SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Vehicle Speed Sensor - Low Input	P0502	0 RPM to 8192 RPM This DTC detects a low output speed when the vehicle has a large engine/input speed in a driving gear range.	Output Speed < 50 RPM	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No PSA DTC No TPS DTC's No ISS DTC's No MAF DTC's No MAP DTC's No OSS Loss DTC Gear Range is not Park/Neutral Throttle Position => 10% Engine Torque > 80 and < 400/650 ft. lbs. No change in 4WD Lo for => 2.0 sec Input Speed > 1400 RPM Engine Vacuum > 0 & < 105.47 kPA	4.8L = 4.0 sec 6.0L = 3.5 sec All 8.1L with 3.73-4.10 axles = 3.0 sec All 8.1L with 4.56 - 5.13 axles 2.5 sec Continuous	DTC Type Federal C California B FED OBD-2 B
Vehicle Speed Sensor - Loss	P0503	0 RPM to 8192 RPM This DTC detects an unrealistic large change in Output Shaft speed.	Not in Park Neutral decrease > 1000 RPM In Park/Neutral decrease > 8192 RPM (P/N is caled out)	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No PSA DTC No PSA change for > 6.0 seconds Max VSS positive spike must be < 250 RPM for < 2.0 sec. (Loop to Loop reads) No change in 4WD Lo for => 2.0 sec	4.8L = 3.9 sec 6.0L = 3.4 sec All 8.1L with 3.73-4.10 axles = 2.9 sec All 8.1L with 4.56 - 5.13 axles 2.4 sec	DTC Type Federal C California B FED OBD-2 B
Trans Fluid Temp Sensor Circuit Range/ Performance	P0711	The DTC detects two failure modes of the TFT:	1) Stuck sensor: TFT has not changed > 2.25 deg C	Sys Volts > 8.0 & < 18.0 for > 0.5 sec No Engine Coolant DTC 's No VSS DTC's	1) Stuck sensor: > 80 seconds	DTC Type
(Contains 2 tests)		 A sensor that remains at a value. (Stuck Sensor) an unrealistically large change in Transmission Temperature. 	2) Unrealistic change: TFT changes > 20 deg C	No ISS DTC's No Trans Component Slipping DTC Engine run > 400 RPM for > 35.0 sec. (At this time, the TFT is captured for pass or fail comparison) TFT => 10 AD counts and <= 251 AD counts TFT between -40.5 deg C and +21 C at startup Engine Coolant => +84.75 deg C Engine Coolant has changed => +54.75 deg C since startup Vehicle Speed since startup => 5.0 MPH => 750.0 seconds (cumulative timer) TCC Slip => 60 RPM => 500.0 sec. (cumulative timer)	OR 2) Unrealistic change: 14 times in 7 seconds Continuous	Federal C California C
Trans Fluid Temp Sensor Circuit - Low Input (High Temperature indicated)	P0712	.0V to 5.0V The DTC detects a continuous short to ground in the TFT signal circuit or the TFT sensor	Raw TFT < 7 A/D counts	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec P0713 fault not active	17.0 seconds Continuous	DTC Type Federal C California C

