

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.

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0010	Camshaft Position "A" Actuator Circuit (Bank 1)	- Open or short in Oil Control Valve (OCV) circuit - OCV - ECM	Comes on	DTC stored	ES-62
P0011	Camshaft Position "A" - Timing Over-Advanced or System Performance (Bank 1)	- Valve timing - OCV - OCV filter - Camshaft timing gear assembly - ECM	Comes on	DTC stored	ES-66
P0012	Camshaft Position "A" - Timing Over-Retarded (Bank 1)	- Same as DTC P0011	Comes on	DTC stored	ES-66
P0016	Crankshaft Position - Camshaft Position Correlation (Bank 1 Sensor A)	- Mechanical system (Timing chain has jumped tooth or chain stretched) - ECM	Comes on	DTC stored	ES-72
P0031	Oxygen (A/F) Sensor Heater Control Circuit Low (Bank 1 Sensor 1)	- Open in Air-Fuel Ratio (A/F) sensor heater circuit - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - ECM	Comes on	DTC stored	ES-74
P0032	Oxygen (A/F) Sensor Heater Control Circuit High (Bank 1 Sensor 1)	- Short in A/F sensor heater circuit - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - ECM	Comes on	DTC stored	ES-74
P0037	Oxygen Sensor Heater Control Circuit Low (Bank 1 Sensor 2)	- Open in Heated Oxygen (HO2) sensor heater circuit - HO2 sensor heater (sensor 2) - Integration relay (EFI MAIN relay) - ECM	Comes on	DTC stored	ES-80
P0038	Oxygen Sensor Heater Control Circuit High (Bank 1 Sensor 2)	- Short in HO2 sensor heater circuit - HO2 sensor heater (sensor 2) - Integration relay (EFI MAIN relay) - ECM	Comes on	DTC stored	ES-80

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0100	Mass or Volume Air Flow Circuit	- Open or short in Mass Air Flow (MAF) meter circuit - MAF meter - ECM	Comes on	DTC stored	ES-86
P0101	Mass Air Flow Circuit Range / Performance Problem	- MAF meter - Air induction system - PCV hose connections	Comes on	DTC stored	ES-93
P0102	Mass or Volume Air Flow Circuit Low Input	- Open or short in MAF meter circuit - MAF meter - ECM	Comes on	DTC stored	ES-86
P0103	Mass or Volume Air Flow Circuit High Input	- Open or short in MAF meter circuit - MAF meter - ECM	Comes on	DTC stored	ES-86
P0110	Intake Air Temperature Circuit Malfunction	- Open or short in Intake Air Temperature (IAT) sensor circuit - IAT sensor (built into MAF meter) - ECM	Comes on	DTC stored	ES-96
P0111	Intake Air Temperature Sensor Gradient Too High	- Mass air flow meter assembly	Comes on	DTC stored	ES-102
P0112	Intake Air Temperature Circuit Low Input	- Short in IAT sensor circuit - IAT sensor (built into MAF meter) - ECM	Comes on	DTC stored	ES-96
P0113	Intake Air Temperature Circuit High Input	- Open in IAT sensor circuit - IAT sensor (built into MAF meter) - ECM	Comes on	DTC stored	ES-96
P0115	Engine Coolant Temperature Circuit Malfunction	- Open or short in Engine Coolant Temperature (ECT) sensor circuit - ECT sensor - ECM	Comes on	DTC stored	ES-105
P0116	Engine Coolant Temperature Circuit Range / Performance Problem	- Thermostat - ECT sensor	Comes on	DTC stored	ES-111
P0117	Engine Coolant Temperature Circuit Low Input	- Short in ECT sensor circuit - ECT sensor - ECM	Comes on	DTC stored	ES-105
P0118	Engine Coolant Temperature Circuit High Input	- Open in ECT sensor circuit - ECT sensor - ECM	Comes on	DTC stored	ES-105
P0120	Throttle Pedal Position Sensor / Switch "A" Circuit Malfunction	- Throttle Position (TP) sensor (built into throttle body) - ECM	Comes on	DTC stored	ES-114
P0121	Throttle / Pedal Position Sensor / Switch "A" Circuit Range / Performance Problem	- TP sensor (built into throttle body)	Comes on	DTC stored	ES-121

