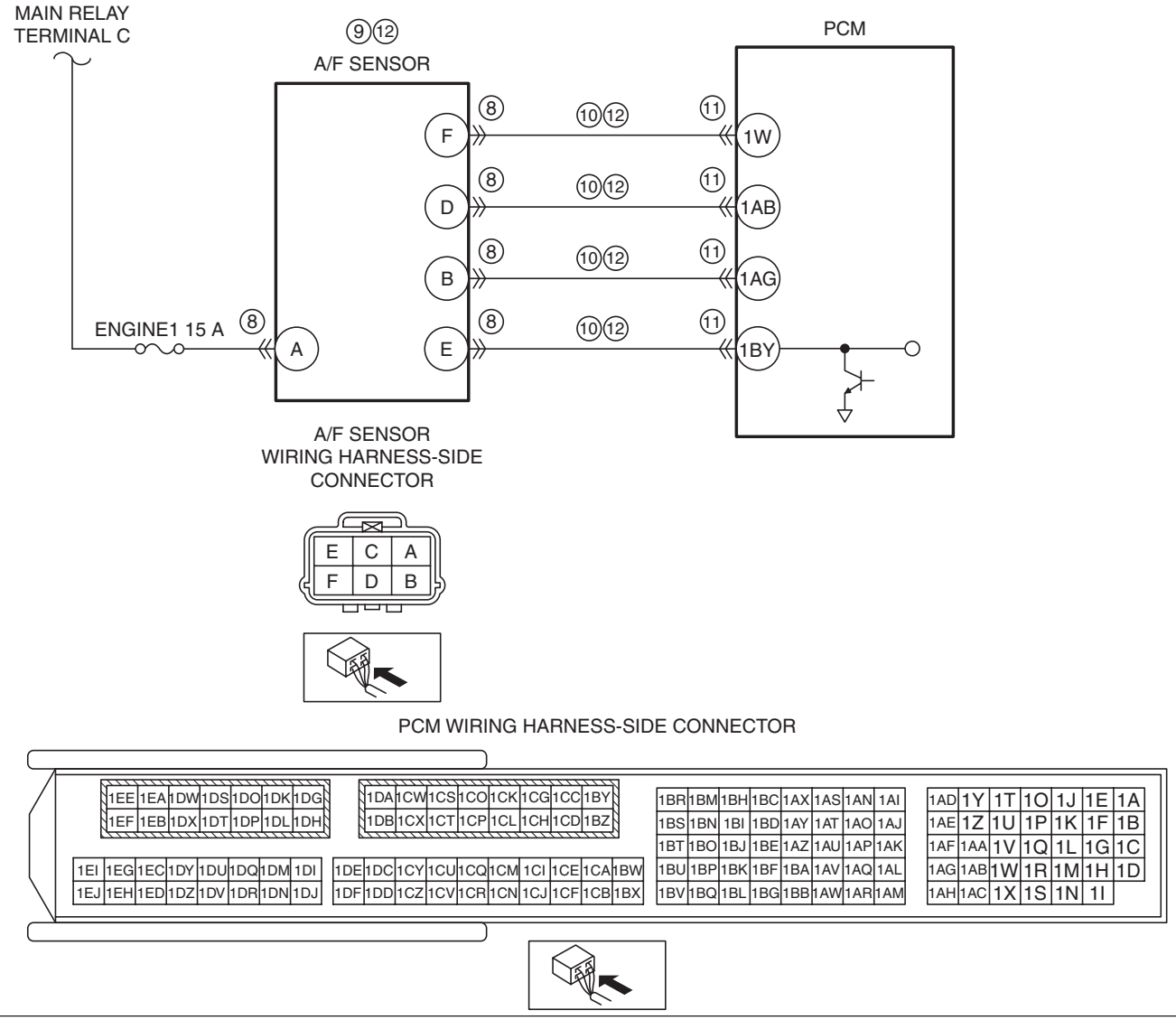
DTC P0134:00 [SKYACTIV-G 2.0]

id0102h1702500

DTC P0134:00	A/F sensor circuit no activity detected
DETECTION CONDITION	• The PCM monitors the element impedance of the A/F sensor when the following conditions are met. Under the following monitoring conditions, if the element impedance is more than specified value, the PCM determines that the A/F sensor is not activated. **MONITORING CONDITIONS** — Drive Mode 03 (Variable Valve Timing, A/F Sensor Heater, HO2S Heater, A/F Sensor, HO2S and TWC Repair Verification Drive Mode) — The following conditions are met: • A/F sensor heater is turned on for **above 35 s**. • Battery voltage: **11—18 V** **Diagnostic support note** • This is an intermittent monitor (A/F sensor, HO2S). • The check engine light illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Fixes the duty value of the A/F sensor heater. • Stops the fuel feedback control.
POSSIBLE CAUSE	• Erratic signal from A/F sensor — A/F sensor loose — Exhaust system leakage — A/F sensor connector or terminals malfunction • A/F sensor heater malfunction • Short to ground in wiring harness between the following terminals: — A/F sensor terminal F—PCM terminal 1W — A/F sensor terminal D—PCM terminal 1AB — A/F sensor terminal B—PCM terminal 1AG — A/F sensor terminal E—PCM terminal 1BY • PCM connector or terminals malfunction • Open circuit in wiring harness between the following terminals: — A/F sensor terminal F—PCM terminal 1W — A/F sensor terminal D—PCM terminal 1AB — A/F sensor terminal B—PCM terminal 1AG — A/F sensor terminal E—PCM terminal 1BY • A/F sensor malfunction — A/F sensor deterioration • Engine malfunction — Insufficient engine compression — Engine coolant leakage to combustion chamber • PCM malfunction

