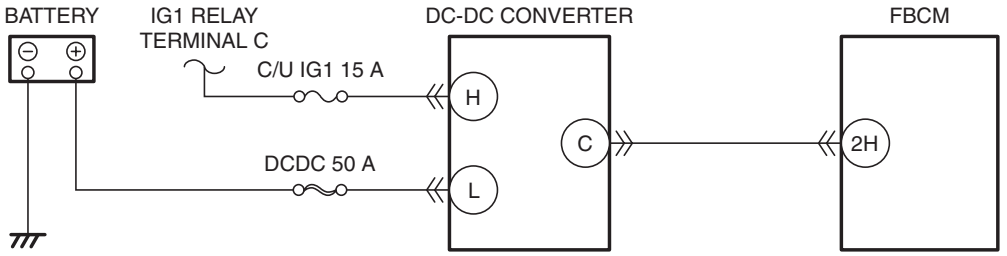
DTC U0298:68 [FRONT BODY CONTROL MODULE (FBCM)]

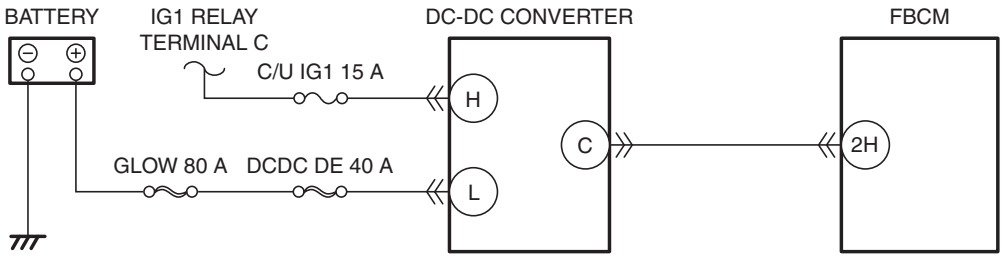
id0902p2010400

System malfunction location	**Communication error with DC-DC converter**
Detection condition	• The front body control module (FBCM) detects a communication error with the DC-DC converter.
Fail-safe	—
Possible cause	• Malfunction in communication line between front body control module (FBCM) and DC-DC converter • DC-DC converter connector terminal malfunction • Open or short to ground in DC-DC converter power supply circuit — Short to ground in wiring harness between battery positive terminal and DC-DC converter terminal L — DCDC 50 A fuse malfunction (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — DCDC DE 40 A fuse malfunction (SKYACTIV-D 2.2) — GLOW 80 A fuse malfunction (SKYACTIV-D 2.2) — Open circuit in wiring harness between battery positive terminal and DC-DC converter terminal L • Open or short to ground in DC-DC converter power supply circuit — Short to ground in wiring harness between IG1 relay terminal C and DC-DC converter terminal H — C/U IG1 15 A fuse malfunction — Open circuit in wiring harness between IG1 relay terminal C and DC-DC converter terminal H • Front body control module (FBCM) connector or terminal malfunction • Short to ground in wiring harness between DC-DC converter terminal C and front body control module (FBCM) terminal 2H • Open circuit in wiring harness between DC-DC converter terminal C and front body control module (FBCM) terminal 2H • DC-DC converter malfunction • Front body control module (FBCM) malfunction

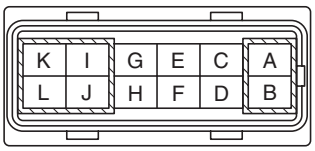
SKYACTIV-G 2.0, SKYACTIV-G 2.5

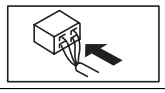


SKYACTIV-D 2.2

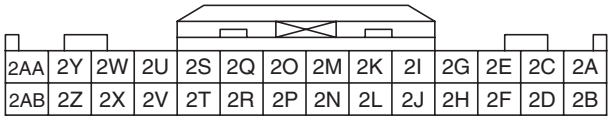


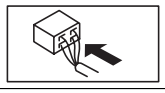
DC-DC CONVERTER
WIRING HARNESS-SIDE CONNECTOR





