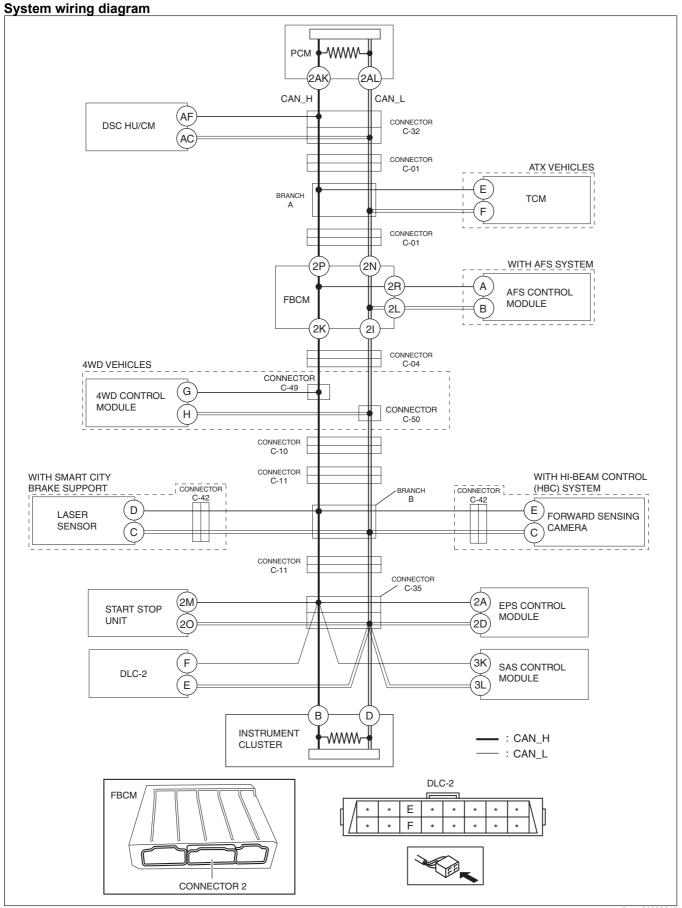
DETERMINING SHORT TO GROUND LOCATION (HS-CAN) [SKYACTIV-G 2.0 (L.H.D.)]

id100201000600

Caution

 Perform the following malfunction diagnosis only when it is diagnosed with a short to ground by CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-G 2.0 (L.H.D.)].



Determination procedure

Caution

- When disconnecting the connector, verify that there is no looseness, damage, deformation, corrosion, or poor connection of the connector terminals.
 When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals.

Step	Inspection		Action
1	INSPECT FOR SHORT TO GROUND	Yes	Go to Step 5.
	BETWEEN FRONT BODY CONTROL MODULE	No	Go to the next step.
	(FBCM) AND INSTRUMENT CLUSTER		
	Disconnect the negative battery cable.		
	(See NEGATIVE BATTERY CABLE		
	DISCONNECTION/CONNECTION		
	[SKYACTIV-G 2.0].)		
	(See NEGATIVE BATTERY CABLE		
	DISCONNECTION/CONNECTION		
	[SKYACTIV-G 2.0 (WITHOUT i-stop)].)		
	Disconnect connector 2 which has front body		
	control module (FBCM) terminals 2P and 2N.		
	Inspect for continuity at the following terminals:		
	Between DLC-2 terminal F and body		
	ground		
	Between DLC-2 terminal E and body		
	ground		
	Is there continuity?		
2	INSPECT CAN LINE INSIDE FRONT BODY	Yes	Replace the front body control module (FBCM) because
	CONTROL MODULE (FBCM) FOR SHORT TO		there is a short to ground in the front body control module
	GROUND		(FBCM).
	Inspect for continuity at the following terminals:		(See FRONT BODY CONTROL MODULE (FBCM)
	Between front body control module (FBCM)		REMOVAL/INSTALLATION.)
	terminal 2P and body ground	No	Go to the next step.
	Between front body control module (FBCM)		'
	terminal 2N and body ground		
	Is there continuity?		
3	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN AFS CONTROL MODULE AND	No	Go to Step 25.
	FRONT BODY CONTROL MODULE (FBCM)		·
	Inspect for continuity at the following terminals:		
	Between AFS control module terminal A		
	and body ground		
	Between AFS control module terminal B		
	and body ground		
	Is there continuity?		
4	INSPECT CAN LINE IN AFS CONTROL	Yes	Repair or replace the wiring harness between the AFS
	MODULE FOR SHORT TO GROUND		control module and front body control module (FBCM)
	Disconnect the AFS control module connector.		because the wiring harness is shorted to ground.
	Inspect for continuity at the following terminals:	No	Replace the AFS control module because there is a short
	Between AFS control module terminal A		to ground in the AFS control module.
	(wiring harness side) and body ground		(See ADAPTIVE FRONT LIGHTING SYSTEM (AFS)
	Between AFS control module terminal B		CONTROL MODULE REMOVAL/INSTALLATION.)
	(wiring harness side) and body ground		
	Is there continuity?		

