P0115 engine coolant temperature data to TCM

Circuit Description

The engine control module (ECM) sends engine coolant temperature data to the transmission control module (TCM). The TCM uses this data to initiate warm-up shift patterns and to establish default transmission fluid temperature (TFT) values. The data is sent to the TCM through a communication network called the controller area network (CAN). Two circuits are used to communicate CAN data between the ECM and TCM. A fault in the CAN will not cause DTC P0115 to set by itself. If a CAN fault occurs, other DTCs will set before DTC P0115. When the TCM receives invalid engine coolant temperature data from the ECM, then DTC P0115 will set. DTC P0115 is a type C DTC.

Conditions for Running the DTC

● The engine run time is greater than 5 seconds.
● No other CAN errors are present.

Conditions for Setting the DTC

The TCM receives no valid engine coolant temperature data from the ECM for 2 seconds.

Action Taken When the DTC Sets

● The TCM does not request the ECM to illuminate the malfunction indicator lamp (MIL).
● The TCM uses 25°C (77°F) as a default engine coolant temperature value.
● The TCM records the operating conditions when the Conditions for Setting the DTC are met. The TCM stores this information as a Failure Record.
● The TCM stores DTC P0115 in TCM history.

Conditions for Clearing the DTC

- A scan tool can clear the DTC.
- The TCM clears the DTC from TCM history if the vehicle completes 40 warm-up cycles without a non emission related diagnostic fault occurring.
- The TCM cancels the DTC default actions when the fault no longer exists and the DTC passes.

DTC P0115

Step	Action	Value	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
2	1).Install a scan tool. 2).Turn ON the ignition with the engine OFF. Important: • Before clearing the DTC, use the scan tool in order to record the ECM and the TCM Failure Records. Using the Clear Info function erases the Failure Records from the ECM and TCM. • Using the Clear Info function erases stored DTCs in both the ECM and TCM. 3).Record the DTC Failure Records. Did you record any ECM Failure Records?	—	Go to Diagnostic Trouble Code (DTC) List -Vehicle DTC Information	Go to Step 3
3	1).Clear the DTC. 2).Turn the ignition OFF for at least 30 seconds. 3).Start, and allow the engine to idle. Did DTC P0115 reset?	—	Go to Step 4	Go to Intermittent Conditions in Engine Controls – 4.6L

Step	Action	Value	Yes	No
4	Did any other DTCs set?	—	Go to Diagnostic Trouble Code (DTC) List -Vehicle in Vehicle DTC Information	Go to Step 5
5	Replace the TCM. Is the action complete?	—	Go to Step 6	—
6	Perform the following operation to verify the repair: 1).Select DTC on the scan tool. 2).Select Clear Info. 3).Start, and allow the engine to idle. 4).Select Specific DTC. 5).Enter DTC P0115. Has the test run and passed?	—	Go to Step 7	Go to Step 2
7	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