SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Transmission Control Module Read Only Memory	P0601	EPROM/Flash memory corruption (Incorrect program/calibrations checksum)	ROM fail count $\geq$ 5	None	Immediate Type A
Transmission Control Module Not Programmed	P0602	Non-programmed TCM (calibrations)	KbCOND_NoStartCal = TRUE	None	Immediate Type A
Transmission Control Module Long-Term Memory Reset	P0603	Wrong copy of Non-volatile Memory to RAM	Non-volatile memory (static or dynamic) checksum failure	None	Immediate Type A
Transmission Control Module Random Access Memory	P0604	RAM failure	RAM read/write failure (single word) RAM fail count $\geq$ 5	None	Immediate Type A
Transmission Control Module Long Term Memory Performance	P062F	NVM write error at key-down	TCM Non-Volatile Memory Incorrect flag = 1	8.0 $\leq$ Ignition Voltage $\leq$ 18.0 V Ignition ON	Immediate Type A

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Transmission Fluid Temperature Sensor Performance	P0711	The DTC detects the following failure modes of the TFT: 1) A sensor that remains at a value. (Stuck Sensor) 2) A sensor that remains at a value. (Stuck Sensor) 4) Transmission Temperature remains below 20° C for a calibrated time dependant on startup transmission temperature.	Fail Case 1 ΔTFT < 2° C. TCC Slip ≥ 120 RPM for 300 sec cumul. -39° C. ≤ TFT at startup ≤ 20° C. Fail Case 2 ΔTFT < 2° C. 129° C ≤ TFT at startup ≤ 149° C. Fail Case 4 TFT ≤ 20° C after a calibrated amount of time based on a 2D lookup table.	For fail case 1, 2, and 4: Common ignition voltage enable, Common engine speed enable, No Engine Coolant DTC's, No OSS P0722, P0723 DTCs, No ISS P0716, P0717 DTCs, P0711 has not passed this ignition cycle, -39 deg C <= trans fluid temp <= 149 deg C Fail case 1: -39 deg C <= trans fluid temp <= 20 C at startup, Engine coolant => 70 deg C, Engine Coolant has changed => 55 deg C since startup, Vehicle speed => 8 KPH for > 300 seconds (cumulative timer) Fail case 2: 129 deg C <= trans fluid temp <= 149 C at startup, Engine coolant => 70 deg C, Engine Coolant has changed => 55 deg C since startup, Vehicle speed => 8 KPH for => 300 seconds (cumulative timer) Fail case 4: Valid TPS, Torque signal, and Crank Signals. 50 ≤ Engine Torque ≤ 1492 8 ≤ Throttle Position ≤ 90 8 ≤ Vehicle Speed ≤ 511 500 ≤ Engine Speed ≤ 6500 -39 ≤ Coolant Temperature ≤ 149	Fail case 1: 80.0 seconds Fail case 2: 80.0 seconds Fail case 4: Between 200 & 1900 seconds dependant on startup trans temperature. Type C-
Transmission Fluid Temperature Sensor Circuit Low Voltage	P0712	Continuous Short-to-Ground in Trans Fluid Temperature sensor or TFT signal circuit	Trans Temp Sensor ≤ 43.19 ohm Trans Temp > 150C	8V ≤ Ignition Voltage ≤ 18V for 5 sec 500 ≤ Engine RPM ≤ 6500 for 5.0 sec	12.0 sec Type C-
Transmission Fluid Temperature Sensor Circuit High Voltage	P0713	Continuous Open of Short to Voltage in Transmission Fluid Temperature sensor or TFT signal circuit	Trans Temp Sensor ≥ 171862 ohm Trans Temp < -40C (-40F)	No P0716, P0717, P0722, P0723 DTCs 500 ≤ Engine RPM ≥ 6500 for 5.0 sec 8.0 ≤ Ignition Voltage ≤ 18.0 V OSS ≥ 65.6* RPM for 200 sec cumul. TCC Slip ≥ 120 RPM for 200 sec cumul.	80.0 sec Type C-