Step	Inspection		Action
5	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN CONNECTOR C-04 AND	No	Repair or replace the wiring harness between the front
	INSTRUMENT CLUSTER		body control module (FBCM) and connector C-04 because
	Disconnect connector C-04.		the wiring harness is shorted to ground.
	Inspect for continuity at the following terminals:		
	Between DLC-2 terminal F and body		
	ground		
	Between DLC-2 terminal E and body		
	ground • Is there continuity?		
6	INSPECT FOR SHORT TO GROUND	Yes	Go to Step 9.
	BETWEEN CONNECTOR C-49 AND C-50 AND	No	Go to the next step.
	INSTRUMENT CLUSTER	110	Go to the next step.
	Disconnect connector C-49 and C-50.		
	Inspect for continuity at the following terminals:		
	 Between DLC-2 terminal F and body 		
	ground		
	Between DLC-2 terminal E and body		
	ground		
7	• Is there continuity?	\/-·	Co to the most star
7	INSPECT FOR SHORT TO GROUND BETWEEN 4WD CONTROL MODULE AND	Yes	Go to the next step.
	CONNECTORS C-49 AND C-50	No	Repair or replace the wiring harness between connector C-04 and connectors C-49 and C-50 because the wiring
	• Inspect for continuity at the following terminals:		harness is shorted to ground.
	Between 4WD control module terminal G		mariless is shorted to ground.
	and body ground		
	Between 4WD control module terminal H		
	and body ground		
	Is there continuity?		
8	INSPECT CAN LINE IN 4WD CONTROL	Yes	Repair or replace the wiring harness between the 4WD
	MODULE FOR SHORT TO GROUND		control module and connectors C-49 and C-50 because the
	Disconnect the 4WD control module connector.	NI-	wiring harness is shorted to ground.
	Inspect for continuity at the following terminals: Between 4WD control module terminal G	No	Replace the 4WD control module because there is a short to ground in the 4WD control module.
	(wiring harness side) and body ground		(See 4WD CONTROL MODULE REMOVAL/
	Between 4WD control module terminal H		INSTALLATION.)
	(wiring harness side) and body ground		interview,
	• Is there continuity?		
9	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN CONNECTOR C-10 AND	No	Repair or replace the wiring harness between connectors
	INSTRUMENT CLUSTER		C-49 and C-50 and connector C-10 because the wiring
	• Disconnect connector C-10.		harness is shorted to ground.
	• Inspect for continuity at the following terminals:		
	Between DLC-2 terminal F and body ground		
	ground — Between DLC-2 terminal E and body		
	ground		
	Is there continuity?		
10	INSPECT FOR SHORT TO GROUND	Yes	Go to Step 16.
	BETWEEN CONNECTOR C-11 AND	No	Go to the next step.
	INSTRUMENT CLUSTER		
	Disconnect connector C-11.		
	• Inspect for continuity at the following terminals:		
	Between DLC-2 terminal F and body		
	ground		
	Between DLC-2 terminal E and body ground		
	ground • Is there continuity?		
	· 13 there continuity!		