FBCM
WIRING HARNESS-SIDE CONNECTOR





Diagnostic Procedure

Step	Inspection		Action
1	**VERIFY FRONT BODY CONTROL MODULE (FBCM) DTCs AGAIN** • Clear front body control module (FBCM) DTCs using the M-MDS. (See CLEARING DTC [FRONT BODY CONTROL MODULE (FBCM)].) • Switch the ignition ON (engine off or on) and wait for **5 s or more**. • Perform the front body control module (FBCM) DTC inspection using the M-MDS. (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)].) • Is the DTC U0298:68 displayed?	Yes	Go to the next step.
		No	Go to Step 10.
2	**INSPECT DC-DC CONVERTER CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the DC-DC converter connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal?	Yes	Go to the next step.
		No	Repair or replace the connector, then go to Step 9.
3	**INSPECT DC-DC CONVERTER POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND** • Verify that the DC-DC connector is disconnected. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Measure the voltage at DC-DC converter terminal L (vehicle wiring harness side). • Is the voltage B+?	Yes	Go to the next step.
		No	Inspect the following fuses: • DCDC 50 A fuse (SKYACTIV-G 2.0, SKYACTIV-G 2.5) • DCDC DE 40 A fuse (SKYACTIV-D 2.2) • GLOW 80 A fuse (SKYACTIV-D 2.2) — If a fuse is burnt out: • Repair or replace the wiring harness which is shorted to ground. • Replace the fuse. — If a fuse is damaged: • Replace the fuse. — If the fuse is normal: • Repair or replace the wiring harness which has an open circuit. Go to Step 9.

Step	Inspection		Action
4	**INSPECT DC-DC CONVERTER POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND** • Verify that the DC-DC connector is disconnected. • Switch the ignition ON (engine off or on). • Measure the voltage at DC-DC converter terminal H (vehicle wiring harness side). • Is the voltage B+?	Yes	Go to the next step.
		No	Inspect the C/U IG1 15 A fuse. • If a fuse is burnt out: — Repair or replace the wiring harness which is shorted to ground. — Replace the fuse. • If a fuse is damaged: — Replace the fuse. • If the fuse is normal: — Repair or replace the wiring harness which has an open circuit. Go to Step 9.
5	**INSPECT FRONT BODY CONTROL MODULE (FBCM) CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the front body control module (FBCM) connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal?	Yes	Go to the next step.
		No	Repair or replace the connector, then go to Step 9.
6	**INSPECT DC-DC CONVERTER LIN COMMUNICATION CIRCUIT FOR SHORT TO GROUND** • Verify that the DC-DC converter and front body control module (FBCM) connectors are disconnected. • Inspect for continuity between DC-DC converter terminal C (vehicle wiring harness) and body ground. • Is there continuity?	Yes	Repair or replace the wiring harness, then go to Step 9.
		No	Go to the next step.
7	**INSPECT DC-DC CONVERTER LIN COMMUNICATION CIRCUIT FOR OPEN CIRCUIT** • Verify that the DC-DC converter and front body control module (FBCM) connectors are disconnected. • Inspect the wiring harness for continuity between DC-DC converter terminal C (vehicle wiring harness side) and front body control module (FBCM) terminal 2H (vehicle wiring harness side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness, then go to Step 9.
8	**INSPECT DC-DC CONVERTER** • Inspect the DC-DC converter. (See DC-DC CONVERTER INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER INSPECTION [SKYACTIV-D 2.2].) • Is the DC-DC converter normal?	Yes	Go to the next step.
		No	Replace the DC-DC converter, then go to the next step. (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

Step	Inspection		Action
9	**VERIFY THAT REPAIRS HAVE BEEN COMPLETED** • Reconnect all the disconnected connectors. • Reconnect the disconnected negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Clear front body control module (FBCM) DTCs using the M-MDS. (See CLEARING DTC [FRONT BODY CONTROL MODULE (FBCM)].) • Switch the ignition ON (engine off or on) and wait for **5 s or more**. • Perform the front body control module (FBCM) DTC inspection using the M-MDS. (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)].) • Is the DTC U0298:68 displayed?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the front body control module (FBCM), then go to the next step. (See FRONT BODY CONTROL MODULE (FBCM) REMOVAL/INSTALLATION.)
		No	Go to the next step.
10	**VERIFY IF OTHER DTCs DISPLAYED** • Are any other DTCs displayed?	Yes	Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [FRONT BODY CONTROL MODULE (FBCM)].)
		No	DTC troubleshooting completed.