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DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0122	Throttle / Pedal Position Sensor / Switch "A" Circuit Low Input	<ul style="list-style-type: none"> - TP sensor (built into throttle body) - Short in VTA1 circuit - Open in VC circuit - ECM 	Comes on	DTC stored	ES-114
P0123	Throttle / Pedal Position Sensor / Switch "A" Circuit High Input	<ul style="list-style-type: none"> - TP sensor (built into throttle body) - Open in VTA1 circuit - Open in E2 circuit - Short between VC and VTA1 circuits - ECM 	Comes on	DTC stored	ES-114
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	<ul style="list-style-type: none"> - Cooling system - ECT sensor - Thermostat 	Comes on	DTC stored	ES-123
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)	<ul style="list-style-type: none"> - Thermostat - Cooling system - ECT sensor - ECM 	Comes on	DTC stored	ES-126
P0136	Oxygen Sensor Circuit Malfunction (Bank 1 Sensor 2)	<ul style="list-style-type: none"> - Open or short in HO2 sensor (sensor 2) circuit - HO2 sensor (sensor 2) - HO2 sensor heater (sensor 2) - Air-Fuel Ratio (A/F) sensor (sensor 1) - Integration relay (EFI MAIN relay) - Gas leakage from exhaust system 	Comes on	DTC stored	ES-129
P0137	Oxygen Sensor Circuit Low Voltage (Bank 1 Sensor 2)	<ul style="list-style-type: none"> - Open in HO2 sensor (sensor 2) circuit - HO2 sensor (sensor 2) - HO2 sensor heater (sensor 2) - Integration relay (EFI MAIN relay) - Gas leakage from exhaust system 	Comes on	DTC stored	ES-129
P0138	Oxygen Sensor Circuit High Voltage (Bank 1 Sensor 2)	<ul style="list-style-type: none"> - Short in HO2 sensor (sensor 2) circuit - HO2 sensor (sensor 2) - ECM internal circuit malfunction 	Comes on	DTC stored	ES-129
P0141	Oxygen Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)	<ul style="list-style-type: none"> - Open or short in HO2 sensor heater circuit - HO2 sensor heater (sensor 2) - Integration relay (EFI MAIN relay) - ECM 	Comes on	DTC stored	ES-80

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0171	System Too Lean (Bank 1)	<ul style="list-style-type: none"> - Air induction system - Injector blockage - MAF meter - ECT sensor - Fuel pressure - Gas leakage from exhaust system - Open or short in A/F sensor (sensor 1) circuit - A/F sensor (sensor 1) - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - A/F sensor heater and EFI MAIN relay circuits - PCV hose connections - PCV valve and hose - ECM 	Comes on	DTC stored	ES-147
P0172	System Too Rich (Bank 1)	<ul style="list-style-type: none"> - Injector leakage or blockage - MAF meter - ECT sensor - Ignition system - Fuel pressure - Gas leakage from exhaust system - Open or short in A/F sensor (sensor 1) circuit - A/F sensor (sensor 1) - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - A/F sensor heater and EFI MAIN relay circuits - ECM 	Comes on	DTC stored	ES-147
P0220	Throttle / Pedal Position Sensor / Switch "B" Circuit	<ul style="list-style-type: none"> - TP sensor (built into throttle body) - ECM 	Comes on	DTC stored	ES-114
P0222	Throttle / Pedal Position Sensor / Switch "B" Circuit Low Input	<ul style="list-style-type: none"> - TP sensor (built into throttle body) - Short in VTA2 circuit - Open in VC circuit - ECM 	Comes on	DTC stored	ES-114
P0223	Throttle / Pedal Position Sensor / Switch "B" Circuit High Input	<ul style="list-style-type: none"> - TP sensor (built into throttle body) - Open in VTA2 circuit - Open in E2 circuit - Short between VC and VTA2 circuits - ECM 	Comes on	DTC stored	ES-114