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Input Speed Sensor Performance	P0716	0 – 6500 RPM Unrealistically large drop in Input Speed in a very period of time that remains	Input Speed drop ≥ 1000 RPM	No P0717, P0722, P0723, P0752, P0973, P0974 DTCs 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5 sec No TP malfunction No Engine Torque malfunction 50 ≤ Engine Torque ≤ 1492 N-m TPS ≥ 8.0% Vehicle Speed ≥ 16.0 kph ISS ≥ 1050 RPM for 2.0 sec ∆ISS ≤ 500 RPM for 2.0 sec	3.25 sec Type B
Input Speed Sensor Circuit Low Voltage	P0717	0 – 6500 RPM Low Input Speed with large vehicle speed	Input Speed < 100.0 RPM	No P0717, P0722, P0723 DTCs No Engine Torque malfunction 500 ≤ Engine RPM ≤ 6500 for 5 sec 8V ≤ Ignition Voltage ≤ 18V Vehicle Speed ≥ 16.0 kph 50 ≤ Engine Torque ≤ 1492 N-m	4.5 sec Type B
Brake Switch Circuit Low Voltage	P0719	TCM brake switch input senses low voltage while decelerating	TCM indicates the Brake State is continuously OFF/Not Applied while the vehicle decelerates several times	The code has not passed this ignition cycle. 8V ≤ Ignition Voltage ≤ 18V P0719 has not passed this key on No vehicle speed faults The vehicle decelerates in the following manner: Vehicle Speed > 32 kph for 6.0 sec Then 32 kph ≥ Vehicle Speed ≥ 8 kph for 6 sec Then Vehicle Speed < 8 kph for 2 sec	8 deceleration sequences are performed while the brake is sensed as being continuously OFF/Not Applied. Type C-
Output Speed Sensor Circuit Low Voltage	P0722	0 - 6500 RPM Low vehicle speed with large engine speed in Drive range	Drive 50 ≤ Engine Torque ≤ 1492 N-m Output Speed ≤ 65.6* RPM Park/Neutral 1492≤ Engine Torque ≤ 1492 N-m	No, P0716, P0717, P0723 No TPS malfunction No Engine Torque malfunction 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec Range ≠ P/N TCC Slip ≥ -20 RPM Trans Temp ≥ -40° C. 1500 RPM ≤ Input Speed ≤ 5000 RPM TPS ≥ 8.0%	4.5 sec Type B

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Output Speed Sensor Circuit Intermittent	P0723	0 - 6500 RPM Loss of vehicle speed when vehicle is moving	Drop in Output Speed > 393.5* RPM in any Drive range	No P0716, P0717, P0974 DTC 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≥ 6500 for 5 sec Range ≠ P/N 50 Nm ≤ Engine Torque ≤ 1492 Nm Time since last range change ≥ 6.0 sec +∆VSS, loop-to-loop, ≤ 164* RPM for 2.0 sec ∆ISS ≤ 500 RPM for 2.0 sec Output Speed ≥ 327.9* RPM for 2.0 sec	3.25 sec Type B
Brake Switch Circuit High Voltage	P0724	TCM brake switch input senses high voltage since start-up while accelerating	TCM indicates the Brake State is continuously ON/Applied since start-up while the vehicle accelerates several times	The code has not passed this ignition cycle. 8V ≤ Ignition Voltage ≤ 18V for 5 sec DTC has not ran this key ON. No vehicle speed faults The vehicle accelerates in the following manner: Vehicle Speed < 8 kph for 1.0 sec Then 8 kph ≤ Vehicle Speed ≤ 32 kph for 6 sec Then Vehicle Speed > 32 kph for 6 sec	The Brake is continuously on for 900 seconds 8 acceleration sequences are performed while the brake is sensed as being continuously ON/Applied. Type C-
Torque Converter Clutch System - Stuck Off	P0741	High TCC slip with TCC commanded on	TCC slip ≥ 150 RPM Count = 2	No P0716, P0717, P0722, P0723, P0742, P0842, P0843 No TPS malfunction No Engine Torque and Speed malfunctions 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec 50 ≤ Engine Torque ≤ 1492 N-m 8.0% ≤ TPS ≤ 90% 20° C. ≤ Trans Temp ≤ 130° C. TCC Capacity ≥ 65% for 5.0 sec Commanded Gear > 1 TCC Mode = On or Locked On	8 sec Type B

