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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME REQUIRED AND FREQUENCY	MIL ILLUM. TYPE
Manifold Pressure Sensor Rationality	P0106	Detects a MAP sensor that is stuck or out of range	Δ MAP > or < Table value	600 RPM < engine speed < 6375 RPM (A/T) 800 RPM < engine speed < 6375 RPM (M/T) Engine run time > 40 Sec Δ TCC < 1.25% Δ engine speed < 50 RPM Δ IAC < 5 Counts Δ TP < 100% Above conditions met for 1.5 Sec None of the following DTCs set: 107, 108, 117, 118, 122, 123, 125, 128, 130, 131, 132, 171, 172, 201, 202, 203, 204, 300, 336, 340, 341, 442, 446, 452, 453, 455, 496, 502, 506, 507, 601, 602, 604, 606, 740, 741, 742, 1441, 1621, 1860	112/128 Counts 125 mSec/Count Continuous check	DTC Type B
Manifold Pressure Too Low	P0107	Detects a continuous short to ground or a MAP sensor signal that is out of range low	MAP < 0.05 V (11.2 kPa)	Engine speed < 1000 RPM Or Engine speed > 1000 RPM TP >15.2% None of the following DTCs set: 122, 123	400/500 Counts 15.6 mSec/Count Continuous check	DTC Type B
Manifold Pressure Too High	P0108	Detects a continuous short to voltage or a MAP sensor signal that is out of range high	MAP > 3.80 V (82 kPa)	TP < 12% VSS < 1 MPH Engine run time > 20 - 40 Sec None of the following DTCs set: 122, 123	80/100 Counts 125 mSec/Count Continuous check	DTC Type B
Intake Air Temperature Sensor Shorted	P0112	Detects a continuous short to voltage or an IAT sensor signal that is out of range high	IAT < 48 Counts (> 128°C)	VSS > 15 MPH Engine run time > 320 Sec None of the following DTCs set: 502, 503	50/100 Counts 125 mSec/Count Continuous check	DTC Type B
Intake Air Temperature Sensor Open	P0113	Detects a continuous short to ground or an open in the IAT sensor signal	IAT > 253 Counts (< -57°C)	VSS < 15 MPH Engine run time > 320 Sec None of the following DTCs set: 117, 118, 125, 502, 503	50/100 Counts 125 mSec/Count Continuous check	DTC Type B
Coolant Temperature Sensor Shorted	P0117	Detects a continuous short to voltage or an ECT sensor signal that is out of range high	ECT < 4 Counts (> 138°C) (High R) Or ECT < 36 Counts (> 142°C) (Low R)	Engine run time > 128 Sec	50/100 Counts 125 mSec/Count Continuous check	DTC Type B
Coolant Temperature Sensor Open	P0118	Detects a continuous short to ground or an open in the ECT sensor signal	ECT > 251 Counts (< -50°C) (High R) Or ECT > 252 Counts (< -71°C) (Low R)	Engine run time > 60 Sec	50/100 Counts 125 mSec/Count Continuous check	DTC Type B
TP Sensor Low	P0122	Detects a TP Sensor that is open or shorted to ground	TP Sensor < 0.10 V	Engine running	50/200 Counts 125 mSec/Count Continuous check	DTC Type B
TP Sensor High (Part "A")	P0123	Detects a TP Sensor signal that is shorted to voltage	TP Sensor > 3.91 V	Engine running Engine speed < 1500 RPM MAP < 60 kPa None of the following DTCs set: 107, 108	110/200 Counts 125 mSec/Count Continuous check	DTC Type B

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TP Sensor High (Part "B")	P0123	Detects a TP Sensor signal that is shorted to voltage	TP Sensor > 4.86 V	Engine running None of the following DTCs set: 107, 108	110/200 Counts 125 mSec/Count Continuous check	DTC Type B