ES

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0300	Random / Multiple Cylinder Misfire Detected	<ul style="list-style-type: none"> - Open or short in engine wire harness - Connector connection - Vacuum hose connection - Ignition system - Injector - Fuel pressure - MAF meter - ECT sensor - Compression pressure - Valve clearance - Valve timing - PCV valve and hose - PCV hose connections - Air induction system - ECM 	Comes on/Blinks*	DTC stored	ES-156
P0301	Cylinder 1 Misfire Detected	- Same as DTC P0300	Comes on/Blinks*	DTC stored	ES-156
P0302	Cylinder 2 Misfire Detected	- Same as DTC P0300	Comes on/Blinks*	DTC stored	ES-156
P0303	Cylinder 3 Misfire Detected	- Same as DTC P0300	Comes on/Blinks*	DTC stored	ES-156
P0304	Cylinder 4 Misfire Detected	- Same as DTC P0300	Comes on/Blinks*	DTC stored	ES-156
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)	<ul style="list-style-type: none"> - Short in knock sensor circuit - Knock sensor - ECM 	Comes on	DTC stored	ES-168
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)	<ul style="list-style-type: none"> - Open in knock sensor circuit - Knock sensor - ECM 	Comes on	DTC stored	ES-168
P0335	Crankshaft Position Sensor "A" Circuit	<ul style="list-style-type: none"> - Open or short in Crankshaft Position (CKP) sensor circuit - CKP sensor - CKP sensor plate - ECM 	Comes on	DTC stored	ES-172
P0339	Crankshaft Position Sensor "A" Circuit Intermittent	- Same as DTC P0335	-	DTC stored	ES-172
P0340	Camshaft Position Sensor "A" Circuit (Bank 1 or Single Sensor)	<ul style="list-style-type: none"> - Open or short in Camshaft Position (CMP) sensor circuit - CMP sensor - Camshaft - Jumped tooth of timing chain - ECM 	Comes on	DTC stored	ES-178
P0351	Ignition Coil "A" Primary / Secondary Circuit	<ul style="list-style-type: none"> - Ignition system - Open or short in IGF1 or IGT circuit (1 to 4) between ignition coil with igniter and ECM - No. 1 to No. 4 ignition coils with igniters - ECM 	Comes on	DTC stored	ES-183

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0352	Ignition Coil "B" Primary / Secondary Circuit	- Same as DTC P0351	Comes on	DTC stored	ES-183
P0353	Ignition Coil "C" Primary / Secondary Circuit	- Same as DTC P0351	Comes on	DTC stored	ES-183
P0354	Ignition Coil "D" Primary / Secondary Circuit	- Same as DTC P0351	Comes on	DTC stored	ES-183
P0420	Catalyst System Efficiency Below Threshold (Bank 1)	- Front exhaust pipe (with Three-Way Catalytic Converter) - Gas leakage from exhaust system - A/F sensor (sensor 1) - HO2 sensor (sensor 2)	Comes on	DTC stored	ES-191
P043E	Evaporative Emission System Reference Orifice Clog Up	- Canister pump module (Reference orifice, leak detection pump, vent valve) - Connector/wire harness (Canister pump module - ECM) - EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) - ECM	Comes on	DTC stored	ES-198
P043F	Evaporative Emission System Reference Orifice High Flow	- Same as DTC P043E	Comes on	DTC stored	ES-198
P0441	Evaporative Emission Control System Incorrect Purge Flow	- Purge VSV - Connector/wire harness (Purge VSV - ECM) - Canister pump module - Leakage from EVAP system - Leakage from EVAP line (Purge VSV - Intake manifold) - ECM	Comes on	DTC stored	ES-203
P0450	Evaporative Emission Control System Pressure Sensor / Switch	- Canister pump module - EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) - ECM	Comes on	DTC stored	ES-210

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DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P0451	Evaporative Emission Control System Pressure Sensor Range / Performance	<ul style="list-style-type: none"> - Canister pump module - Connector/wire harness (Canister pump module - ECM) - EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) - ECM 	Comes on	DTC stored	ES-210
P0452	Evaporative Emission Control System Pressure Sensor / Switch Low Input	- Same as DTC P0451	Comes on	DTC stored	ES-210
P0453	Evaporative Emission Control System Pressure Sensor / Switch High Input	- Same as DTC P0451	Comes on	DTC stored	ES-210
P0455	Evaporative Emission Control System Leak Detected (Gross Leak)	<ul style="list-style-type: none"> - Fuel cap (loose) - Leakage from EVAP line (Canister - Fuel tank) - Leakage from EVAP line (Purge VSV - Canister) - Canister pump module - Leakage from fuel tank - Leakage from canister 	Comes on	DTC stored	ES-220
P0456	Evaporative Emission Control System Leak Detected (Very Small Leak)	- Same as DTC P0455	Comes on	DTC stored	ES-220
P0500	Vehicle Speed Sensor "A"	<ul style="list-style-type: none"> - Open or short in speed signal circuit - Vehicle speed sensor - Combination meter - ECM - Skid control ECU 	Comes on	DTC stored	ES-224
P0504	Brake Switch "A" / "B" Correlation	<ul style="list-style-type: none"> - Short in stop light switch signal circuit - STOP fuse - IGN fuse - Stop light switch - ECM 	-	DTC stored	ES-229
P0505	Idle Control System Malfunction	<ul style="list-style-type: none"> - ETCS (Electronic Throttle Control System) - Air induction system - PCV hose connections - ECM 	Comes on	DTC stored	ES-233

