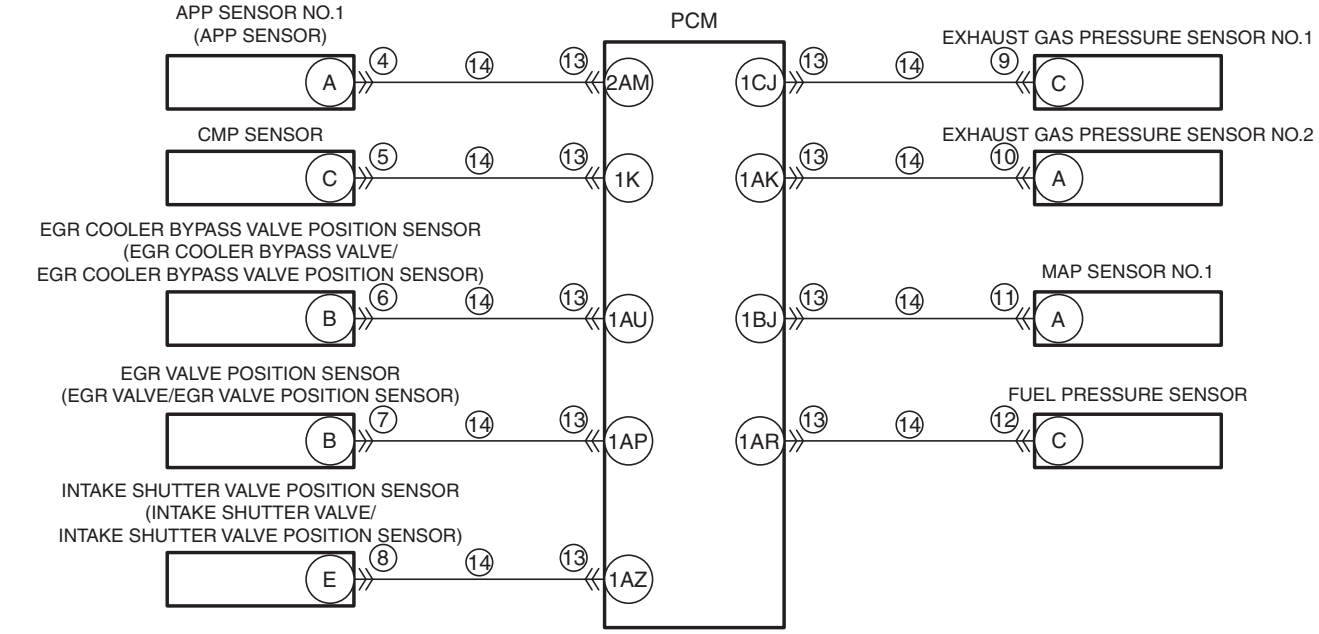
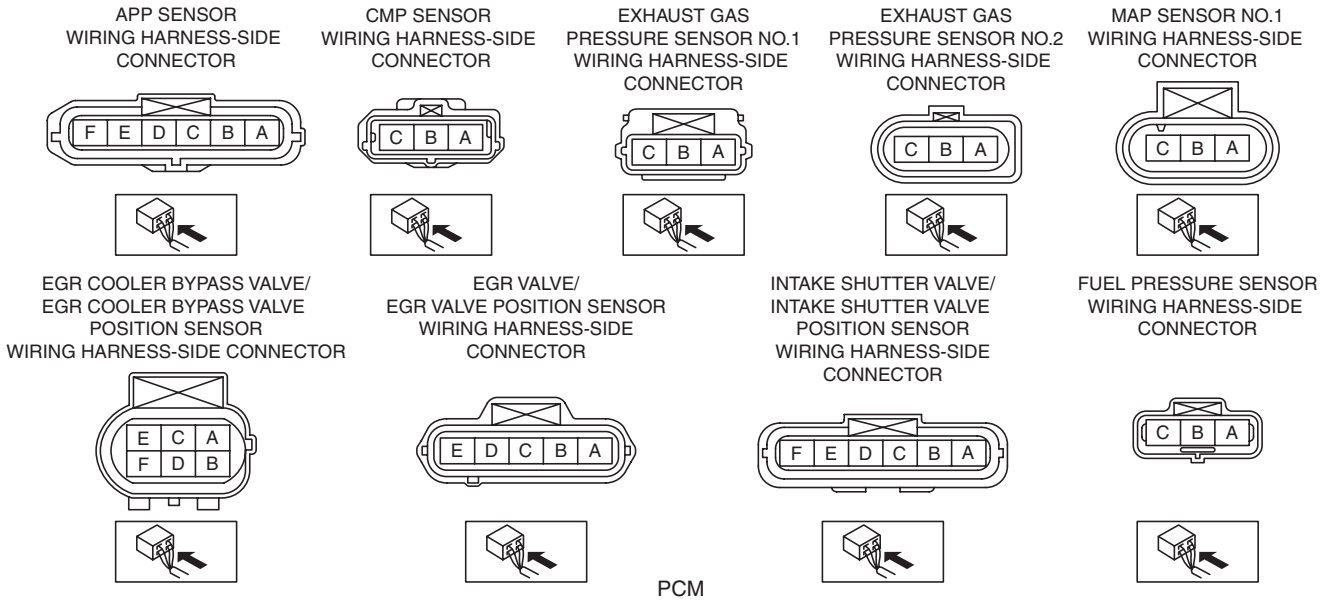
DTC P0652:00 [SKYACTIV-D 2.2]