Closed Loop Engine Coolant Temperature Not Achieved	P0125	Under driving conditions, closed loop temperature should be achieved based on amount of cumulative air flow ingested and based on startup coolant temperature	Coolant temperature < 40°C when total airflow ≥ a calculation (based on start-up coolant temperature, minimum IAT, engine run time) Cumulative airflow is accumulated when airflow > 10 grams/Sec	30 Seconds ≤ Engine run time ≤ 1800 Seconds Startup ECT < 35°C IAT ≥ -7°C VSS > 5 MPH for 0.5 miles Average airflow > 0 grams/Sec None of the following DTCs set: 105, 107, 108, 112, 113, 117, 118, 122, 123 ,130, 131, 132, 133, 134, 171, 172, 201, 202, 203, 204, 300, 336, 440, 442, 446, 452, 453, 480, 502, 503, 506, 507, 601, 602, 1133, 1441, 1621	Once per trip Time based on flow	DTC Type B
Engine Coolant Temperature Below Thermostat Regulating Temperature	P0128	Under driving conditions, thermostat regulating temperature should be achieved based on amount of cumulative airflow ingested and based on startup coolant temperature	Coolant temperature < 75°C when total airflow ≥ a calculation (based on start-up coolant temperature, minimum IAT, engine run time) Cumulative airflow is accumulated when airflow > 10 Grams per Sec	30 Seconds ≤ Engine run time ≤ 1800 Seconds Startup ECT < 70°C IAT ≥ -7°C VSS > 5 MPH for 0.5 miles Average airflow > 0 grams/Sec None of the following DTCs set: 105, 107, 108, 112, 113, 117, 118, 122, 123 ,130, 131, 132, 133, 134, 171, 172, 201, 202, 203, 204, 300, 336, 440, 442, 446, 452, 453, 480, 502, 503, 506, 507, 601, 602, 1133, 1441, 1621	Once per trip Time based on flow	DTC Type B
O2S 1 Closed Loop Rationality	P0130	Detects an abnormal open loop condition due to O2 sensor signal in “not ready” range.	O2 voltage stuck between 300 and 600 mV (Sensor becomes “not ready” after 5 Seconds)	ECT > 70.3°C Engine run time > 200 Secs 1200 RPM < Engine speed < 3400 RPM 9.7% < TP < 39.8% Above conditions met for 2 Sec None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 171, 172, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	90/100 Counts 8 Counts/Sec Continuous check	DTC Type B
O2S 1 Lean	P0131	Detects an O2S 1 signal that is shorted to ground.	O2S 1 < 52 mV	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Closed Loop/Stoich 7.8 % < TP < 50.2% MAP > 20 kPa Above conditions met for 3.8 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	999/1000 Counts 8 Counts/Sec Continuous check	DTC Type B

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O2S 1 Rich	P0132	Detects an O2S 1 signal that is shorted to voltage.	O2S 1 > 946 mV while in closed loop or O2S 1 > 1024 mV while in open loop. (If O2S 1 >1050 mV for 10 Seconds straight, system goes open loop)	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Closed Loop/Stoich 7.8 < TP < 50.2% MAP > 20 kPa Above conditions met for 3.8 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	399/400 Counts 8 Counts/Sec Continuous check	DTC Type B
O2S 1 Slow Response	P0133	Determines if the O2S 1 is functioning properly by checking its response time	Avg. O2S 1 Response Times: R/L > 250 ms L/R > 300 ms	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 200 Sec No intrusive CATMON test active 5% < TP < 39.8% Delta TP < 800% per Sec 1000 RPM < engine speed < 3500 RPM Sensor predicted warm (Q113CNT > 20) Purge duty cycle > 35.5% PWM Airflow > 15 grams/Second Closed Loop/Stoich Time in enable > 0.75 Sec None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	60 Sec Once per trip	DTC Type B
O2S 1 Open	P0134	Detects an O2S 1 signal open circuit.	400 mV < O2S 1 < 500 mV	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 30 Sec No intrusive CATMON test active MAP > 20 kPa Above conditions met for 20 Sec 7.8% < TP < 55.8% Sensor predicted warm (O2 front sensor warm flag set) None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	999/1000 Counts 8 Counts/Sec Continuous check	DTC Type B

