. Crankshaft position sensor 9. Camshaft position sensor 10. ECM	Come on	DTC stored	ES-425
P3193	Fuel Run Out	1. Lack of fuel 2. ECM	Come on	DTC stored	ES-425
U0293	Lost Communication with HV ECU	1. Wire harness 2. HV ECU 3. ECM	Come on	DTC stored	ES-432