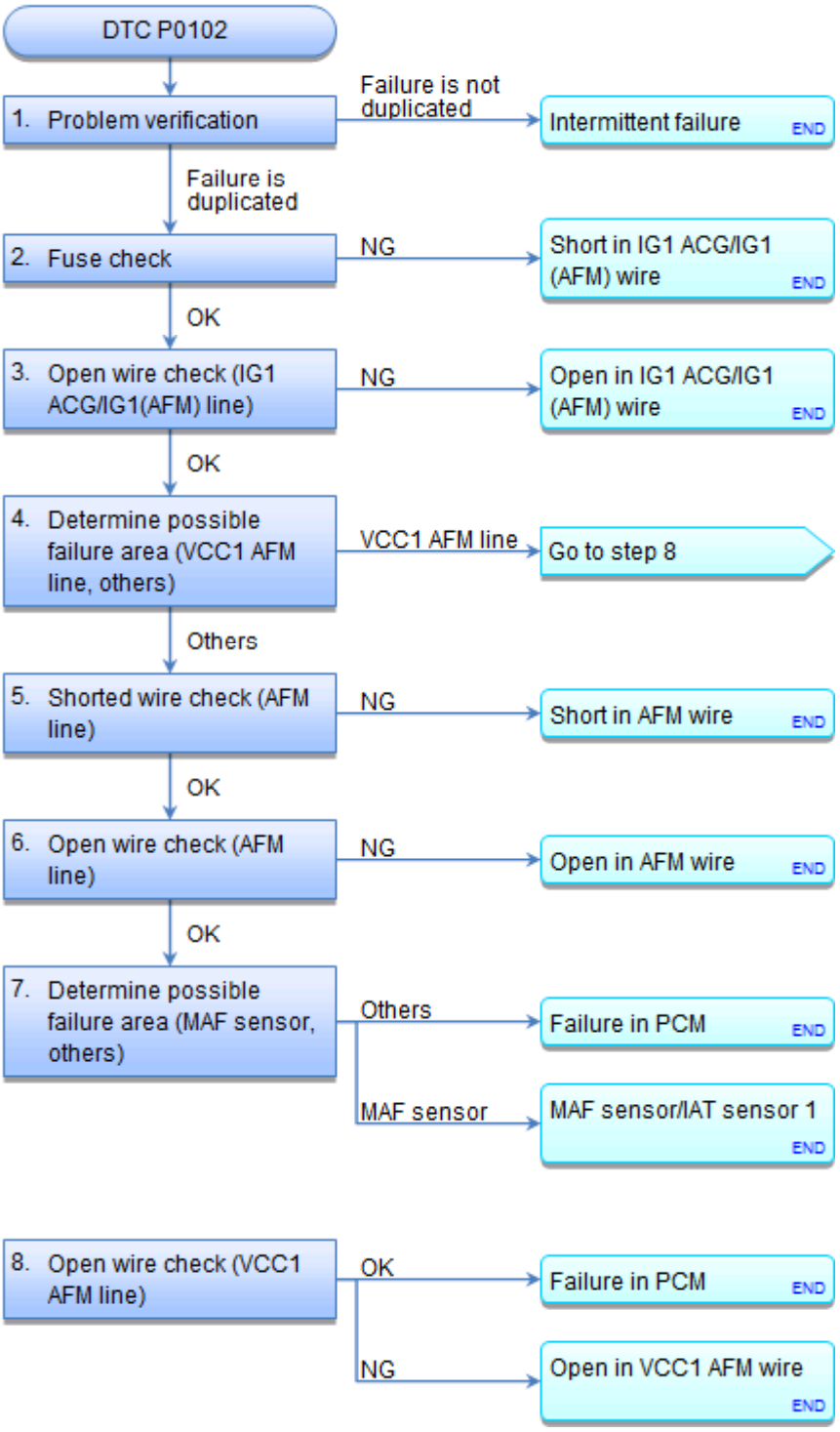
DTC Troubleshooting: P0102



DTC P0102: MAF Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, review the general troubleshooting information.

DTC Description	Confirmed DTC	Pending DTC
P0102 MAF Sensor Circuit Low Voltage		

DTC (PGM-FI)

1. Problem verification:

-1. Turn the vehicle to the ON mode, and wait 2 seconds.

-2. Check the parameter(s) below with the HDS.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
MAF SENSOR	Less than 0.11	V		

Do the current condition(s) match the threshold?

YES The failure is duplicated. Go to step 2.

