DTC P0113:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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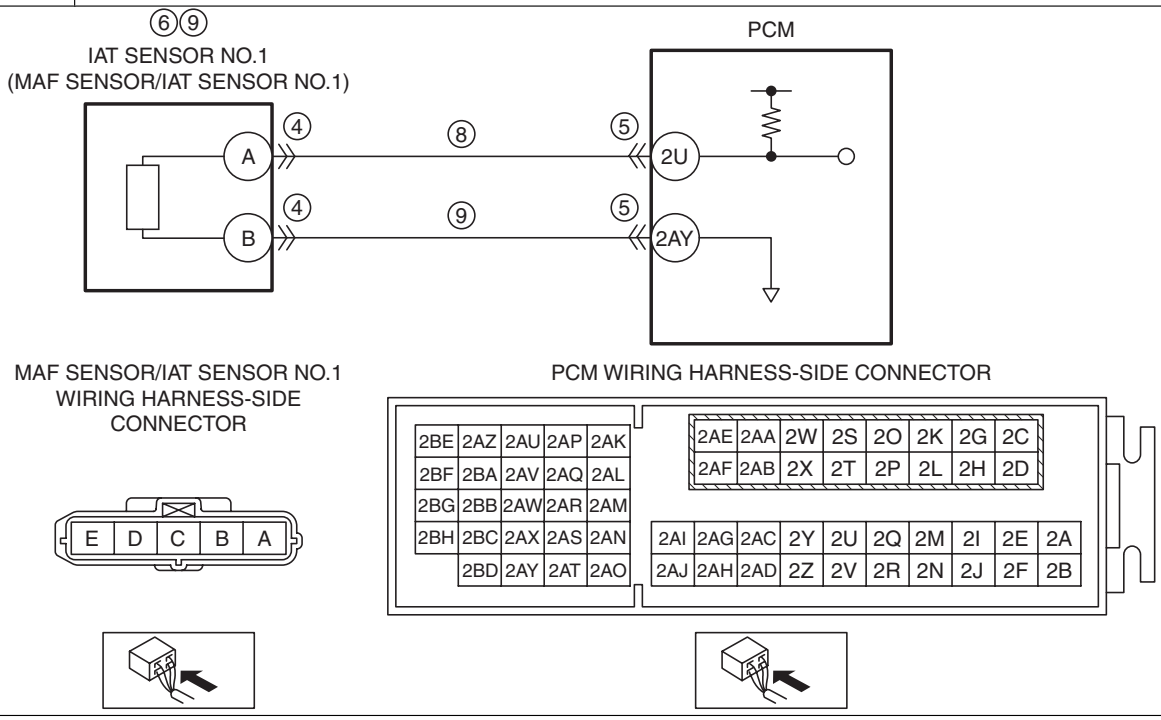
DTC P0113:00	IAT sensor No.1 circuit high input
DETECTION CONDITION	• The PCM monitors the IAT sensor No.1 signal. If the PCM detects that the IAT sensor No.1 voltage at the PCM terminal 2U is **above 4.62 V** for **5 s**, the PCM determines that the IAT sensor No.1 circuit has a malfunction. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Fixes intake air temperature (for engine control) at **20 °C {68 °F}** • Inhibits the fuel cut control during shift change.
POSSIBLE CAUSE	• MAF sensor/IAT sensor No.1 connector or terminals malfunction • PCM connector or terminals malfunction • IAT sensor No.1 malfunction • Short to power supply in wiring harness between MAF sensor/IAT sensor No.1 terminal A and PCM terminal 2U • Open circuit in wiring harness between the following terminals: — MAF sensor/IAT sensor No.1 terminal A—PCM terminal 2U — MAF sensor/IAT sensor No.1 terminal B—PCM terminal 2AY • PCM malfunction



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.

STEP	INSPECTION		ACTION
3	**DETERMINE IF IAT SENSOR NO.1 OR WIRING HARNESS MALFUNCTION** • Access the IAT PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Verify the IAT PID value. • Is the IAT PID value **5 V** or **B+**?	Yes	Go to Step 7.
		No	Go to the next step.
4	**INSPECT MAF SENSOR/IAT SENSOR NO.1 CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the MAF sensor/IAT sensor No.1 connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.
5	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.
6	**INSPECT IAT SENSOR NO.1** • Inspect the IAT sensor No.1. (See INTAKE AIR TEMPERATURE (IAT) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the MAF sensor/IAT sensor No.1, then go to Step 10. (See MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.1 REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to Step 10.
7	**DETERMINE IF IAT SENSOR NO.1 SIGNAL CIRCUIT OR IAT SENSOR NO.1 GROUND CIRCUIT MALFUNCTION** • Switch the ignition off. • Disconnect the MAF sensor/IAT sensor No.1 connector. • Access the IAT PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Verify the IAT PID value. • Is the IAT PID value **5 V** or **B+**?	Yes	Go to the next step.
		No	Go to Step 9.
8	**INSPECT IAT SENSOR NO.1 SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Verify that the MAF sensor/IAT sensor No.1 connector is disconnected. • Switch the ignition off. • Disconnect the PCM connector. • Inspect for continuity between MAF sensor/IAT sensor No.1 terminal A (wiring harness-side) and PCM terminal 2U (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 10.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 10.
9	**INSPECT IAT SENSOR NO.1 GROUND CIRCUIT FOR OPEN CIRCUIT** • Verify that the MAF sensor/IAT sensor No.1 connector is disconnected. • Switch the ignition off. • Disconnect the PCM connector. • Inspect for continuity between MAF sensor/IAT sensor No.1 terminal B (wiring harness-side) and PCM terminal 2AY (wiring harness-side). • Is there continuity?	Yes	Replace the MAF sensor/IAT sensor No.1, then go to the next step. (See MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.1 REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.

STEP	INSPECTION		ACTION
10	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Start the engine and warm it up completely. • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Go to the next step.
		No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	DTC troubleshooting completed.