DTC P053B:00 [SKYACTIV-D 2.2]

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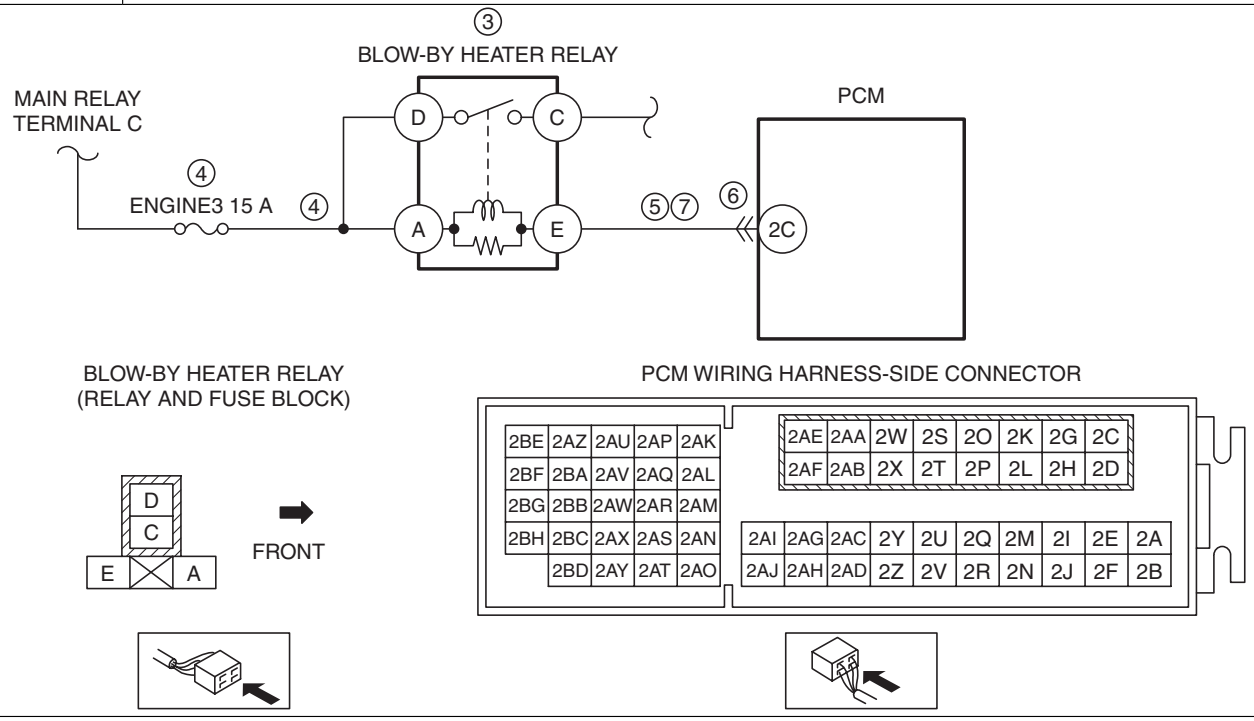
DTC P053B:00	Blow-by heater relay control circuit low input
DETECTION CONDITION	• The PCM monitors input voltage from the blow-by heater relay. If the input voltage is **below 0.19 V** for **1 s**, the PCM determines that the blow-by heater relay circuit has a malfunction. **MONITORING CONDITIONS** — Battery voltage: **8—20 V** **Diagnostic support note** • This is a continuous monitor (other). • The check engine light does not illuminate. • FREEZE FRAME DATA (Mode 2)/Snapshot data is not available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	Not applicable
POSSIBLE CAUSE	• Blow-by heater relay malfunction • Short to ground or open circuit in blow-by heater relay power supply circuit — Short to ground in wiring harness between main relay terminal C and blow-by heater relay terminal A — ENGINE3 15 A fuse malfunction — Open circuit in wiring harness between main relay terminal C and blow-by heater relay terminal A • Short to ground in wiring harness between blow-by heater relay terminal E and PCM terminal 2C • PCM connector or terminals malfunction • Open circuit in wiring harness between blow-by heater relay terminal E and PCM terminal 2C • 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	**INSPECT BLOW-BY HEATER RELAY** • Switch the ignition off. • Remove the blow-by heater relay. • Inspect the blow-by heater relay. (See RELAY INSPECTION.) • Is there any malfunction?	Yes	Replace the blow-by heater relay, then go to Step 8.
		No	Go to the next step.
4	**INSPECT BLOW-BY HEATER RELAY POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Blow-by heater relay is removed. • Switch the ignition ON (engine off). • Measure the voltage at the blow-by heater relay terminal A (wiring harness-side). • Is the voltage **B+**?	Yes	Go to the next step.
		No	Inspect the ENGINE3 15 A fuse. • If the fuse is blown: — Repair or replace the wiring harness for a possible short to ground. — Replace the fuse. • If the fuse is deteriorated: — Replace the fuse. • If the fuse is normal: — Repair or replace the wiring harness for a possible open circuit. Go to Step 8.
5	**INSPECT BLOW-BY HEATER RELAY SIGNAL CIRCUIT FOR SHORT TO GROUND** • Blow-by heater relay is removed. • Switch the ignition off. • Inspect for continuity between blow-by heater relay terminal E (wiring harness-side) and body ground. • 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-D 2.2].) Go to Step 8.
		No	Go to the next step.
6	**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 8.
		No	Go to the next step.
7	**INSPECT BLOW-BY HEATER RELAY SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Blow-by heater relay is removed. • Verify that the PCM connector is disconnected. • Inspect for continuity between blow-by heater relay terminal E (wiring harness-side) and PCM terminal 2C (wiring harness-side). • Is there continuity?	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	**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-D 2.2].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].) • Is the same DTC present?	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	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.