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O2S 1 Heater Circuit Malfunction	P0135	Detects O2 heater current out of acceptable range.	0.22 amps < O2S1 current < 1.6 amps	ECT > 69.5°C Fuel level > 9.8% Engine run time > 60 Sec No intrusive CATMON test active 10 V < system voltage < 18 V MAF < 16 grams/Second None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	198/200 Counts 1 Count/Sec Continuous check	DTC Type B
O2S 2 Post Oxygen Sensor Diagnostic (POSD)	P0136	Detects Post O2 sensor that has insufficient range to detect degraded catalyst or to provide closed loop fuel correction.	300 mV < O2S2 < 725 mV Pre-catalyst sensor voltage must have been above 600 mV for post sensor to fail stage 2 rich test and below 300 mV for post sensor to fail stage 2 lean test.	Stage 1 (Passive portion): Engine run time > 2 Sec Stage 2 (Intrusive portion): Stage 1 enabled time > 800 Sec Stage 1 not passed System voltage > 11 V 14 grams/Second <MAF < 100 grams/Second -20% < Short term FT < +20% No short term FT resets during intrusive test 1000 < RPM < 5000 20 < MPH < 80 Above conditions must be met for 2 Seconds. The following DTCs not set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 133, 137, 138, 140, 141, 171, 172, 201, 202, 203, 204, 300-304, 315, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1134, 1621	Stage 1 (Passive portion): Once per trip Stage 2 (Intrusive portion): Lean test - 12 Sec Rich test - 12 Sec Once per trip	DTC Type B
O2S 2 Lean	P0137	Detects an O2S 2 signal that is shorted to ground.	O2S 2 < 43.4 mV	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Closed Loop/Stoich 7.8 % < TP <50.2% MAP > 20 kPa Above conditions met for 3.8 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	1199/1200 Counts 8 Counts/Sec Continuous check	DTC Type B

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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME REQUIRED AND FREQUENCY	MIL ILLUM. TYPE
O2S 2 Rich	P0138	Detects an O2S 2 signal that is shorted to voltage.	O2S 2 > 1042 mV	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Closed Loop/Stoich 7.8 < TP < 50.2% MAP > 20 kPa Above conditions met for 3.8 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	399/400 Counts 8 Counts/Sec Continuous check	DTC Type B
O2S 2 Open	P0140	Detects an O2S 2 signal open circuit.	425 mV < O2S 2 < 473 mV	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active MAP > 20 kPa 7.8%< TP < 55.8% Sensor predicted warm (O2 front sensor warm flag set) None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	999/1000 Counts 8 Counts/Sec Continuous check	DTC Type B
O2S 2 Heater Circuit Malfunction	P0141	Detects O2 heater current out of acceptable range.	0.221 A < O2S2 current < 1.6 A	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V No intrusive CATMON test active Engine run time > 60 Sec 10 < System voltage < 18 volts MAF < 40 grams/Second None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	198/200 Counts 1 Count/Sec Continuous check	DTC Type B
Fuel Trim Lean	P0171	Monitors fuel control system for a lean failure	Fuel Trim Index > 155	Closed loop No interferring diagnostics in progress BARO > 74kPa 60°C < ECT < 125°C -25°C < IAT < 150°C MAP > 26 kPa RPM between 400 & 6500 VSS < 82 MPH None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 201, 202,. 203, 204, 300, 326, 336, 340, 341, 440, 442, 446, 452, 453, 455, 481, 496, 502, 503, 506, 601, 602, 604, 606, 1120, 1133, 1441, 1621	Continuous check	DTC Type B