DTC P0134:00	A/F sensor circuit no activity detected



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Perform the Freeze Frame PID Data Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0].) • Is the DTC P0134:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to the troubleshooting procedure for DTC on FREEZE FRAME DATA (Mode 2). (See DTC TABLE [SKYACTIV-G 2.0].)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/ snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**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
4	**VERIFY RELATED PENDING CODE AND/OR DTC** **Note** • If the fuel monitor, DTC P0132:00 is retrieved, ignore it until DTC P0134:00 is fixed. • Switch the ignition to off, then to ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0].) • Is the PENDING CODE/DTC P2237:00, P2243:00 or P2251:00 also present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC P2237:00 [SKYACTIV-G 2.0].) (See DTC P2243:00 [SKYACTIV-G 2.0].) (See DTC P2251:00 [SKYACTIV-G 2.0].)
		No	Go to the next step.
5	**INSPECT CURRENT SIGNAL STATUS OF A/F SENSOR** • Inspect the A/F sensor. (See AIR FUEL RATIO (A/F) SENSOR INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Go to the next step.
		No	Go to Step 13.
6	**INSPECT INSTALLATION OF A/F SENSOR** • Inspect installation of A/F sensor. • Is the A/F sensor installed securely?	Yes	Go to the next step.
		No	Retighten the A/F sensor, then go to Step 15. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/ INSTALLATION [SKYACTIV-G 2.0].)
7	**INSPECT EXHAUST SYSTEM FOR LEAKAGE** • Visually inspect for exhaust leakage between exhaust manifold and A/F sensor. • Is there any leakage?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 15.
		No	Go to the next step.
8	**INSPECT A/F SENSOR CONNECTOR CONDITION** • Switch the ignition to 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 15.
		No	Go to the next step.
9	**INSPECT A/F SENSOR HEATER** • Inspect the A/F sensor heater. (See AIR FUEL RATIO (A/F) SENSOR INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to Step 15. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/ INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
10	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • Verify that the A/F sensor connector is disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — A/F sensor terminal F — A/F sensor terminal D — A/F sensor terminal B — A/F sensor terminal E • Is there continuity?	Yes	If the short to ground circuit could be detected in the wiring harness: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected in the wiring harness: • Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) Go to Step 15.
		No	Go to the next step.
11	**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 15.
		No	Go to the next step.

STEP	INSPECTION		ACTION
12	**INSPECT A/F SENSOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the A/F sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — A/F sensor terminal F—PCM terminal 1W — A/F sensor terminal D—PCM terminal 1AB — A/F sensor terminal B—PCM terminal 1AG — A/F sensor terminal E—PCM terminal 1BY • Is there continuity?	Yes	Replace the A/F sensor, then go to Step 15. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/ INSTALLATION [SKYACTIV-G 2.0].)
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 15.
13	**INSPECT ENGINE COMPRESSION** • Inspect the engine compression. (See COMPRESSION INSPECTION [SKYACTIV-G 2.0].) • Are compression pressures within specification? **Specification:** • Compression [European (L.H.D. U.K.) specs.] — Standard: **978 kPa {9.97 kgf/cm^2, 142 psi} (300 rpm)** — Minimum: **783 kPa {7.98 kgf/cm^2, 114 psi} (300 rpm)** — Maximum difference between cylinders: **166 kPa {1.69 kgf/cm^2, 24.1 psi}** • Compression [Except European (L.H.D. U.K.) specs.] — Standard: **885 kPa {9.02 kgf/cm^2, 128 psi} (300 rpm)** — Minimum: **708 kPa {7.22 kgf/cm^2, 103 psi} (300 rpm)** — Maximum difference between cylinders: **150 kPa {1.53 kgf/cm^2, 21.8 psi}** **Note** • Because the SKYACTIV-G 2.0 retards the intake valve closing timing, compression pressure is low.	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 15.
14	**INSPECT SEALING OF ENGINE COOLANT PASSAGE** • Perform the “ENGINE COOLANT LEAKAGE INSPECTION”. (See ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-G 2.0].) • Does the radiator cap tester needle drop even though there is no engine coolant leakage from the radiator or the hoses?	Yes	Engine coolant leakage from the engine (between the combustion chamber and the engine coolant passage) may have occurred. • Verify the conditions of the gasket and the cylinder head. — If there is any malfunction: • Repair or replace the malfunctioning part according to the inspection results, then go to the next step.
		No	Go to the next step.
15	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Perform the Drive Mode 03 (Variable Valve Timing, A/F Sensor Heater, HO2S Heater, A/F Sensor, HO2S and TWC Repair Verification Drive Mode). (See OBD DRIVE MODE [SKYACTIV-G 2.0].) • 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].) Go to the next step.
		No	Go to the next step.

STEP	INSPECTION		ACTION
16	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0].)
		No	DTC troubleshooting completed.