DTC P2243:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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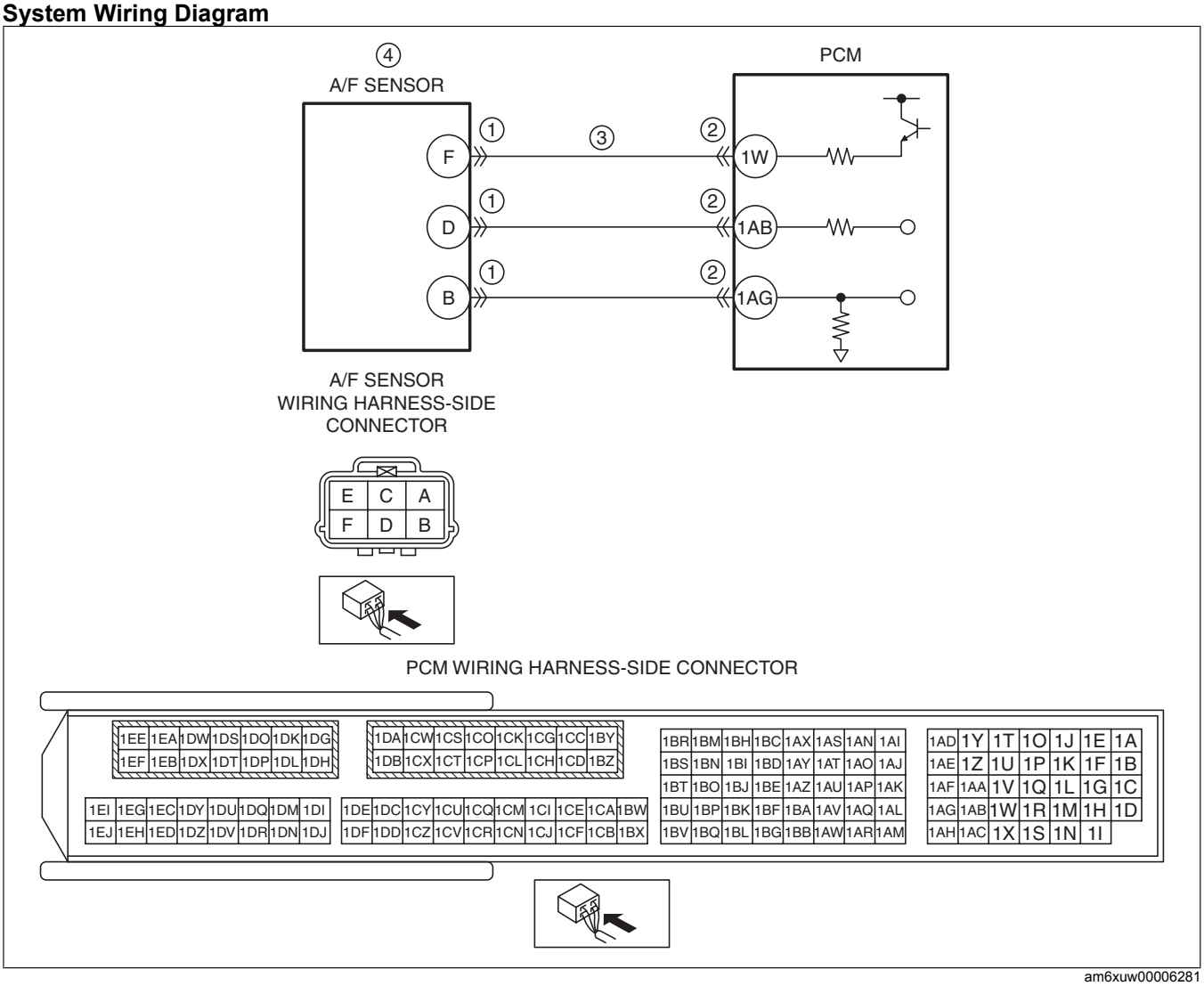
Note
- To determine the malfunctioning part, proceed with the diagnostics from "Function Inspection Using M-MDS".

Details On DTCs

DESCRIPTION	**A/F sensor reference voltage circuit open**	
DETECTION CONDITION	Determination conditions	• A condition in which the PCM terminal 1W voltage is the specified value or more continues for **30 s**.
	Preconditions	• Switch the ignition ON (engine off) • Battery voltage: **11—18 V** *1 • The following DTCs are not detected: — A/F sensor heater: P0031:00, P0032:00 *1: Value can be verified by displaying PIDs using M-MDS
	Malfunction determination period	• **30 s** period
	Drive cycle	• 2
	Self test type	• CMDTC self test, KOER self test
	Sensor used	• A/F sensor
FAIL-SAFE FUNCTION	• Not applicable	
VEHICLE STATUS WHEN DTCs ARE OUTPUT	• Illuminates check engine light.	
POSSIBLE CAUSE	• A/F sensor connector or terminals malfunction • PCM connector or terminals malfunction • Open circuit in wiring harness between A/F sensor terminal F and PCM terminal 1W • A/F sensor malfunction • PCM malfunction	

System Wiring Diagram



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Function Explanation (DTC Detection Outline)

- With an open circuit in the supply voltage line and a condition in which the supply voltage to PCM terminal 1W continues to be supplied, the PCM determines an open circuit in the wiring harness between the A/F sensor and the PCM and stores a DTC.

Repeatability Verification Procedure

1. Warm up the engine to allow the engine coolant temperature to reach **80 °C {176 °F} or more**.
2. Start the engine and leave it idling for **90 s**.

PID Item/Simulation Item Used In Diagnosis

- Not applicable

Function Inspection Using M-MDS

STEP	INSPECTION	RESULTS	ACTION
1	**PURPOSE: 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	RESULTS	ACTION
2	**PURPOSE: RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	Yes	Go to the troubleshooting procedure to perform the procedure from Step 1.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order. **Note** • Recording can be facilitated using the screen capture function of the PC. Go to the troubleshooting procedure to perform the procedure from Step 1.

Troubleshooting Diagnostic Procedure
Intention of troubleshooting procedure

- Step 1—3
  — Perform an inspection of the A/F sensor and PCM-related connectors and wiring harnesses.
- Step 4
  — Perform a unit inspection of the A/F sensor.
- Step 5—6
  — Verify that the primary malfunction is resolved and there are no other malfunctions.

STEP	INSPECTION	RESULTS	ACTION
1	**PURPOSE: INSPECT A/F SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the A/F sensor 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 5.
		No	Go to the next step.
2	**PURPOSE: 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 5.
		No	Go to the next step.
3	**PURPOSE: INSPECT A/F SENSOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the A/F sensor and PCM connectors are disconnected. • Inspect for continuity between A/F sensor terminal F (wiring harness-side) and PCM terminal 1W (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between A/F sensor terminal F and PCM terminal 1W. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to Step 5.
4	**PURPOSE: DETERMINE INTEGRITY OF A/F SENSOR** • Reconnect all disconnected connectors. • Inspect the A/F sensor. (See AIR FUEL RATIO (A/F) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to the next step. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
5	**PURPOSE: VERIFICATION OF VEHICLE REPAIR COMPLETION** • 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].) • Perform the KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the PENDING CODE for this 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.
6	**PURPOSE: VERIFY IF THERE IS ANY OTHER MALFUNCTION** • Is any other DTC or pending code stored?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	DTC troubleshooting completed.