id0102s4065200

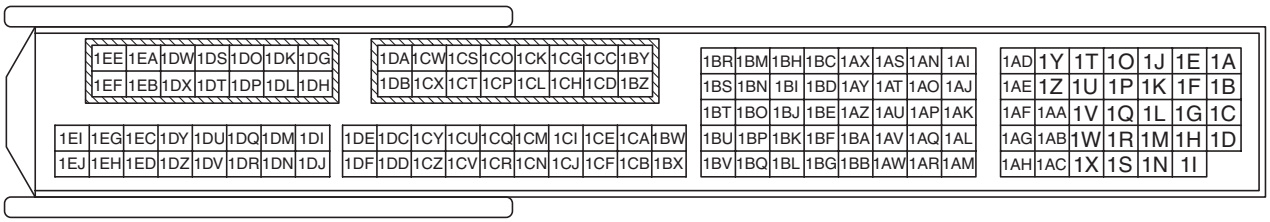
DTC P0652:00	Constant voltage power supply control circuit low input
DETECTION CONDITION	• When the following condition is met, the output voltage of the **5 V** power supply terminal is **3.9 V or less** for a continuous **1 s**: **MONITORING CONDITIONS** — Battery voltage: **8—20 V** **Diagnostic support note** • This is a continuous monitor (CCM). • 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	• Inhibits the EGR control. • Inhibits engine-stop by operating the i-stop function.
POSSIBLE CAUSE	• APP sensor connector or terminals malfunction • CMP sensor connector or terminals malfunction • EGR cooler bypass valve/EGR cooler bypass valve position sensor connector or terminals malfunction • EGR valve/EGR valve position sensor connector or terminals malfunction • Intake shutter valve/intake shutter valve position sensor connector or terminals malfunction • Exhaust gas pressure sensor No.1 connector or terminals malfunction • Exhaust gas pressure sensor No.2 connector or terminals malfunction • MAP sensor No.1 connector or terminals malfunction • Fuel pressure sensor connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — APP sensor terminal A—PCM terminal 2AM — CMP sensor terminal C—PCM terminal 1K — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal B—PCM terminal 1AU — EGR valve/EGR valve position sensor terminal B—PCM terminal 1AP — Intake shutter valve/intake shutter valve position sensor terminal E—PCM terminal 1AZ — Exhaust gas pressure sensor No.1 terminal C—PCM terminal 1CJ — Exhaust gas pressure sensor No.2 terminal A—PCM terminal 1AK — MAP sensor No.1 terminal A—PCM terminal 1BJ — Fuel pressure sensor terminal C—PCM terminal 1AR • PCM connector or terminals malfunction • PCM malfunction

