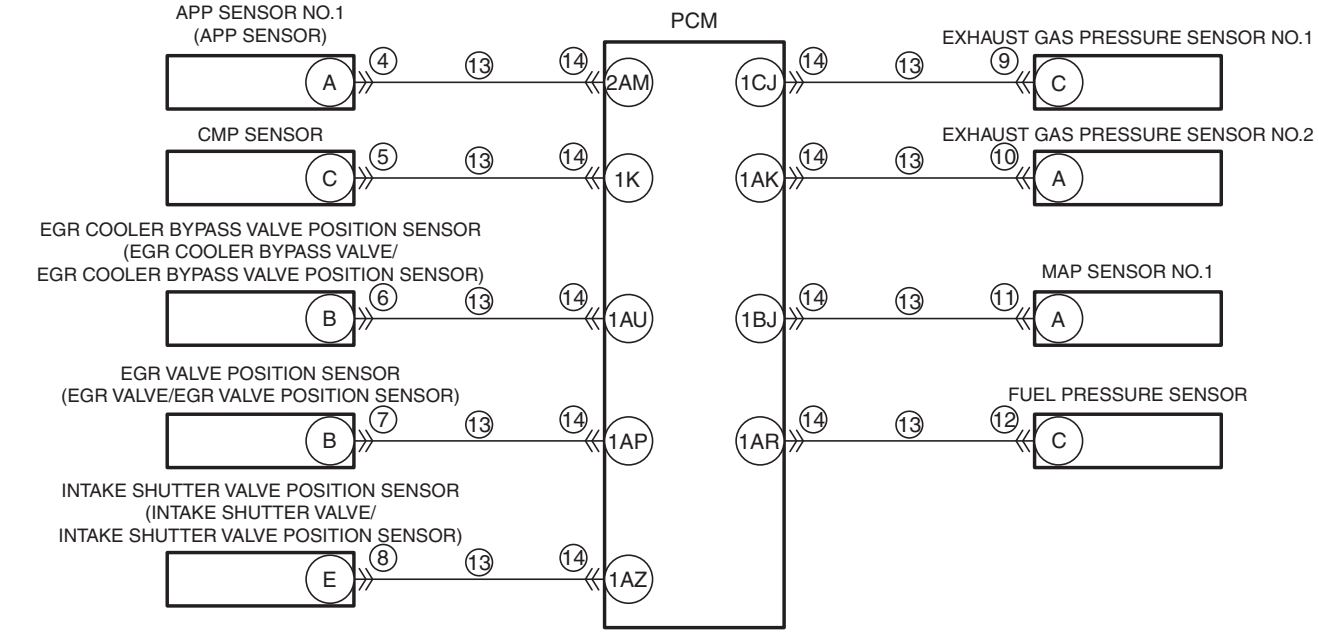
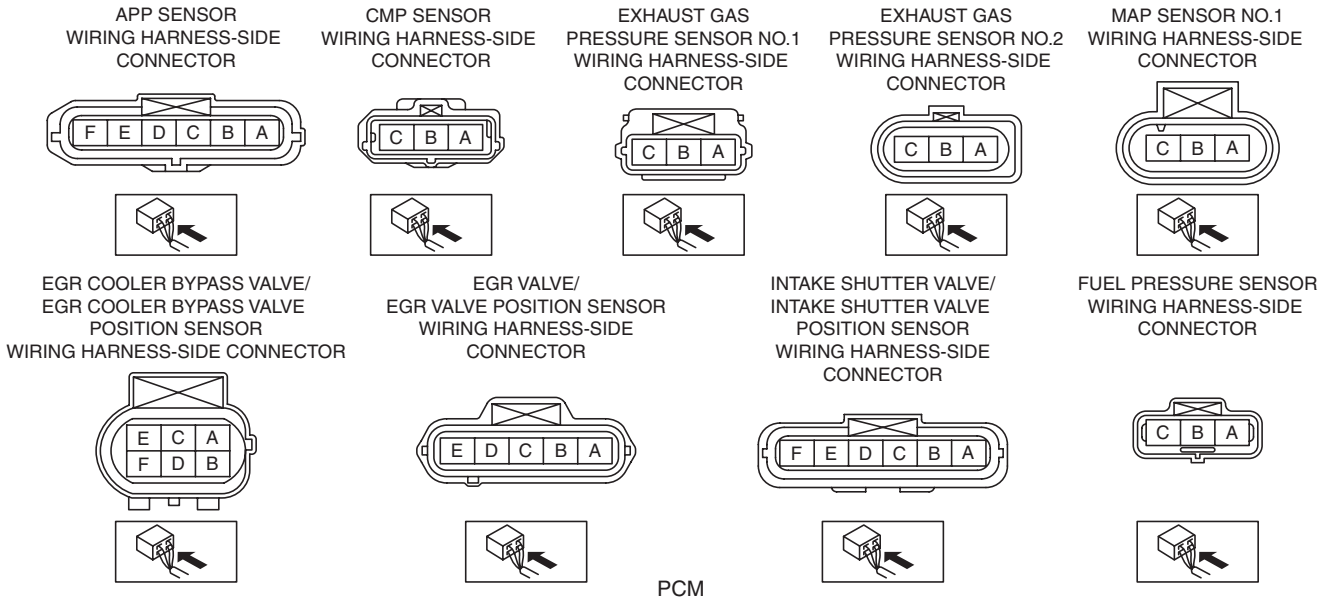
DTC P0653:00 [SKYACTIV-D 2.2]