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Trans Fluid Temp. Sensor Circuit - High Input (Low Temperature)	P0713	.0V to 5.0V The DTC detects a continuous open or short to voltage in the TFT signal	Raw TFT > 253 A/D counts	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec P0712 fault not active	407.0 seconds	DTC Type Federal C
		circuit or the TFT sensor			Continuous	California C
Input Speed Sensor Circuit- Range/Perf	P0716	0 RPM TO 8192 RPM The DTC detects an unrealistically large change	Input Speed changes => 1300 RPM in a Drive or Reverse Range as indicated from the PSA.	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No ISS Low DTC	4.95 seconds	DTC Туре
		in Input Speed		No TPS DTC's No VSS DTC's No SSA Sol. DTC's 751, 752, 753		Federal C California B
				ISS Low has passed during Ign cycle TPS > 10% VSS > 7.0 MPH Test Passed ISS low		FED OBD-2 B
Input Speed Sensor Circuit- No Signal	P0717	0 RPM TO 8192 RPM The DTC detects a Low Input Speed when the	Input Speed < 100 RPM	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No VSS DTC's	5.0 seconds Continuous	DTC Type
		vehicle has large Vehicle and Engine Speeds		No PSA DTC PSA indicating not in P/N VSS > 7.0 MPH		Federal C California B
						FED OBD-2 B
TCC System Stuck OFF	P0741	This DTC detects excessive torque converter slip when the TCC is commanded ON	TCC Slip => 125.0 RPM	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No ISS DTC's	3.0 seconds 4th occurrence	DTC Type
		in 2nd and/or 3rd Gear Only. (High TCC Slip in		No PSA DTC No TPS DTC's		Federal C
		4th gear is detected by P1870 Transmission Component Slipping)		No VSS DTC's No TCC Stuck ON DTC No TCC PWM Electrical DTC's		California B FED OBD-2
		Component Suppling)		PSA = D4, D3, or D2 Ratio = 2nd or 3rd gear		B
				Trans Fluid Temp > +20C & < 150.0C TPS => 10% and < 100% TCC Locked On >0.1 seconds		
				No PSA Change > 6 seconds TCC Capacity => 60%		

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
TCC System Stuck ON	P0742	This DTC detects low torque converter slip when the TCC is commanded off.	TCC Slip is between -15 RPM and +15 RPM	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No ISS DTC's	3.0 seconds 4h Occurrence	DTC Type
				No PSA DTC No VSS DTC's		Federal C
				No TCC Stuck OFF DTC No TCC PWM Electrical DTC		California B
				No Transmission Component Slipping DTC No TPS DTC's		FED OBD-2 B
				No MAP DTC's Commanded Gear not = to 1st		
				PSA indicates D4 Engine Speed between 800 & 4400 RPM		
				Speed Ratio between 0.95 & 2.18 TPS > $12 \& < 100\%$		
				Engine Torque > 125 ft lbs and < 400-650 ft. lbs.		
				VSS > 7 & < 75 MPH Trans Fluid Temp > $\pm 20C$ & < 130.0C		
				No PSA Change < 6.0 seconds Engine Vacuum > 0 & < 105.47 kPA (Caled Out)		

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Shift Solenoid A	P0751	This DTC detects a Stuck	Commanded Gear = 1 and	Engine running > 400 RPM > 7.0 sec	2nd Occurrence	
Performance		Shift Solenoid by using	Ratio = $2nd > 2.0 sec$	Sys Volts $> 10.0 \& < 18.0 \text{ for} > 0.5 \text{ sec}$		DTC Type
		incorrect Gear Ratios with	AND	No ISS DTC's		
NORMAL PATTERN		the Commanded Gear.	Commanded Gear = 4/	No PSA DTC		Federal C
1-2-3-4			with TCC Locked	No VSS DTC's		
			Ratio = $3rd > 3.75$ seconds	No TCC Stuck ON DTC		California B
Shift Pattern				No TCC PWM Electrical DTC		
2-2-3-3				No SSA or SSB Electrical DTC's		FED OBD-2
			STUCK Shift Pattern = 2222	No TPS DTC's No MAP DTC's		В
			<u>2</u> -2-3- <u>3</u>	No Trans Component Slipping DTC		
			Ratio Note:	No MAF DTC's		
			Ratio is calculated in 4th with TCC in	No in 4WD Low		
			Apply or Locked by NE/NO	PSA = D4		
			- FF-5 01 = 0000 0 5 1 = 000	TPS > 10.0 & < 100%		
				TFT => 20.25 & <= 130 Deg C		
				Engine Torque > 80 ft lbs and <		
				400-650 ft. lbs.		
				Output & Input Speeds => 7 RPM		
				No PSA Change < 6.0 seconds		
				Engine Vacuum > 0 & < 105.47 kPA (Caled Out)		
				GEAR RATIO RANGES		
				1 st gear = 2.52 to 2.42		
				2nd gear = 1.50 to 1.44		
				3rd gear = 1.03 to 0.98		
				4th gear With TCC On =		
				FAIL = 1.03 to 0.98		
				PASS = 0.78 to 0.727		