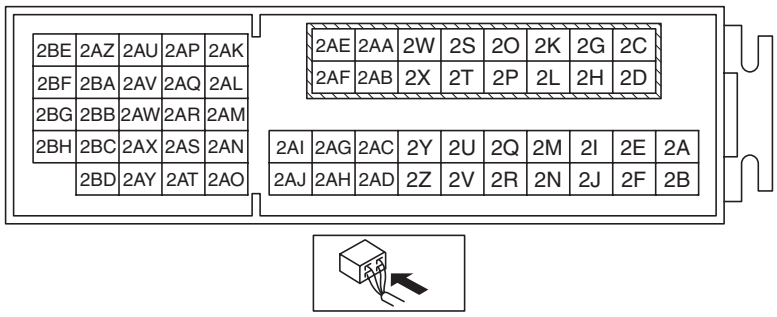
DTC P0652:00	Constant voltage power supply control circuit low input





PCM WIRING HARNESS-SIDE CONNECTOR





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	**VERIFY RELATED PENDING CODE AND/OR DTC** • 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-D 2.2].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
4	**INSPECT APP SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the APP 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.
5	**INSPECT CMP SENSOR CONNECTOR CONDITION** • Disconnect the CMP 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.
6	**INSPECT EGR COOLER BYPASS VALVE/EGR COOLER BYPASS VALVE POSITION SENSOR CONNECTOR CONDITION** • Disconnect the EGR cooler bypass valve/EGR cooler bypass valve position 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.
7	**INSPECT EGR VALVE/EGR VALVE POSITION SENSOR CONNECTOR CONDITION** • Disconnect the EGR valve/EGR valve position 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.
8	**INSPECT INTAKE SHUTTER VALVE/INTAKE SHUTTER VALVE POSITION SENSOR CONNECTOR CONDITION** • Disconnect the intake shutter valve/intake shutter valve position 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 EXHAUST GAS PRESSURE SENSOR NO.1 CONNECTOR CONDITION** • Disconnect the exhaust gas pressure sensor 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 15.
		No	Go to the next step.

STEP	INSPECTION		ACTION
10	**INSPECT EXHAUST GAS PRESSURE SENSOR NO.2 CONNECTOR CONDITION** • Disconnect the exhaust gas pressure sensor No. 2 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.
11	**INSPECT MAP SENSOR NO.1 CONNECTOR CONDITION** • Disconnect the MAP sensor 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 15.
		No	Go to the next step.
12	**INSPECT FUEL PRESSURE SENSOR CONNECTOR CONDITION** • Disconnect the fuel pressure 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.
13	**INSPECT EACH POWER CIRCUIT FOR SHORT TO GROUND** • Verify that the APP sensor, CMP sensor, EGR cooler bypass valve/EGR cooler bypass valve position sensor, EGR valve/EGR valve position sensor, intake shutter valve/intake shutter valve position sensor, exhaust gas pressure sensor No. 1, exhaust gas pressure sensor No.2, MAP sensor No.1 and fuel pressure sensor connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — APP sensor terminal A — CMP sensor terminal C — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal B — EGR valve/EGR valve position sensor terminal B — Intake shutter valve/intake shutter valve position sensor terminal E — Exhaust gas pressure sensor No.1 terminal C — Exhaust gas pressure sensor No.2 terminal A — MAP sensor No.1 terminal A — Fuel pressure sensor terminal C • 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 15.
		No	Go to the next step.
14	**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 the next step.
		No	Go to the next step.
15	**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 DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC 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.

STEP	INSPECTION		ACTION
16	**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.