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Torque Converter Clutch System - Stuck On	P0742	Low TCC slip with TCC commanded off	-20 rpm ≤ TCC Slip Speed ≤ 40 rpm Count = 3	No P0716, P0717, P0722, P0723, P0741 No TPS malfunction No Engine Torque and Speed malfunctions 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec TCC commanded OFF 50 ≤ Engine Torque ≤ 1492 N-m 20° C. ≤ Trans Temp ≤ 130° C. 8% ≤ TPS ≤ 90% 16 kph ≤ VSS ≤ 511 kph 1.739 ≤ Ratio ≤ .6333	6 sec Type B
1-2 Shift Solenoid Valve Performance - No First or Fourth Gear	P0751	2-2-3-3 shift pattern	Fail Case 1 Commanded 1st 1.5446 < Ratio < 1.7072 1.0 sec. after gear change Fail Case 2 Commanded 4th 0.95 < Ratio < 1.05 1.0 sec. after gear change Count = 2	No P0716, P0717, P0722, P0723, P0742, P0973, P0974, P0976, P0977, or TPS DTCs (see below) No Engine Torque malfunction 500 ≤ Engine RPM ≤ 6500 for 5.0 sec 8V ≤ Ignition Voltage ≤ 18V TPS ≥ 8.0% 150 RPM ≥ ISS ≥ 6000 RPM 20° C. < Trans Temp < 130° C. 0.30 sec. after gear change 150 ≤ Input Speed ≤ 6000 RPM 50 ≤ Engine Torque ≤ 1492 N-m Output Speed ≥ 65.6* RPM	Fail Case 1 2.0 sec Fail Case 2 4.0 sec Type B
1-2 Shift Solenoid Valve Performance - No Second or Third Gear	P0752	1-1-4-4 shift pattern	Fail Case 3 Commanded 2nd 2.8120 < Ratio < 3.1080 1.0 sec. after gear change Fail Case 4 Commanded 3rd 0.6469 < Ratio < 0.7150 1.0 sec. after gear change Count = 2	See P0751	Fail Case 3 2.0 sec Fail Case 4 3.0 sec Type B

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
2-3 Shift Solenoid Valve Performance - No First or Second Gear	P0756	4-3-3-4 shift pattern	Fail Case 5 -20 ≤ TCC Slip ≤ 8191 RPM VSS ≥ 65.6* RPM Commanded 1st 0.65 ≤ Ratio ≤ 1.87 1.0 sec. after gear change Fail Case 6 Commanded 2nd 0.95 ≤ Ratio ≤ 1.05 1.0 sec. after gear change Count = 2	See P0751	Fail Case 5 2.0 sec Fail Case 6 3.0 sec Type A
2-3 Shift Solenoid Valve Performance - No Third or Fourth Gear	P0757	1-2-2-1 shift pattern	Fail Case 7 40 ≤ Engine Torque ≤ 1492 N-m Commanded 3rd 1.5446 < Ratio < 1.7073 1.0 sec. after gear change Fail Case 8 0 ≤ Engine Torque ≤ 1492 N-m Commanded 4th 1.5446 < Ratio < 3.1080 1.0 sec. after gear change 1.2 sec after range change Range ≠ Neutral Count = 2	See P0751	Fail Case 7 2.0 sec Fail Case 8 2.0 sec Type A
Torque Converter Clutch Release Switch Circuit Low Voltage	P0842	Closed Release Switch, indicating TCC is applied when TCM is commanding TCC off and TCC slip shows TCC is OFF.	Release switch closed (grounded). Count = 2	No P0716, P0717, P0741, P0742 P2764, P2763 DTCs No Engine Speed or Torque Malfunctions 500 ≤ Engine RPM ≤ 6500 for 5.0 sec TCC commanded OFF 100 RPM < Slip Speed 50 < Engine Torque < 1492 N-m 20° C. < Trans Temp < 130° C. 16 kph < VSS < 512 kph	8.0 sec Type B