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Shift Solenoid A Performance NORMAL PATTERN 1-2-3-4 Shift Pattern 1-1-4-4	P0752	This DTC detects a Stuck Shift Solenoid by using incorrect Gear Ratios with the Commanded Gear.	Commanded Gear = 2 Ratio = 1st > 2.25 seconds. STUCK Shift Pattern = 1- <u>1</u> -4-4	Engine running > 400 RPM > 7.0 sec Sys Volts > 10.0 & < 18.0 for > 0.5 sec No ISS DTC's No PSA DTC No VSS DTC's No TCC Stuck ON DTC No TCC PWM Electrical DTC No SSA or SSB Electrical DTC's No TPS DTC's No TAB COMPONENT Slipping DTC No MAP DTC's No in 4WD Low PSA = D4 TPS > 10.0 & < 100% Engine Torque > 80 ft lbs and < 400-650 ft. lbs. Output & Input Speeds => 7 RPM TFT => 20. 25 & <= 130 Deg C No PSA Change < 6.0 seconds Engine Vacuum > 0 & < 105.47 kPA (Caled Out) GEAR RATIO RANGES 1st gear = 1.52 to 1.44 3rd gear = 1.02 to 0.98 4th gear = 0.77 to 0.727	5th Occurrence Continuous	DTC Type Federal C California B FED OBD-2 B
Shift Solenoid A Electrical	P0753	0V to 12V This DTC detects a continuous open, short to ground, or short to battery in the SSA circuit or the SSA solenoid.	Output State is invalid	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec	43 counts out of 50 counts. Continuous	DTC Type Federal C California B FED OBD-2 B

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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Shift Solenoid B Performance NORMAL PATTERN 1-2-3-4 Shift Pattern 4-3-3-4	P0756	This DTC detects a Stuck Shift Solenoid by using incorrect Gear Ratios with the Commanded Gear.	Commanded Gear = 1 Ratio = 4th > 2.5 sec AND Commanded Gear = 2 Ratio = 3rd > 2.7 sec STUCK Shift Pattern = $\underline{4} \cdot \underline{3} \cdot 3 - 4$	Engine running > 400 RPM > 7.0 sec Sys Volts > 10.0 & < 18.0 for > 0.5 sec No ISS DTC's No PSA DTC No VSS DTC's No TCC Stuck ON DTC No TCC PWM Electrical DTC No SSA or SSB Electrical DTC's No TPS DTC's No MAP DTC's No Trans Component Slipping DTC No MAF DTC's No in 4WD Low Output & Input Speeds => 7 RPM TPS > 10.0 & < 100% TFT => 20.25 & <= 130 Deg C Engine Torque > 80 < 400-650 ft. lbs. Engine Vacuum > 0 & < 105.47 kPA (Caled Out)	2nd Occurrence Continuous	DTC Type Federal C California A FED OBD-2 A
Shift Solenoid B Performance	P0757	This DTC detects a Stuck Shift Solenoid by using	Commanded Gear = 3 Ratio = 2nd > = 2.25 seconds	GEAR RATIO RANGES 1st gear = 2.52 to 2.42 2nd gear = 1.52 to 1.44 3rd gear = 1.02 to 0.98 4th gear = 0.77 to 0.727 Engine running > 400 RPM > 7.0 sec Sys Volts > 10.0 & < 18.0 for > 0.5 sec	7 th Occurrence (rolling counter)	DTC Type
NORMAL PATTERN 1-2-3-4 Shift Pattern 1-2-2-1		incorrect Gear Ratios with the Commanded Gear.	STUCK Shift Pattern = 1-2- <u>2</u> -1	No ISS DTC's No PSA DTC No VSS DTC's No TCC Stuck ON DTC No TCC PWM Electrical DTC No SSA or SSB Electrical DTC's No TPS DTC's No Trans Component Slipping DTC No MAF DTC's No in 4WD Low Output & Input Speeds => 7 RPM TPS > 10.0 & < 100% TFT => 20. 25 & <= 130 Deg C Engine Torque > 80 < 400-650 ft. lbs. Engine Vacuum > 0 & < 105.47 kPA (Caled Out)		Federal C California A FED OBD-2 A
				GEAR RATIO RANGES 1st gear = 2.52 to 2.42 2nd gear = 1.52 to 1.44 3rd gear = 1.02 to 0.98 4th gear = 0.77 to 0.727		

