

P0601 the calculated checksum is different from the stored checksum

Circuit Description

A normal function of the transmission control module (TCM) is to perform an internal test that verifies the integrity of the ROM memory allocation. This diagnostic detects faults in the allocation of flash memory that contain the program and calibration by comparing a calculated checksum with a stored checksum. When the TCM detects that the calculated checksum is different from the stored checksum, DTC P0601 sets. DTC P0601 is a type A DTC.

Conditions for Running The DTC

The ignition is ON.

Conditions for Setting The DTC

The TCM EEPROM checksums do not match.

Action Taken When the DTC Sets

- The TCM requests the ECM to illuminate the malfunction indicator lamp (MIL) during the first trip when the Conditions for Setting the DTC are met.
- The TCM turns off power to all solenoids.
- The transmission will operate in fifth gear if the vehicle has successfully completed a 1–2 upshift in the current ignition cycle. If the vehicle has not completed a 1–2 upshift in the current ignition cycle, the transmission will operate in fourth gear.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- Powertrain braking is disabled.
- The TCC is disabled.
- At the time of the first failure, the TCM records the operating conditions when the Conditions for Setting the DTC are met. The TCM stores this information as a Failure Record.
- At the time of the second failure, the ECM records the operating conditions when the Conditions for Setting the DTC are met. The ECM stores this

information as a Freeze Frame.

- The TCM stores DTC P0601 in TCM history.

Conditions for Clearing the MIL/DTC

- The ECM turns OFF the MIL after the sixth consecutive drive trip in which the TCM does not send a MIL illumination request.
- A scan tool can clear the MIL/DTC.
- The TCM clears the DTC from TCM history if the vehicle completes 40 warm-up cycles without an emission related diagnostic fault occurring.
- The TCM cancels the default actions when the ignition is OFF long enough in order to power down the TCM.

Diagnostic Aids

DTC P0601 may set as a result of TCM reprogramming.

Test Description

The number below refers to the step number on the diagnostic table.

3. This step eliminates the TCM software as a possible cause of the DTC. If the DTC continues to set after reprogramming, the fault is in the TCM hardware.

DTC P0601

Step	Action	Value(s)	Yes	No
1	Did you perform the Diagnostic System Check – Vehicle?	—	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information

Step	Action	Value(s)	Yes	No
2	<p>1).Install a scan tool.</p> <p>2).Turn ON the ignition with the engine OFF.</p> <p>Important:</p> <ul style="list-style-type: none"> ● Before clearing the DTC, use the scan tool in order to record the ECM Freeze Frame and the TCM Failure Records. Using the Clear Info function erases the Freeze Frame and Failure Records from the ECM and the TCM. ● Using the Clear Info function erases stored DTCs in both the ECM and TCM. 	—	Go to Step 3	Go to Diagnostic Aids
3	<p>3).Record the DTC Failure Records.</p> <p>4). Clear the DTC.</p> <p>5).Turn OFF the ignition for at least 30 seconds.</p> <p>6).Turn ON the ignition.</p> <p>Did DTC P0601 reset?</p> <p>Perform the Transmission Control Module Reprogramming Procedure.</p> <p>Is the action complete?</p>	—	Go to Step 5	Go to Step 4
4	<p>Replace the TCM.</p> <p>Is the action complete?</p>	—	Go to Step 5	—
5	<p>Perform the following procedure in order to verify the repair:</p> <p>1).Select DTC.</p> <p>2).Select Clear Info.</p> <p>3).Turn OFF the ignition for at least 30 seconds.</p> <p>4).Turn ON the ignition.</p> <p>5).Select Specific DTC.</p> <p>6).Enter DTC P0601.</p> <p>Has the test run and passed?</p>	—	Go to Step 6	Go to Step 2

Step	Action	Value(s)	Yes	No
6	With the scan tool, observe the stored information, capture info and DTC info. Does the scan tool display any DTCs that you have not diagnosed?	—	Go to Diagnostic Trouble Code (DTC) List -Vehicle in Vehicle DTC Information	System OK

LAUNCH