NO Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at MAF sensor/IAT sensor 1 and the PCM. If the on-board snapshot of this DTC is recorded, try to reproduce the failure under the same conditions with the on-board snapshot.■

2. Fuse check:

-1. Turn the vehicle to the OFF (LOCK) mode.

-2. Check the following fuse.

Fuse	No. B21 (10 A)
Location	Under-dash fuse/relay box

Is the fuse OK?

YES Go to step 3.

NO Repair a short in the IG1 ACG/IG1(AFM) wire between the No. B21 (10 A) fuse and MAF sensor/IAT sensor 1. Also replace the No. B21 (10 A) fuse.■

3. Open wire check (IG1 ACG/IG1(AFM) line):

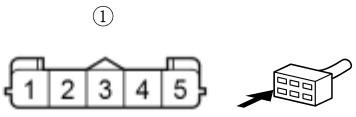
-1. Turn the vehicle to the OFF (LOCK) mode.

-2. Disconnect the following connector.
MAF sensor/IAT sensor 1 5P connector

-3. Turn the vehicle to the ON mode.

-4. Measure the voltage between test points 1 and 2.

Test condition	Vehicle ON mode MAF sensor/IAT sensor 1 5P connector: disconnected
Test point 1	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 3: ①
Test point 2	Body ground



Is there battery voltage?

YES The IG1 ACG/IG1(AFM) wire is OK. Go to step 4.

NO Repair an open in the IG1 ACG/IG1(AFM) wire between MAF sensor/IAT sensor 1 and the No. B21 (10 A) fuse in the under-dash fuse/relay box.■

4. Determine possible failure area (VCC1 AFM line, others):

-1. Measure the voltage between test points 1 and 2.

Test condition	Vehicle ON mode
	MAF sensor/IAT sensor 1 5P connector: disconnected
Test point 1	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 2: ①
Test point 2	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 4: ①

Is there about 5.0 V?

YES Go to step 5.

NO Go to step 8.

5. Shorted wire check (AFM line):

-1. Turn the vehicle to the OFF (LOCK) mode.

-2. Jump the SCS line with the HDS, and wait more than 1 minute.

SCS Short

-3. Disconnect the following connector.
PCM connector No. 1 (96P)

-4. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
	MAF sensor/IAT sensor 1 5P connector: disconnected
	PCM connector No. 1 (96P): disconnected
Test point 1	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 1: ①
Test point 2	Body ground

Is there continuity?

YES Repair a short in the AFM wire between PCM connector No. 1 terminal No. 53 and MAF sensor/IAT sensor 1.■

NO The AFM wire is not shorted. Go to step 6.

6. Open wire check (AFM line):

-1. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode

MAF sensor/IAT sensor 1 5P connector: disconnected
PCM connector No. 1 (96P): disconnected

Test point 1	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 1: ①
Test point 2	PCM connector No. 1 (96P) No. 53

Is there continuity?

YES The AFM wire is OK. Go to step 7.

NO Repair an open in the AFM wire between PCM connector No. 1 terminal No. 53 and MAF sensor/IAT sensor 1.■

7. Determine possible failure area (MAF sensor, others):

-1. Connect terminals A and B with a jumper wire.

Terminal A	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 1: ①
Terminal B	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 4: ①

-2. Turn the vehicle to the ON mode.

-3. Check the parameter(s) below with the HDS.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
MAF Sensor	Less than 0.11	V		

Do the current condition(s) match the threshold?

YES Check for any authorized service information related to the DTCs or symptoms you are troubleshooting, or substitute a known-good PCM, then recheck. If DTC P0102 goes away and the PCM was substituted, replace the original PCM.■

NO Replace MAF sensor/IAT sensor 1.■

8. Open wire check (VCC1 AFM line):

-1. Turn the vehicle to the OFF (LOCK) mode, and wait 2 minutes.

-2. Jump the SCS line with the HDS, and wait more than 1 minute.

SCS Short

-3. Disconnect the following connector.
PCM connector No. 1 (96P)

-4. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode MAF sensor/IAT sensor 1 5P connector: disconnected PCM connector No. 1 (96P): disconnected
Test point 1	MAF sensor/IAT sensor 1 5P connector (female terminals) No. 4: ①
Test point 2	PCM connector No. 1 (96P) No. 63

Is there continuity?

YES The VCC1 AFM wire is OK. Check for any authorized service information related to the DTCs or symptoms you are troubleshooting, or substitute a known-good PCM, then recheck. If DTC P0102 goes away and the PCM was substituted, replace the original PCM.■

NO Repair an open in the VCC1 AFM wire between PCM connector No. 1 terminal No. 63 and MAF sensor/IAT sensor 1.■