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Fuel Trim Rich	P0172	Monitors fuel control system for a rich failure	Fuel Trim Index < 82	Closed loop No interferring diagnostics in progress BARO > 74 kPa 60°C < ECT < 125°C -25°C < IAT < 150°C MAP > 26 kPa RPM between 400 & 6500 VSS < 82 MPH None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 201, 202,. 203, 204, 300, 326, 336, 340, 341, 440, 442, 446, 452, 453, 455, 481, 496, 502, 503, 506, 601, 602, 604, 606, 1120, 1133, 1441, 1621	Continuous check	DTC Type B
Injector Circuit Problem	P0201 P0202 P0203 P0204	Monitors fuel injectors for proper electrical operation	Injector Current < 4 Amps	Engine running System voltage > 11 V	1 Sec Continuous check	DTC Type B
Random Misfire Cylinder 1 Misfire Cylinder 2 Misfire Cylinder 3 Misfire Cylinder 4 Misfire	P0300 P0301 P0302 P0303 P0304	These DTC s will determine if a random misfire or a cylinder specific misfire is occurring by monitoring crankshaft velocity.	Deceleration index Vs Engine Speed Vs Load and Camshaft Position Emission Failure Threshold = 1% Catalyst Damage Threshold = 5.6% through 22.5% depending on engine speed and engine load.	Engine run time > 1 engine cycle 437.5 RPM < Engine speed < 6406 RPM -7°C < ECT < 123 C If startup ECT < -7°C, then disable until ECT > 21°C. Fuel level > 4%. System voltage > 9 V. Fuel cutoff not active Power management is not active Brake torque management not active No rough road No TCS active Positive or zero torque Camshaft sensor is in sync with crank sensor + Throttle position Δ < 7.8125% . - Throttle position Δ < 1.5%. Misfire Diag is not requesting to disable TCC when transmission is in hot mode None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 171, 172, 326, 327, 336, 502, 503, 506, 507, 601, 602, 742, 1133, 1134, 315, 1621 The following are not currently utilized (N/A): Power Take Off is disabled –N/A. EGR Intrusive test not active – N/A. AIR Intrucive test not active – N/A Automatic transmission is not shifting – N/A.	Emission Exceedence = (5) failed 200 revolution blocks of 16. Failure reported with (1) Exceedence in 1st (16) 200 revolution block, or (4) Exceedences thereafter. 1st Catalyst Exceedence = Number of 200 revolution blocks as data supports for catalyst damage. 2nd and 3rd Catalyst Exceedence = (1) 200 revolution block with catalyst damage. Failure reported with (3) Exceedences in FTP, or (1) Exceedence outside FTP. Continuous check.	DTC Type B Emission DTC Type A Catalyst Damage
Crankshaft Position System Variation Not Learned (CASE)	P0315	Determines if the Crankshaft Position System Variation has not been learned.	Sum of compensation factors between 65404 and 65667	Manufacturers Enable Counter must be zero. None of the following DTCs set: 336, 340, 341.	0.5 Sec Once per ignition cycle.	DTC Type A

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ESC System Diagnostic	P0326	Detects a ESC System fault	Inst Volt < 0.01V or Inst. Volt > 4.99V	1800 RPM < Engine speed < 6400 RPM ECT > 70°C MAP > 55 kPa Engine run time > 20 Sec 0 < Vacuum < 40 None of the following DTCs set: 117, 118, 122,123, 327	60/80 Counts Continuous check	DTC Type B
