

DTC P0616:23 [START STOP UNIT]

id0902p6022400

System malfunction location	Circuit malfunction on downstream side of starter relay
Detection condition	The start stop unit detects a short to ground in the starter relay downstream circuit continuously for 0.5 s or more for a continuous 5 times .
Fail-safe	—
Possible cause	<ul style="list-style-type: none">DTCs are stored in the PCM.PCM connector or terminal malfunctionStart stop unit connector or terminal malfunctionShort to ground in wiring harness between the following terminals:<ul style="list-style-type: none">Start stop unit terminal 1D—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5)Start stop unit terminal 1D—PCM terminal 2BF (SKYACTIV-D 2.2)PCM malfunctionStart stop unit malfunction

SKYACTIV-G 2.0,
SKYACTIV-G 2.5

START STOP UNIT

1D

TO STARTER RELAY

PCM

2AZ

SKYACTIV-D 2.2

START STOP UNIT

1D

TO STARTER RELAY

PCM

2BF

START STOP UNIT
WIRING HARNESS-SIDE CONNECTOR

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

2A

2B

PCM
WIRING HARNESS-SIDE CONNECTOR

2BE	2AZ	2AU	2AP	2AK	2AE	2AA	2W	2S	2O	2K	2G	2C		
2BF	2BA	2AV	2AQ	2AL	2AF	2AB	2X	2T	2P	2L	2H	2D		
2BG	2BB	2AW	2AR	2AM	2AI	2AG	2AC	2Y	2U	2Q	2M	2I	2E	2A
2BH	2BC	2AX	2AS	2AN	2AJ	2AH	2AD	2Z	2V	2R	2N	2J	2F	2B
2BD	2AY	2AT	2AO											

2A

2B

Diagnostic Procedure

Step	Inspection	Action
1	VERIFY PCM DTCs <ul style="list-style-type: none"> Perform the DTC inspection for the PCM using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Is the DTC displayed? 	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC TABLE [SKYACTIV-D 2.2].)
		No Go to the next step.
2	INSPECT PCM CONNECTOR CONDITION <ul style="list-style-type: none"> 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 PCM 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 6.
3	INSPECT START STOP UNIT CONNECTOR CONDITION <ul style="list-style-type: none"> Disconnect the start stop unit 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 6.
4	INSPECT DOWNSTREAM SIDE OF STARTER RELAY CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> Verify that the PCM and start stop unit connectors are disconnected. Inspect for continuity between start stop unit terminal 1D (vehicle wiring harness side) and body ground. Is there continuity? 	Yes Repair or replace the wiring harness which is shorted to ground, then go to Step 6.
		No Go to the next step.

Step	Inspection	Action
5	PERFORM DTC INSPECTION AND VERIFY IF MALFUNCTIONING PART IS PCM <ul style="list-style-type: none"> 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 DTC for the start stop unit using the M-MDS. (See CLEARING DTC [START STOP UNIT].) With the programmed remote transmitter in the vehicle, switch the ignition ON (engine off). Depress the clutch pedal and release it. (MTX) Operate the selector lever to positions from other than P or N and hold for 1 s or more, and perform this procedure 5 or more times. (ATX) Perform the DTC inspection for the start stop unit using the M-MDS. (See DTC INSPECTION [START STOP UNIT].) Is DTC P0616:23 displayed? 	Yes Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No Go to Step 7.
6	VERIFY THAT REPAIRS HAVE BEEN COMPLETED <ul style="list-style-type: none"> 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 DTC for the start stop unit using the M-MDS. (See CLEARING DTC [START STOP UNIT].) Switch the ignition ON (engine off or on). Depress the clutch pedal and release it. (MTX) Operate the selector lever to positions from other than P or N and hold for 1 s or more, and perform this procedure 5 or more times. (ATX) Perform the DTC inspection for the start stop unit using the M-MDS. (See DTC INSPECTION [START STOP UNIT].) Is DTC P0616:23 displayed? 	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the start stop unit, then go to the next step. (See START STOP UNIT REMOVAL/INSTALLATION.)
		No Go to the next step.
7	VERIFY IF OTHER DTCs DISPLAYED <ul style="list-style-type: none"> Are any other DTCs displayed? 	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [START STOP UNIT].)
		No DTC troubleshooting completed.