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P050A	Cold Start Idle Air Control System Performance	- Throttle body assembly - MAF meter - Air induction system - PCV hose connections - VVT system - Air cleaner filter element - ECM	Comes on	DTC stored	ES-237
P050B	Cold Start Ignition Timing Performance	- Same as DTC P050A	Comes on	DTC stored	ES-237
P0516	Battery Temperature Sensor Circuit Low	- Battery current sensor - Short in battery current sensor - ECM	-	DTC stored	ES-243
P0517	Battery Temperature Sensor Circuit High	- Battery current sensor - Open in battery current sensor - ECM	-	DTC stored	ES-243
P0560	System Voltage	- Open in back up power source circuit - Battery - Battery terminals - EFI MAIN fuse - ECM	Comes on	DTC stored	ES-245
P0604	Internal Control Module Random Access Memory (RAM) Error	- ECM	Comes on	DTC stored	ES-249
P0606	ECM / PCM Processor	- ECM	Comes on	DTC stored	ES-249
P0607	Control Module Performance	- ECM	Comes on	DTC stored	ES-249
P0617	Starter Relay Circuit High	- Park/Neutral Position (PNP) switch - ST relay circuit - Ignition switch - ECM	Comes on	DTC stored	ES-251
P0630	VIN not Programmed or Mismatch - ECM / PCM	- ECM	Comes on	DTC stored	ES-256
P0657	Actuator Supply Voltage Circuit / Open	- ECM	Comes on	DTC stored	ES-249
P0724	Brake Switch "B" Circuit High	- Short in stop light switch circuit - Stop light switch - ECM	Comes on	DTC stored	ES-258
P1550	Battery Current Sensor Circuit	- Short in battery current sensor circuit - Battery current sensor - ECM	-	DTC stored	ES-261
P1551	Battery Current Sensor Circuit Low	- Short in battery current sensor circuit - Battery current sensor - ECM	-	DTC stored	ES-261

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DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P1552	Battery Current Sensor Circuit High	- Short in battery current sensor circuit - Battery current sensor - ECM	-	DTC stored	ES-261
P1602	Deterioration of Battery	- Battery - ECM back-up power source circuit	-	DTC stored	ES-264
P2102	Throttle Actuator Control Motor Circuit Low	- Open in throttle actuator circuit - Throttle actuator - ECM	Comes on	DTC stored	ES-265
P2103	Throttle Actuator Control Motor Circuit High	- Short in throttle actuator circuit - Throttle actuator - Throttle valve - Throttle body assembly - ECM	Comes on	DTC stored	ES-265
P2111	Throttle Actuator Control System - Stuck Open	- Throttle actuator - Throttle body assembly - Throttle valve	Comes on	DTC stored	ES-269
P2112	Throttle Actuator Control System - Stuck Closed	- Same as DTC P2111	Comes on	DTC stored	ES-269
P2118	Throttle Actuator Control Motor Current Range / Performance	- Open in ETCS power source circuit - Battery - Battery terminals - ETCS fuse - ECM	Comes on	DTC stored	ES-272
P2119	Throttle Actuator Control Throttle Body Range / Performance	- ETCS - ECM	Comes on	DTC stored	ES-279
P2120	Throttle / Pedal Position Sensor / Switch "D" Circuit	- Accelerator Pedal Position (APP) sensor - ECM	Comes on	DTC stored	ES-282
P2121	Throttle / Pedal Position Sensor / Switch "D" Circuit Range / Performance	- APP sensor - ECM	Comes on	DTC stored	ES-289
P2122	Throttle / Pedal Position Sensor / Switch "D" Circuit Low Input	- APP sensor - Open in VCP1 circuit - Open or ground short in VPA circuit - ECM	Comes on	DTC stored	ES-282
P2123	Throttle / Pedal Position Sensor / Switch "D" Circuit High Input	- APP sensor - Open in EPA circuit - ECM	Comes on	DTC stored	ES-282
P2125	Throttle / Pedal Position Sensor / Switch "E" Circuit	- APP sensor - ECM	Comes on	DTC stored	ES-282
P2127	Throttle / Pedal Position Sensor / Switch "E" Circuit Low Input	- APP sensor - Open in VCP2 circuit - Open or ground short in VPA2 circuit - ECM	Comes on	DTC stored	ES-282