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Torque Converter Clutch Release Switch Circuit High Voltage	P0843	Open Release Switch, indicating TCC not applied when TCM is commanding TCC ON and TCC slip shows TCC is locked	Release switch open for 6.0 sec Count = 2	No P0716, P0717, P0741, P0742 P2764, P2763 DTCs No Engine Speed Malfunction 500 ≤ Engine RPM ≤ 6500 for 5.0 sec TCC commanded ON, or LockON -20 < Slip < 60 RPM 50 < Engine Torque < 1492 N-m 20° C. < Trans Temp < 130° C. 150 < TCC Pressure < 830 kPa	6.0 sec Type B
1-2 Shift Solenoid Control Circuit Low Voltage	P0973	0 – 12 V Continuous Short-to-Ground OR Open in Shift Solenoid A or SSA circuit (ODM)	SSA ODM feedback circuit state ≠ PCM commanded state	Ignition ON 8.0 ≤ Ignition Voltage ≤ 18.0 V	Fail count = 44 out of 50 (Time ≈ 4.4 sec) Type B
1-2 Shift Solenoid Control Circuit High Voltage	P0974	0 – 12 V Continuous Short-to-Power in Shift Solenoid A or SSA circuit (ODM)	SSA ODM feedback circuit state ≠ PCM commanded state	Ignition ON 8.0 ≤ Ignition Voltage ≤ 18.0 V	Fail count = 44 out of 50 (Time ≈ 4.4 sec) Type B
2-3 Shift Solenoid Control Circuit Low Voltage	P0976	0 – 12 V Continuous Short-to-Ground OR Open in Shift Solenoid B or SSB circuit (ODM)	SSB ODM feedback circuit state ≠ PCM commanded state	Ignition ON 8.0 ≤ Ignition Voltage ≤ 18.0 V	Fail count = 44 out of 50 (Time ≈ 4.4 sec) Type A
2-3 Shift Solenoid Control Circuit High Voltage	P0977	0 – 12 V Continuous Short-to-Power in Shift Solenoid B or SSB circuit (ODM)	SSB ODM feedback circuit state ≠ PCM commanded state	Ignition ON 8.0 ≤ Ignition Voltage ≤ 18.0 V	Fail count = 44 out of 50 (Time ≈ 4.4 sec) Type A
Transmission Fluid Pressure Position Switch Circuit	P1810	0 – 12 V Invalid state of Pressure Switch Assembly circuit	Illegal PSA range	500 ≤ Engine RPM ≤ 6500 for 5.0 sec	60.0 sec Type B
Transmission Fluid Pressure Valve Position Switch Indicates Park/Neutral with Drive Ratio	P1816	0 – 12 V Drive Ratio with P/N Range	PSA = P/N 2.7528 ≤ Ratio ≤ 3.1672 1.5122 ≤ Ratio ≤ 1.7397 0.93 ≤ Ratio ≤ 1.07 0.6333 ≤ Ratio ≤ 0.7296	No P0716, P0717, P0722, P0723, P0751, P0752, P0756, P0757 P0973, P0974, P0976, P0977, or TPS DTCs (see below) 500 ≤ Engine RPM ≤ 6500 for 5.0 sec Output Speed ≥ 82* RPM 8% ≤ TPS ≤ 90.0% 50 ≤ Engine Torque ≤ 1492 N-m	6.0 sec Continuous Type B

SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Transmission Fluid Pressure Valve Position Switch Indicates Drive without Drive Ratio	P1818	0 – 12 V Reverse Ratio with Park/Neutral OR Drive Range	PSA = P/N, or Drive And 1.9930 ≤ Ratio ≤ 2.2928	No P0716, P0717, P0722, P0723, P0751, P0752, P0756, P0757, P0973, P0974, P0976, P0977 No TPS Malfunction No Engine Torque Malfunction 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec Output Speed ≥ 50* RPM TPS ≥ 3% 20 ≤ Engine Torque ≤ 1492 N-m Trans Temp > 0° C	3.0 sec Continuous Type B
Ignition 1 Switch Circuit Low Voltage	P2534	Continuous Open/Short-to-Ground in TCM Ignition 1 Switch circuit	Every 25 msec, the FAIL counter is incremented if an open or a short to ground is detected	Engine running	Fail Count = 200 out of 220 (Time ≈ 5 sec) Continuous Type A
Torque Converter Clutch Pressure Control Solenoid Control Circuit High Voltage	P2763	Continuous Short-to-Voltage in TCC PWM circuit	Every 100 msec, the FAIL counter is incremented if a short to voltage is detected	Ignition ON 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec TCC Commanded ON	Fail Count = 44 out of 50 (Time ≈ 4.4 sec) Continuous Type B
Torque Converter Clutch Pressure Control Solenoid Control Circuit Low Voltage	P2764	Continuous Open/Short-to-Ground in TCC PWM circuit or TCC PWM solenoid	Every 100 msec, the FAIL counter is incremented if an open or a short to ground is detected	Ignition ON 8V ≤ Ignition Voltage ≤ 18V 500 ≤ Engine RPM ≤ 6500 for 5.0 sec	Fail Count = 44 out of 50 (Time ≈ 4.4 sec) Continuous Type B
Controller Area Network Bus Communication Error	***U0073***	TCM cannot communicate on the CAN Bus	GetCNDD_b_BusOffSt() = TRUE	Ignition ON 8V ≤ Ignition Voltage ≤ 18V for 5 seconds	Fail Count = 5 out of 5 (Time ≈ 5 sec) Type B
Lost Communications with Engine Control System	***U0100***	Communication between TCM & Engine Control System Lost	CAN Bus ECM Error flag = 1	Ignition ON 8V ≤ Ignition Voltage ≤ 18V for 5 seconds	Fail Count = 12 out of 12 (Time ≈ 12 sec) Type B