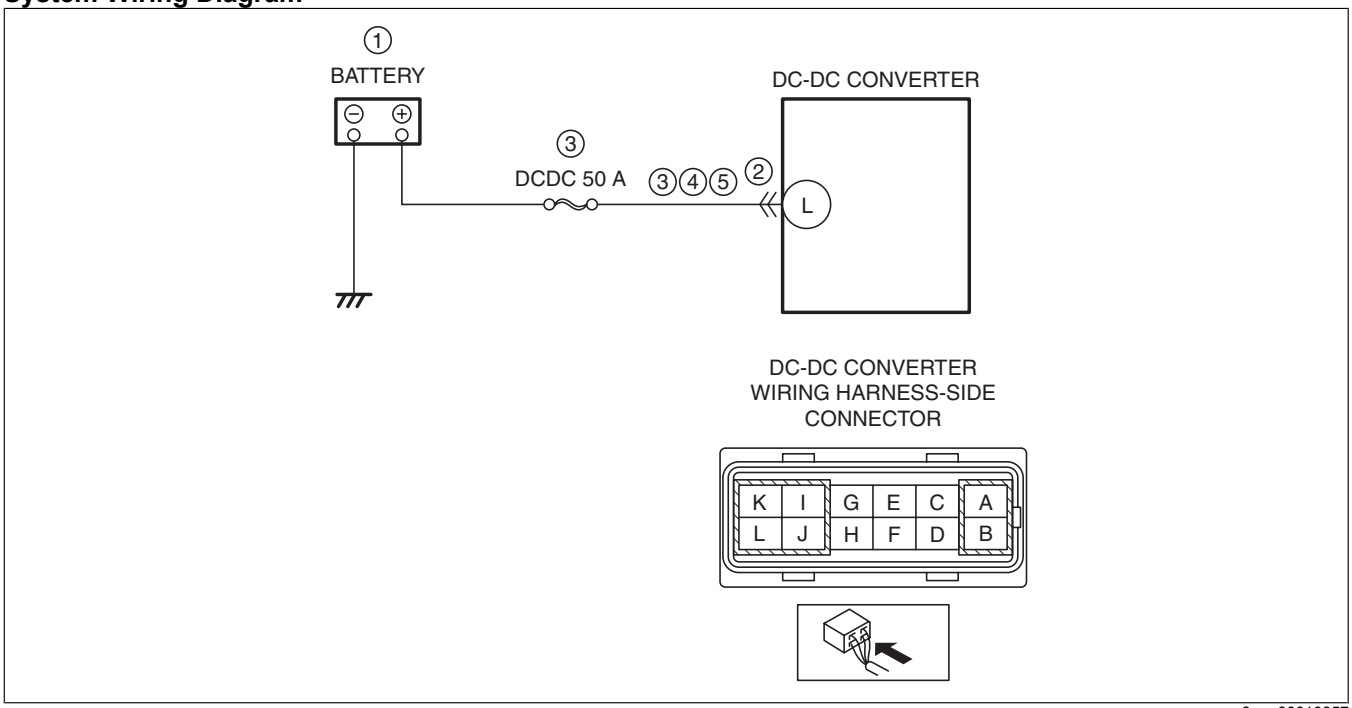
DTC P0A8D:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

id0102h4009400

Details On DTCs

DESCRIPTION	Power supply system circuit low input	
DETECTION CONDITION	Determination conditions	• Any one of the following conditions is met: — Battery voltage is **7.25 V or less** when engine restarts from i-stop. — DC-DC converter terminal voltage is **6 V or less** when engine restarts from i-stop. — PCM terminal voltage is **6.2 V or less** when engine starts. — Battery internal resistance is specified value or more.
	Preconditions	• Not applicable
	Drive cycle	• 1
	Self test type	• CMDTC self test
	Sensor used	• Current sensor
FAIL-SAFE FUNCTION	• Inhibits engine-stop by operating the i-stop function.	
VEHICLE STATUS WHEN DTCs ARE OUTPUT	• Flashes i-stop warning light (amber). • Illuminates master warning light. • The engine cannot be started or the engine may stall due to battery voltage decrease.	
POSSIBLE CAUSE	• Battery malfunction • Connector or terminal malfunction of the following parts: — Battery — Current sensor — PCM — DC-DC converter • Malfunction in the following fuses: — DCDC 50 A fuse • Short to ground in wiring harness between the following terminals: — Battery positive terminal—DC-DC converter terminal L • Open circuit in wiring harness between the following terminals: — Battery positive terminal—DC-DC converter terminal L • Current sensor malfunction • Front body control module (FBCM) malfunction • DC-DC converter malfunction • PCM malfunction	