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P2128	Throttle / Pedal Position Sensor / Switch "E" Circuit High Input	- APP sensor - Open in EPA2 circuit - ECM	Comes on	DTC stored	ES-282
P2135	Throttle / Pedal Position Sensor / Switch "A" / "B" Voltage Correlation	- Short between VTA1 and VTA2 circuits - TP sensor (built into throttle body) - ECM	Comes on	DTC stored	ES-114
P2138	Throttle / Pedal Position Sensor / Switch "D" / "E" Voltage Correlation	- Short between VPA and VPA2 circuits - APP sensor - ECM	Comes on	DTC stored	ES-282
P2195	Oxygen (A/F) Sensor Signal Stuck Lean (Bank 1 Sensor 1)	- Open or short in A/F sensor (sensor 1) circuit - A/F sensor (sensor 1) - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - A/F sensor heater and EFI MAIN relay circuits - ECM	Comes on	DTC stored	ES-292
P2196	Oxygen (A/F) Sensor Signal Stuck Rich (Bank 1 Sensor 1)	- Same as DTC P2195	Comes on	DTC stored	ES-292
P2238	Oxygen (A/F) Sensor Pumping Current Circuit Low (Bank 1 Sensor 1)	- Open or short in A/F sensor (sensor 1) circuit - A/F sensor (sensor 1) - A/F sensor heater (sensor 1) - Integration relay (EFI MAIN relay) - A/F sensor heater and EFI MAIN relay circuits - ECM	Comes on	DTC stored	ES-306
P2239	Oxygen (A/F) Sensor Pumping Current Circuit High (Bank 1 Sensor 1)	- Same as DTC P2238	Comes on	DTC stored	ES-306
P2252	Oxygen (A/F) Sensor Reference Ground Circuit Low (Bank 1 Sensor 1)	- Same as DTC P2238	Comes on	DTC stored	ES-306
P2253	Oxygen (A/F) Sensor Reference Ground Circuit High (Bank 1 Sensor 1)	- Same as DTC P2238	Comes on	DTC stored	ES-306

DTC No.	Detection Item	Trouble Areas	MIL	Memory	See page
P2401	Evaporative Emission Leak Detection Pump Stuck OFF	- Canister pump module (Reference orifice, leak detection pump, vent valve) - Connector/wire harness (Canister pump module - ECM) - EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) - ECM	Comes on	DTC stored	ES-312
P2402	Evaporative Emission Leak Detection Pump Stuck ON	- Same as DTC P2401	Comes on	DTC stored	ES-312
P2419	Evaporative Emission System Switching Valve Control Circuit Low	- Canister pump module (Reference orifice, leak detection pump, vent valve) - Connector/wire harness (Canister pump module - ECM) - EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) - ECM	Comes on	DTC stored	ES-318
P2420	Evaporative Emission System Switching Valve Control Circuit High	- Canister pump module (Reference orifice, leak detection pump, vent valve) - Connector/wire harness (Canister pump module - ECM) - ECM	Comes on	DTC stored	ES-318
P2610	ECM / PCM Internal Engine Off Timer Performance	- ECM	Comes on	DTC stored	ES-324
P2A00	A/F Sensor Circuit Slow Response (Bank 1 Sensor 1)	- Open or short in A/F sensor circuit - A/F sensor - ECM	Comes on	DTC stored	ES-326

HINT:

*: MIL flashes when a catalyst damaged misfire is detected.