ESC Sensor 1	P0327	Detects a and disconnected or faulty sensor	Max – Min Voltage < 0.0586V	1800 RPM < Engine speed < 6400 RPM ECT > 70°C MAP > 55 kPa Engine run time > 20 Sec 0 < Vacuum < 40 None of the following DTCs set: 117, 118, 122, 123	60/80 Counts Continuous check	DTC Type B
Crank Sensor Position	P0336	Detects too many resyncs in the crank sensor circuit	Resync Counter > 15 Counts	Engine running	125 ms / Count 256 Seconds Continuous check	DTC Type B
Cam Sensor 1 Missing	P0340	Detects an open / missing Cam sensor signal	No change in cam activity> 70 cycles As compared to crankshaft events	Engine running	125 ms / Count 70 cycles Continuous check	DTC Type B
Cam Sensor 1 Resync Too Often	P0341	Detects too many resyncs in the cam sensor circuit	Can Resync Counter >30 Counters	Engine running	125 ms / Count 256 Seconds Continuous Check	DTC Type B

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Catalyst Monitor	P0420	Detects a catalytic converter with unacceptable amounts of oxygen storage capabilities	Oxygen Storage Capability (OSC) Time Difference $\geq$ 0.141 Sec OSC Time Difference = OSC Worst Pass Thresh - OSC Compensation Factor * (O2S 2 Response Time - O2S 1 Response Time) OSC Worst Pass Thresh = 1.40 Sec	Engine speed $\geq$ 1000 RPM for minimum of 45 Sec since end of last idle period Engine run time > 530 Sec VSS < 3 MPH 525°C, < Predicted catalyst temp < 675°C BARO $\geq$ 74.9 kPa -20.5°C < IAT < 80°C 69.5°C < ECT < 125°C System voltage > 11 V Idle time $\leq$ 47 Sec Flow < 10.0 grams/Second Δ IAC < 20 Counts Δ Engine speed < 80 RPM -75 RPM $\leq$ (Engine Speed – Desired Speed) $\leq$ 150 RPM Purge duty cycle < 97% PWM Purge Learn Multiplier > 70% (180 Counts) Short term FT deviation < 27% (35 Counts) -23% < Short term FT average < +16% Test attempted this trip $\leq$ 12 Closed loop Fan clutch is stable A/C clutch is stable Rapid Step Response Enable Criteria OSC Time Difference Step $\geq$ 0.464 Sec OSC Time Difference $\geq$ 0.00 Sec None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 137, 138, 140, 141, 171, 172, 201, 202, 203, 204, 300, 326, 327, , 336, 340, 341, 442, 446, 452, 453, 455, 496, 502, 506, 507, 601, 602, 1133, 1134, 1137, 1138, 1621,	Maximum 1 test attempt per idle period Minimum of 1 test per trip Maximum of 6 tests per trip Maximum of 6 trips to detect failure when Rapid Step Response is enabled 15.6 MSec/Count	DTC Type A EWMA
Evap System Small Leak DeteCounted	P0442	Checks for a small leak in the fuel vapor handling system	EWMA value > 19.53 (unitless index)	BARO > 75 kPa 4°C < Startup ECT < 30°C 4°C < Startup IAT < 30°C Startup ECT – Startup IAT < 8°C 15% < Fuel level < 85% 7% < TP < 35% VSS < 85 MPH 11V < System voltage < 18V Purge enabled Δ Vacuum slosh < 0.012 – 0.844 inches of H_2O None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 452, 453, 502, 601, 602, 1133, 1621	Test must complete within cold test time limit = 330 Sec Individual test time = 15 Sec Once per trip EWMA ARL = 6	DTC Type A (Behaves as Type B)

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Evap Canister Vent Blocked	P0446	Checks for excessively high vacuum in the vapor handling system	Fuel tank vacuum < 12 inches of H_2O when the integrated vacuum timer reaches 5 integral seconds 8 Sec < Canister vent test timer < 100 Sec	BARO > 75 kPa 4°C < Startup ECT < 30°C 4°C < Startup IAT < 30°C Startup ECT – Startup IAT < 8°C 15% < Fuel level < 85% 7% < TP < 35% VSS < 85 MPH 11V < System voltage < 18V Purge enabled Δ Vacuum slosh < 0.012 – 0.844 inches of H_2O None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 452, 453, 502, 601, 602, 1133, 1621	100 Sec Once per trip	DTC Type A (Behaves as Type B)
