

# DTC P0113:00 [SKYACTIV-D 2.2]

id0102s4701500

DTC P0113:00	IAT sensor No.1 circuit high input	
DETECTION CONDITION	<ul style="list-style-type: none"><li>The PCM monitors the IAT sensor No.1 signal. If the PCM detects that the IAT sensor No.1 voltage at the PCM terminal 2Y is <b>above 4.90 V</b> for <b>1 s</b>, the PCM determines that the IAT sensor No.1 circuit has a malfunction.</li></ul> <b>MONITORING CONDITIONS</b> <ul style="list-style-type: none"><li>Battery voltage: <b>8—20 V</b></li></ul> <b>Diagnostic support note</b> <ul style="list-style-type: none"><li>This is a continuous monitor (CCM).</li><li>The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle.</li><li>FREEZE FRAME DATA (Mode 2)/Snapshot data is available.</li><li>DTC is stored in the PCM memory.</li></ul>	
FAIL-SAFE FUNCTION	<ul style="list-style-type: none"><li>PCM restricts engine torque.</li><li>Inhibits the two-stage turbo control.</li><li>Inhibits the EGR control.</li><li>Inhibits the diesel particulate filter regeneration control.</li><li>The fast idle up correction for the idle speed control is inhibited.</li><li>Inhibits engine-stop by operating the i-stop function.</li><li>PCM restricts engine-transaxle integration control.</li></ul>	
POSSIBLE CAUSE	<ul style="list-style-type: none"><li>Intake air temperature is too low</li><li>MAF sensor/IAT sensor No.1 connector or terminals malfunction</li><li>PCM connector or terminals malfunction</li><li>IAT sensor No.1 malfunction</li><li>Short to power supply in wiring harness between MAF sensor/IAT sensor No.1 terminal A and PCM terminal 2Y</li><li>Open circuit in wiring harness between the following terminals:<ul style="list-style-type: none"><li>MAF sensor/IAT sensor No.1 terminal A—PCM terminal 2Y</li><li>MAF sensor/IAT sensor No.1 terminal B—PCM terminal 2V</li></ul></li><li>PCM malfunction</li></ul>	

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IAT SENSOR NO.1  
(MAF SENSOR/IAT SENSOR NO.1)

PCM

MAF SENSOR/IAT SENSOR NO.1  
WIRING HARNESS-SIDE  
CONNECTOR

PCM WIRING HARNESS-SIDE CONNECTOR

2BE	2AZ	2AU	2AP	2AK
2BF	2BA	2AV	2AQ	2AL
2BG	2BB	2AW	2AR	2AM
2BH	2BC	2AX	2AS	2AN
	2BD	2AY	2AT	2AO

2AE	2AA	2W	2S	2O	2K	2G	2C
2AF	2AB	2X	2T	2P	2L	2H	2D

2AI	2AG	2AC	2Y	2U	2Q	2M	2I	2E	2A
2AJ	2AH	2AD	2Z	2V	2R	2N	2J	2F	2B

## Diagnostic Procedure

STEP	INSPECTION	ACTION	
1	<b>VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED</b> <ul style="list-style-type: none"> <li>Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?</li> </ul>	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.

STEP	INSPECTION		ACTION
2	<b>VERIFY RELATED SERVICE INFORMATION AVAILABILITY</b> <ul style="list-style-type: none"> <li>• Verify related Service Information availability.</li> <li>• Is any related Service Information available?</li> </ul>	Yes	Perform repair or diagnosis according to the available Service Information.
		No	Go to the next step.
3	<b>INSPECT MAF SENSOR/IAT SENSOR NO.1 CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>• Switch the ignition off.</li> <li>• Disconnect the MAF sensor/IAT sensor No.1 connector.</li> <li>• Inspect for poor connection (such as damaged/pulled-out pins, corrosion).</li> <li>• Is there any malfunction?</li> </ul>	Yes	Repair or replace the connector and/or terminals, then go to Step 8.
		No	Go to the next step.
4	<b>INSPECT PCM CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>• Disconnect the PCM connector.</li> <li>• Inspect for poor connection (such as damaged/pulled-out pins, corrosion).</li> <li>• Is there any malfunction?</li> </ul>	Yes	Repair or replace the connector and/or terminals, then go to Step 8.
		No	Go to the next step.
5	<b>INSPECT IAT SENSOR NO.1</b> <ul style="list-style-type: none"> <li>• Inspect the IAT sensor No.1. (See INTAKE AIR TEMPERATURE (IAT) SENSOR INSPECTION [SKYACTIV-D 2.2].)</li> <li>• Is there any malfunction?</li> </ul>	Yes	Replace the MAF sensor/IAT sensor No.1, then go to Step 8. (See MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.1 REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
6	<b>INSPECT IAT SENSOR NO.1 CIRCUIT FOR SHORT TO POWER SUPPLY</b> <ul style="list-style-type: none"> <li>• Verify that the MAF sensor/IAT sensor No.1 and PCM connectors are disconnected.</li> <li>• Switch the ignition ON (engine off).</li> <li>• Measure the voltage at the MAF sensor/IAT sensor No.1 terminal A (wiring harness-side).</li> <li>• Is the voltage <b>0 V</b>?</li> </ul>	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
7	<b>INSPECT IAT SENSOR NO.1 CIRCUIT FOR OPEN CIRCUIT</b> <ul style="list-style-type: none"> <li>• Verify that the MAF sensor/IAT sensor No.1 and PCM connectors are disconnected.</li> <li>• Switch the ignition off.</li> <li>• Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> <li>— MAF sensor/IAT sensor No.1 terminal A—PCM terminal 2Y</li> <li>— MAF sensor/IAT sensor No.1 terminal B—PCM terminal 2V</li> </ul> </li> <li>• Is there continuity?</li> </ul>	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
8	<b>VERIFY DTC TROUBLESHOOTING COMPLETED</b> <ul style="list-style-type: none"> <li>• Always reconnect all disconnected connectors.</li> <li>• Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].)</li> <li>• Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)</li> <li>• Is the same DTC present?</li> </ul>	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
9	<b>VERIFY AFTER REPAIR PROCEDURE</b> <ul style="list-style-type: none"> <li>• Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].)</li> <li>• Are any DTCs present?</li> </ul>	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.