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Shift Solenoid B	P0758	0V to 12V	Output State is invalid	Engine running > 400 RPM > 7.0 sec	43 counts out of 50 counts.	DTC Type
Electrical		This DTC detects a continuous open, short to ground, or short to battery in		Sys Volts > 8.0 & < 18.0 for > 0.5 sec	Continuous	Federal C
		the SSB circuit or the SSB solenoid.				California A
						FED OBD-2 A
PSA Circuit Malfunction	P1810	0V to 12V This DTC detects an invalid	Illegal Range is true Or an Illegal PSA combination is true.	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec	60.0 seconds	DTC Type
(Fail Case 1: Illegal Range		state of the PSA sensor or the PSA circuit by	of an inegal i SA comonitation is true.	5ys voits ~ 8.0 & < 16.0 101 ~ 0.5 sc	Continuous	Federal C
Combination) see note below		deciphering the PSA inputs.				California B
						FED OBD-2 B
PSA Circuit Malfunction	P1810	0V to 12V This DTC detects an invalid	PSA indicates D2 or D4 or Reverse before and after Engine Start-up	No VSS DTC's System Voltage > 6.5 and < 18.0 Volts > 30.0 sec	7.0 seconds Continuous	DTC Type
(Fail Case 2: D2 start-up test)		state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.		(allows for voltage dips) Vehicle Speed < 5.0 MPH Engine Speed Transition:		Federal C
See Note below 25 ms loop		deephering the 134 mputs.		Below 50 RPM for > 0.3 sec. then, between 50 and 525 RPM > 0.00625 sec. then > 525		California B
23 ins 100p				RPM. Input Speed > 200 RPM (ISS must stay > 200 RPM in order to increment fail timer) (NOTE: This will run ONLY ONCE per POWER ON Cycle. If test is passed, failed or invalid it will not run again until the PCM powers down.)		FED OBD-2 B
PSA Circuit	P1810	0V to 12V	A) PSA indicates P/N	Engine running $> 400 \text{ RPM} > 7.0 \text{ sec}$	A) 15.0 seconds	
Malfunction (Fail Case 3:		This DTC detects an invalid state of the PSA sensor or	when Ratio indicates $< = 1.05$	Sys Volts > 8.0 & < 18.0 for > 0.5 sec No TPS DTC's	B) 15.0 seconds	DTC Type
Incorrect range to ratio test)		the PSA circuit by deciphering the PSA inputs.	OR B) PSA indicates Reverse	No VSS DTC's No ISS DTC's No PSA DTC	C) 7.0 seconds	Federal C California B
			when Ratio indicates outside Reverse but within	No PSA DTC No MAP DTC's		California B
			the drive range ratios. <u>OR</u> C) PSA indicates D4, D3,	No Shift Solenoid Electrical or Performance DTC's No MAF DTC's Vehicle > 5 MPH	Continuous	FED OBD-2 B
Note: A pass must			D2, or D1 when Ratio	TPS > 10% < 100%		
occur on all 3 fail cases to set the pass			indicates Reverse. Drive Ratios = 2.63 to 0.95	Engine Torque: 80 to 400-650 ft. lbs.		
for PSA; Case 1, Case 2 and One of the 3rd			Rev Rat = 2.05 to 2.11	Engine Vacuum $> 0 \& < 105.47 \text{ kPA}$ (Caled Out)		
Cases.			NOTE: Ratio is formed from NI/NO			