id0102s4065300

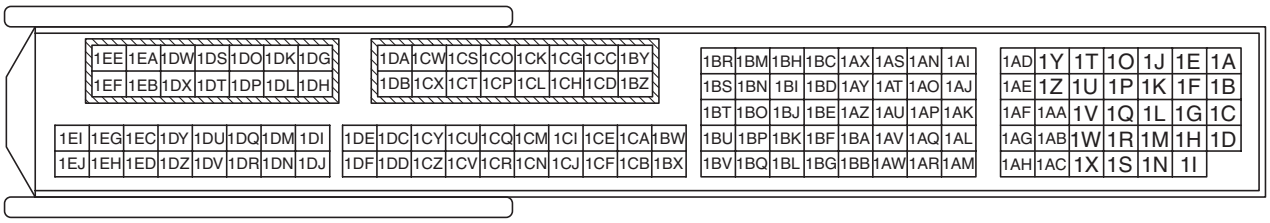
DTC P0653:00	Constant voltage power supply control circuit high input
DETECTION CONDITION	• When the following condition is met, the output voltage of the **5 V** power supply terminal **exceeds 4.1 V** for a continuous **1 s**: **MONITORING CONDITIONS** — Battery voltage: **8—20 V** **Diagnostic support 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 • PCM connector or terminals malfunction • Short to power supply 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 malfunction

DTC P0653:00	Constant voltage power supply control circuit high input





PCM
WIRING HARNESS-SIDE CONNECTOR



1EE	1EA	1DW	1DS	1DO	1DK	1DG	
1EF	1EB	1DX	1DT	1DP	1DL	1DH	

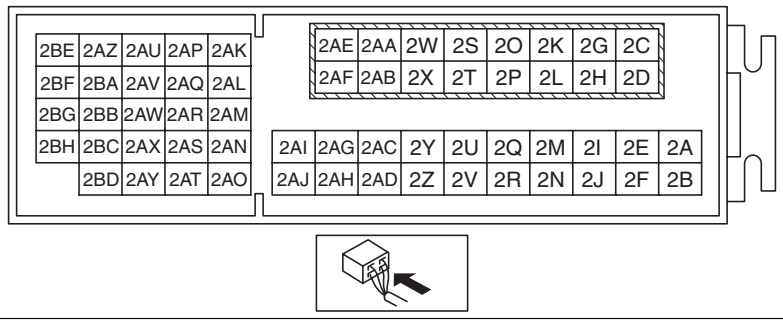
1DA	1CW	1CS	1CO	1CK	1CG	1CC	1BY
1DB	1CX	1CT	1CP	1CL	1CH	1CD	1BZ

1BR	1BM	1BH	1BC	1AX	1AS	1AN	1AI
1BS	1BN	1BI	1BD	1AY	1AT	1AO	1AJ
1BT	1BO	1BJ	1BE	1AZ	1AU	1AP	1AK
1BU	1BP	1BK	1BF	1BA	1AV	1AQ	1AL
1BV	1BQ	1BL	1BG	1BB	1AW	1AR	1AM

1AD	1Y	1T	1O	1J	1E	1A
1AE	1Z	1U	1P	1K	1F	1B
1AF	1AA	1V	1Q	1L	1G	1C
1AG	1AB	1W	1R	1M	1H	1D
1AH	1AC	1X	1S	1N	1I	

1EI	1EG	1EC	1DY	1DU	1DQ	1DM	1DI		
1EJ	1EH	1ED	1DZ	1DV	1DR	1DN	1DJ		

1DE	1DC	1CY	1CU	1CQ	1CM	1CI	1CE	1CA	1BW
1DF	1DD	1CZ	1CV	1CR	1CN	1CJ	1CF	1CB	1BX



2BE	2AZ	2AU	2AP	2AK					
2BF	2BA	2AV	2AQ	2AL					
2BG	2BB	2AW	2AR	2AM					
2BH	2BC	2AX	2AS	2AN					
	2BD	2AY	2AT	2AO					

2AE	2AA	2W	2S	2O	2K	2G	2C		
2AF	2AB	2X	2T	2P	2L	2H	2D		

2AI	2AG	2AC	2Y	2U	2Q	2M	2I	2E	2A
2AJ	2AH	2AD	2Z	2V	2R	2N	2J	2F	2B

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 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 15.
		No	Go to the next step.
14	**INSPECT EACH POWER CIRCUIT FOR SHORT TO POWER SUPPLY** • 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, fuel pressure sensor and PCM connectors are disconnected. • Measure the voltage at the following terminals (wiring harness-side): — 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 the voltage **0 V**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then 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.