DTC P2147:00 [SKYACTIV-D 2.2]

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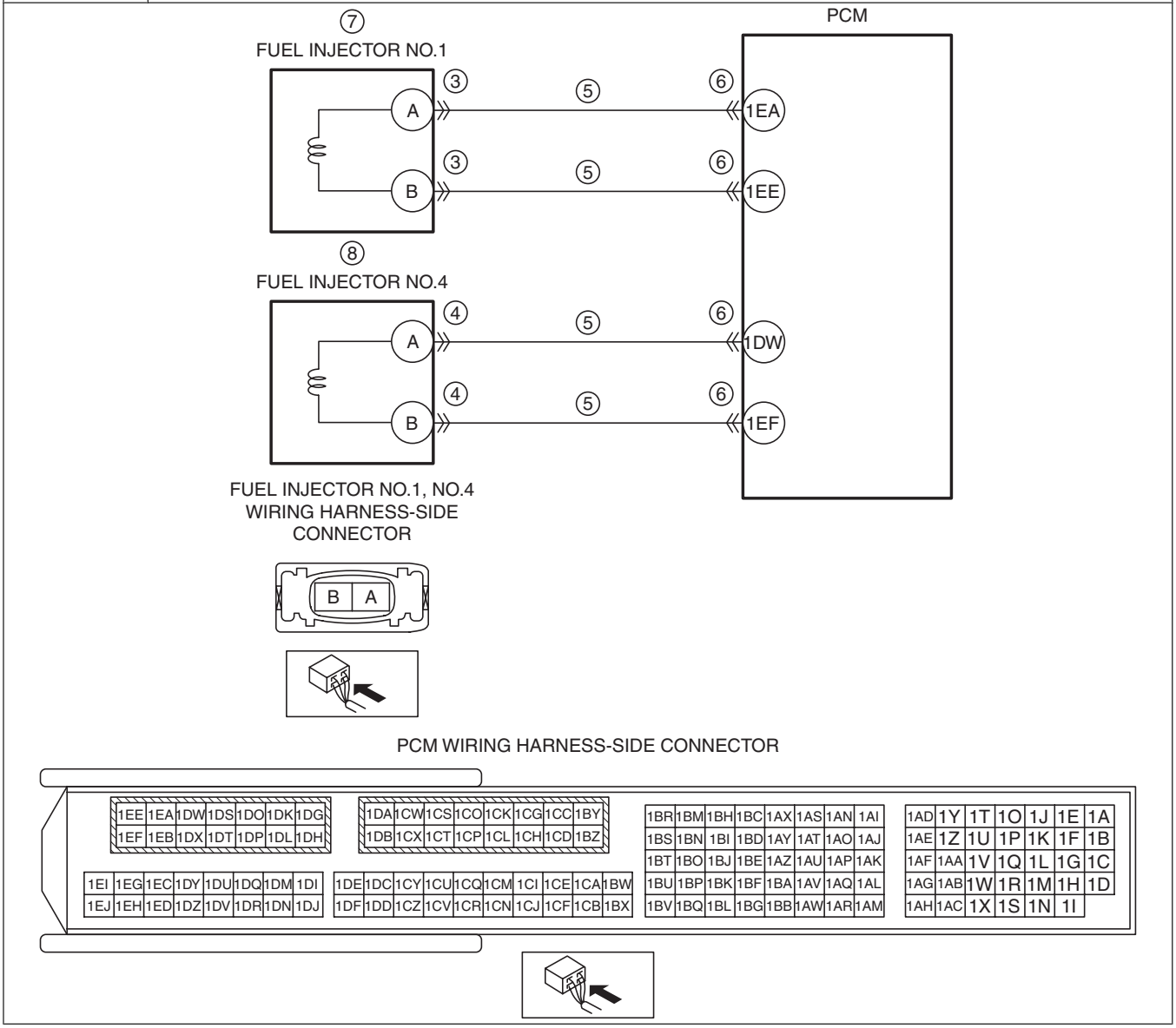
DTC P2147:00	Fuel injector No.1 and No.4 circuit low input
DETECTION CONDITION	• When the following condition is met, the PCM detects the control current at fuel injectors No.1 and No.4 as **exceeding 35 A 4 times** or control voltage at fuel injectors No.1 and No.4 as **40 V or less 4 times**: **MONITORING CONDITIONS** — Battery voltage: **more than 8 V** **Diagnostic support note** • This is an intermittent monitor (fuel system). • 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	• PCM restricts engine torque. • Inhibits the EGR control. • Inhibits the diesel particulate filter regeneration control. • Inhibits engine-stop by operating the i-stop function. • PCM restricts engine-transaxle integration control.
POSSIBLE CAUSE	• Fuel injector No.1 connector or terminals malfunction • Fuel injector No.4 connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Fuel injector No.1 terminal A—PCM terminal 1EA — Fuel injector No.1 terminal B—PCM terminal 1EE — Fuel injector No.4 terminal A—PCM terminal 1DW — Fuel injector No.4 terminal B—PCM terminal 1EF • PCM connector or terminals malfunction • Fuel injector No.1 malfunction • Fuel injector No.4 malfunction • PCM malfunction

DTC P2147:00	Fuel injector No.1 and No.4 circuit low input



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.
3	**INSPECT FUEL INJECTOR NO.1 CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the fuel injector 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 9.
		No	Go to the next step.

STEP	INSPECTION		ACTION
4	**INSPECT FUEL INJECTOR NO.4 CONNECTOR CONDITION** • Disconnect the fuel injector No.4 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 9.
		No	Go to the next step.
5	**INSPECT FUEL INJECTOR CIRCUIT FOR SHORT TO GROUND** • Verify that the fuel injector No.1 and fuel injector No.4 connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Fuel injector No.1 terminal A — Fuel injector No.1 terminal B — Fuel injector No.4 terminal A — Fuel injector No.4 terminal B • 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 9.
		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 9.
		No	Go to the next step.
7	**INSPECT FUEL INJECTOR NO.1** • Inspect the fuel injector No.1. (See FUEL INJECTOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the fuel injector No.1, then go to Step 9. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
8	**INSPECT FUEL INJECTOR NO.4** • Inspect the fuel injector No.4. (See FUEL INJECTOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the fuel injector No.4, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
9	**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 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.
10	**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.