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TCC PWM Solenoid Electrical	P1860	0V to 12V This DTC detects a continuous open, short to ground, or short to battery in the TCC PWM circuit or the TCC PWM solenoid.	Output State is invalid	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec	43 out of 50 counts. Continuous	DTC Type Federal C California B FED OBD-2
						B
Transmission Component Slipping	P1870	This DTC detects Slip in the Torque Converter Clutch and/or the Forth gear Clutch	Slip between 100 and 550 RPM	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No ISS DTC's	10 seconds 3rd occurrence	DTC Type
Fail Case 1		with the TCC Locked in 4th Gear.		No VSS DTC's No TPS DTC's No PSA DTC		Federal C California B
				No TCC Stuck On, Off or Electrical DTC's No Shift Solenoid Electrical or Performance DTC's Shift Sol Perf counters are clear. No MAP DTC's No MAF DTC's		FED OBD-2 B
				PRNDL = D4 Commanded Gear = 4th TPS > 10.0% & < 100% TCC Commanded on > 0.04375 sec.		
				TCC at Full Locked Time > 0.1 sec. Trans Fluid Temp > $+20$ C < $+130$ C. Engine Torque between		
				80 & 400-650 ft. lbs. Engine Speed between 1250 & 5000 RPM Speed Ratio between: 2.25 and 0.70 Vehicle Speed between 35 & 110 MPH		
				Engine Vacuum $> 0 \& < 105.47$ kPA (Caled out)		

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Transmission Component Slipping Fail Case 2	P1870	This DTC detects Slip in the Torque Converter Clutch and/or the Forth gear Clutch Pack with the TCC in an apply or locked mode. Fail Case 2 is designed to set the diagnostic if the vehicle is on the highway and normally does not lift off the throttle. (ie Cruise Control operation)	Three Cycles to set the DTC ahead of the 3 counts from Fail Case 1. A) Slip => +100 and =< 550 RPM. ACTION 1: Freeze Adapts & Max Pressure. (actions cleared if gear is not = to 4th) AND B) Slip => +100 and =< 550 RPM. ACTION 2: Turn off TCC for 2.0 seconds AND (TCC apply is normal ramp rate) C) Slip => +100 and =< 550 RPM.	Same as Fail Case 1	A) 10.0 seconds AND B) 12.5 seconds AND C) 15.0 seconds	DTC Type Federal C California B FED OBD-2 B
Four Wheel Drive Low - Switch Input Malfunction Fail Case 1: Switch Stuck Off	P1875	This DTC detects the continuous open in the Four Wheel Drive Low Switch Circuit	4WD Lo Switch is Clear and measured Transfer Case Ratio >2.65 and < 2.76 in two different gears. Measured Transfer case ratio = NI / NO / commanded gear ratio	Engine running > 400 RPM > 7.0 sec Sys Volts > 8.0 & < 18.0 for > 0.5 sec No TPS DTC's No Shift Solenoid Performance DTC's SSA & SSB Perf Counters are Clear. No PSA DTC No Shift Solenoid Electrical DTC's No TCC PWM Electrical DTC No ISS DTC's No VSS DTC's No MAP DTC's No MAP DTC's No MAF DTC's No TCC Stuck Off DTC PSA = D4 TPS > 5% and < 100% Trans Fluid Temp > +20.25C and < + 130.0 C Vehicle Speed > 0.5 MPH Engine Torque > 70 and < 400-650 ft. lbs. MAP > 0 kPA & < 106 kPA (Caled Out)	 > 1.1 seconds in two different commanded gears. 2nd Occurrence Continuous 	DTC Type Federal C California B FED OBD-2 B
Four Wheel Drive Low - Switch Input Malfunction Fail Case 2: Switch Stuck On	P1875	This DTC detects the continuous short to ground in the Four Wheel Drive Low Switch Circuit	4WD Lo Switch is Set and measured Transfer Case Ratio >0.95 and < 1.05 in any one gear.	Same as Stuck Off case	> 7.0 seconds in any one gear. (Usually 4th gear) 1st occurrence Continuous	DTC Type Federal C California B FED OBD-2 B

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