Evap Tank Vacuum Sensor Low	P0452	Detects a continuous short to ground or a disconneCounted tank vacuum sensor	Tank vacuum transducer < 0.1 V	Engine running	25 Sec Continuous check	DTC Type B
Evap Tank Vacuum Sensor High	P0453	Detects a tank vacuum sensor that is shorted to voltage	Tank vacuum transducer > 4.9 V	Engine running	25 Sec Continuous check	DTC Type B
Evap System Large Leak DeteCounted	P0455	Checks for adequate vacuum being held in the fuel tank when applied	Fuel tank vacuum < 10 inches of H_2O when the integrated vacuum timer reaches 24 integral seconds	BARO > 75 kPa 4°C < Startup ECT < 30°C 4°C < Startup IAT < 30°C Startup ECT – Startup IAT < 8°C 15% < Fuel level < 85% 7% < TP < 35% VSS < 85 MPH 11V < System voltage < 18V Purge enabled Δ Vacuum slosh < 0.012 – 0.844 inches of H_2O None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 452, 453, 502, 601, 602, 1133, 1621	Max total run time = 330 Sec from purge enable Once per trip	DTC Type A (Behaves as Type B)
Low Speed Fan Fault	P0480	Checks commanded fan state against output to fan relay	System voltage > 9.5 V		50/100 Counts Continuous check	DTC Type B
High Speed Fan Fault	P0481	Checks commanded fan state against output to fan relay	System voltage > 9.5 V		50/100 Counts Continuous check	DTC Type B

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Evap Purge Valve Leaking	P0496	Checks for a stuck open purge solenoid	Fuel tank vacuum > 5 inches of H_2O when the integrated vacuum timer reaches 8 integral seconds 10 Sec < Purge solenoid leak timer < 120 Sec	BARO > 75 kPa 4°C < Startup ECT < 30°C 4°C < Startup IAT < 30°C Startup ECT – Startup IAT < 8°C 15% < Fuel level < 85% 7% < TP < 35% VSS < 85 MPH 11V < System voltage < 18V 1st failure: Purge enabled 2nd failure: Purge does not need to be enabled Δ Vacuum slosh < 0.012 – 0.844 inches of H_2O None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 452, 453, 502, 601, 602, 1133, 1621	Max run time = 120 Sec Once per trip	DTC Type A (Behaves as Type B)
Vehicle Speed Sensor Loss SMT Only	P0502	Detects a missing VSS signal	VSS < 2 MPH	1900 RPM < Engine speed < 3800 RPM TP < 1% 70 kPa < Vacuum < 80 kPa	5 Sec Continuous check	DTC Type B
Idle System – Low Engine Speed	P0506	This DTC detects if idle speed is too low.	Idle > 75 RPM lower than desired or idle spark retard too high	Engine tun time ≥ 20 Sec ECT ≥ 40°C BARO ≥ 75 kPa System voltage ≥ 11 V IAC > 145 counts TP < 0.78% VSS < 1 MPH Transmission is not shifting Intrusive diagnostics are not active Above conditions present ≥ 5 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 1133, 171, 172, 201-204, 300, 336, 442, 446, 452, 453, 455, 496, 502, 503, 601, 602, 1621	18.5 Seconds to fail. 6.25 Seconds to pass. Continuous.	DTC Type B
Idle System – High Engine Speed	P0507	This DTC detects if idle speed is too high.	Idle > 150 RPM higher than desired or idle spark advance too high	Engine run time ≥ 20 Sec ECT ≥ 40°C BARO ≥ 75 kPa System voltage ≥ 11 V IAC < 2 counts TP < 0.78% VSS< 1 MPH Transmission is not shifting Intrusive diagnostics are not active Above conditions present ≥ 5 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 130, 131, 132, 133, 134, 135, 1133, 171, 172, 201-204, 300, 336, 442, 446, 452, 453, 455, 496, 502, 503, 601, 602, 1621	12.5 Seconds to fail. 6.25 Seconds to pass. Continuous	DTC Type B