System Wiring Diagram



am6zzw00010957

Function Explanation (DTC Detection Outline)

- The PCM assures engine startability and power during driving based on control of the battery related parts. The PCM detects the battery voltage during engine starting and the battery internal resistance based on the current sensor signal, and if the battery voltage during engine starting is low or the battery internal resistance is high, it determines that there is a malfunction in the battery related parts and stores a DTC.

Repeatability Verification Procedure

1. Start the engine.
2. Perform battery condition initial setting (i-stop setting).

PID Item/Simulation Item Used In Diagnosis

PID/DATA monitor item table

Item	Definition	Unit/ Condition	Condition/Specification (Reference)
BATT_CUR	Current sensor	A	• Displays battery charge/discharge current value
VPWR	Battery positive voltage	V	• Displays battery voltage

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.
2	**PURPOSE: VERIFY IF POWER SUPPLY IS AFFECTED BY DTC RELATED TO DC-DC CONVERTER** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Are DTCs related DC-DC converter recorded?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
3	**PURPOSE: VERIFY IF BATTERY VOLTAGE IS FALSELY RECOGNIZED BY DTC RELATED CURRENT SENSOR** • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the PENDING CODE/DTC P058A:00 also present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC P058A:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
4	**PURPOSE: VERIFY IF BATTERY VOLTAGE IS FALSELY RECOGNIZED BY DTC RELATED CAN OR LIN COMMUNICATION** • Perform the PCM and front body control module (FBCM) DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)].) • Are DTCs related CAN or LIN communication recorded?	Yes	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC TABLE [FRONT BODY CONTROL MODULE (FBCM)].)
		No	Go to the troubleshooting procedure to perform the procedure from step 1.

Troubleshooting Diagnostic Procedure
Intention of troubleshooting procedure

- Step 1
  — Perform a unit inspection of the battery.
- Step 2—5
  — Perform the inspection for each power supply line.
- Step 6—7
  — Verify that the primary malfunction is resolved and there are no other malfunctions.

STEP	INSPECTION	RESULTS	ACTION
1	**PURPOSE: DETERMINE INTEGRITY OF BATTERY** • Inspect the battery. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the battery, then go to Step 6. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
2	**PURPOSE: VERIFY IF CONNECTOR DAMAGE OF EACH PART AFFECTS DIAGNOSTIC RESULTS** • Switch the ignition off. • Disconnect the connector of the following parts. — Battery — Current sensor — PCM — DC-DC converter • 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 6.
		No	Go to the next step.
3	**PURPOSE: INSPECT FUSE** • Remove the following fuses: — DCDC 50 A fuse • Inspect the following fuses: — DCDC 50 A fuse • Are all the fuses normal?	Yes	Install all the removed fuses, then go to the next step.
		No	If the fuse is burnt out: • Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: — Battery positive terminal—DC-DC converter terminal L **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 a short to ground. — Repair or replace the malfunctioning part. **If there is no common connector:** — Repair or replace the wiring harness which has a short to ground. — Replace the malfunctioning fuse. If the fuse is damaged: • Replace the malfunctioning fuse. Go to Step 6.
4	**PURPOSE: VERIFY IF SHORT TO GROUND IN EACH WIRING HARNESS AFFECTS DIAGNOSTIC RESULTS** • Verify that the battery, current sensor, PCM and DC-DC converter connectors are disconnected. • Remove the IG1 relay. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — DC-DC converter terminal L • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Battery positive terminal—DC-DC converter terminal L **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 a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. Go to Step 6.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
5	**PURPOSE: VERIFY IF OPEN CIRCUIT IN EACH WIRING HARNESS AFFECTS DIAGNOSTIC RESULTS** • IG1 relay is removed. • Verify that the battery, current sensor, PCM and DC-DC converter connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Battery positive terminal—DC-DC converter terminal L • 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 the following terminals: • Battery positive terminal—DC-DC converter terminal L **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 the next step.
6	**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].) • Implement the repeatability verification procedure. (See Repeatability Verification Procedure.) • Perform the DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the same 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.
7	**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.