PCM Has EE PROM Flash Error	P0601	Checks for an incorrect checksum or Program ID failure	Checksum Detection Incorrect	Ignition in Unlock/Accessory, Run, or Crank. System voltage > 5.23 V	3 Cnts Continuous Continuous check	DTC Type A

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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME REQUIRED AND FREQUENCY	MIL ILLUM. TYPE
PCM EE PROM Not Programmed	P0602	Checks for a PCM that is not programmed	Unprogrammed EE PROM	Ignition in Unlock/Accessory, Run, or Crank. System voltage > 5.23 V	Immediately Once per key cycle	DTC Type A
O2S 1 Not Enough Switches	P1133	Determines if the O2S 1 is functioning properly by checking the number of switches	O2S 1 Switch Numbers Slope-time method (for caculation of avg response times) L/R < 2 Counts R/L < 2 Counts Half-cycle method (for checking initial response to fuel change) L/R < 30 R/L < 30	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V No intrusive CATMON test active Engine run time > 200 Sec 5% < TP < 39.8% 1000 RPM < engine speed < 3500 RPM Sensor predicted warm (Q113CNT > 20) Delta TP < 800% per Sec Purge duty cycle > 35.5% PWM Airflow > 15 grams/Second Closed Loop/Stoich Time in enable > 0.75 Sec None of the following DTC's set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	60 Sec Once per trip	DTC Type B
O2S 1 Response Time Difference	P1134	Determines if the O2S1 is functioning prperly by checking response time difference (R/L – L/R).	O2S1 –100 < (R/L – L/R) < 85	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V No intrusive CATMON test active Engine run time > 200 Sec 5% < TP < 39.8% 1000 RPM < Engine speed < 3500 RPM Sensor predicted warm (Q113CNT > 20) Delta TP < 800 % per Sec Purge duty cycle > 35.5% PWM Airflow > 15 grams/Second Closed Loop/Stoich Time in enable > 0.75 Sec None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	60 Sec Once per trip	DTC Type B

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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME REQUIRED AND FREQUENCY	MIL ILLUM. TYPE
O2S 2 Lean in PE	P1137	Detects and O2S 2 signal which is below the range considered lean while in power enrichment	O2S 1 > 700 O2S 2 < 400	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Vehicle operating in PE Safety fuel cut-off not active Closed Loop Sensor predicted warm (O2 rear sensor warm flag set) Above conditions met for 5 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	76/80 Counts 8 Counts/Sec Continuous check	DTC Type B
O2S 2 Rich in DFCO	P1138	Detects and O2S 2 signal which is above the range considered rich while in a fuel cutoff condition	O2S 2 > 647	ECT > 69.5°C Fuel level > 9.8% System voltage > 11 V Engine run time > 10 Sec No intrusive CATMON test active Vehicle operating in DFCO or FCO Closed Loop Sensor predicted warm (O2 rear sensor warm flag set) Above conditions met for 7 Seconds None of the following DTCs set: 106, 107, 108, 112, 113, 117, 118, 122, 123, 125, 128, 201, 202, 203, 204, 300-304, 336, 442, 446, 452, 453, 455, 496, 506, 507, 601, 602, 1621	76/80 Counts 8 Counts/Sec Continuous check	DTC Type B
PCM - EEPROM General Failure	P1621	Checks for a write error	Incorrect Checksum	Ignition in Unlock/Accessory, Run, or Crank. System voltage > 5.23 V	Immediately on next key up if flagged on previous key down Once at key down	DTC Type A
Output Driver 1 Fault	P1640 – P1670	Detects if an output driver is shorted	Short condition detected	Accessory must be in correct commanded state	140/150 MilliSeconds Continuos	DTC Type B