Step	Inspection		Action
11	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN LASER SENSOR AND CONNECTOR C-42 • Disconnect connector C-42. • Inspect for continuity at the following terminals: — Between laser sensor terminal D and body ground — Between laser sensor terminal C and body ground	No	Go to Step 13.
	• Is there continuity?		
12	INSPECT CAN LINE INSIDE LASER SENSOR FOR SHORT TO GROUND • Disconnect the laser sensor connector. • Inspect for continuity at the following terminals: — Between laser sensor terminal D (wiring harness side) and body ground — Between laser sensor terminal C (wiring harness side) and body ground • Is there continuity?	Yes	Repair or replace the wiring harness between the laser sensor and connector C-42 because the wiring harness is shorted to ground.
		No	Replace the laser sensor because there is a short to ground in the laser sensor. (See LASER SENSOR REMOVAL/INSTALLATION.)
13	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
13	BETWEEN FORWARD SENSING CAMERA AND CONNECTOR C-42 Inspect for continuity at the following terminals: Between forward sensing camera terminal E and body ground Between forward sensing camera terminal C and body ground Is there continuity?	No	Go to Step 15.
14	INSPECT CAN LINE IN FORWARD SENSING	Yes	Repair or replace the wiring harness between the forward
	 CAMERA FOR SHORT TO GROUND Disconnect the forward sensing camera connector. Inspect for continuity at the following terminals: Between forward sensing camera terminal E (wiring harness side) and body ground Between forward sensing camera terminal C (wiring harness side) and body ground 	No	sensing camera and connector C-42 because the wiring harness is shorted to ground. Replace the forward sensing camera because there is a short to ground in the forward sensing camera. (See FORWARD SENSING CAMERA (FSC) REMOVAL/INSTALLATION.)
15	Is there continuity? INSPECT FOR SHORT TO GROUND BETWEEN CONNECTORS C-11 AND C-42	Yes	Repair or replace the wiring harness between connector C-11 and connector C-42 because the wiring harness is
	Connect connector C-42. Inspect for continuity at the following terminals: Between forward sensing camera terminal E and body ground (with high beam control (HBC) system) Between forward sensing camera terminal C and body ground (with high beam control (HBC) system) Between laser sensor terminal D and body ground (with smart city brake support) Between laser sensor terminal C and body ground (with smart city brake support) Is there continuity?	No	shorted to ground. Repair or replace the wiring harness between connector C-10 and connector C-11 because the wiring harness is shorted to ground.
16	INSPECT FOR SHORT TO GROUND BETWEEN CONNECTORS C-35 AND DLC-2 • Disconnect connector C-35.	Yes	Repair or replace the wiring harness between connector C-35 and DLC-2 because the wiring harness is shorted to ground.
	Inspect for continuity at the following terminals:	No	Go to the next step.

Step	Inspection		Action
17	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
''	BETWEEN START STOP UNIT AND CONNECTOR C-35 • Inspect for continuity at the following terminals:	No	Go to Step 19.
	Between start stop unit terminal 2M and body ground		
	Between start stop unit terminal 2O and body ground Is there continuity?		
18	INSPECT CAN LINE IN START STOP UNIT FOR SHORT TO GROUND	Yes	Repair or replace the wiring harness between the start stop unit and connector C-35 because the wiring harness is
	Disconnect the start stop unit connector. Inspect for continuity at the following terminals:	No	shorted to ground. Replace the start stop unit because there is a short to
	Between start stop unit terminal 2M (wiring harness side) and body ground Between start stop unit terminal 2O (wiring harness side) and body ground Is there continuity?		ground in the start stop unit. (See START STOP UNIT REMOVAL/INSTALLATION.)
19	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN EPS CONTROL MODULE AND CONNECTOR C-35	No	Go to Step 21.
	Inspect for continuity at the following terminals: Between EPS control module terminal 2A and body ground		
	 Between EPS control module terminal 2D and body ground Is there continuity? 		
20	INSPECT CAN LINE IN EPS CONTROL	Yes	Repair or replace the wiring harness between the EPS
	MODULE FOR SHORT TO GROUND • Disconnect the EPS control module connector.		control module and connector C-35 because the wiring harness is shorted to ground.
	Inspect for continuity at the following terminals:	No	Replace the EPS control module because there is a short
	 Between EPS control module terminal 2A (wiring harness side) and body ground Between EPS control module terminal 2D (wiring harness side) and body ground 		to ground in the EPS control module. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
	• Is there continuity?		
21	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN SAS CONTROL MODULE AND CONNECTOR C-35	No	Go to Step 23.
	Inspect for continuity at the following terminals: Between SAS control module terminal 3K and body ground		
	Between SAS control module terminal 3L and body ground		
22	Is there continuity? INSPECT CAN LINE IN SAS CONTROL	Yes	Repair or replace the wiring harness between the SAS
	MODULE FOR SHORT TO GROUND • Disconnect the SAS control module connector.	103	control module and connector C-35 because the wiring harness is shorted to ground.
	Inspect for continuity at the following terminals:	No	Replace the SAS control module because there is a short
	Between SAS control module terminal 3K (wiring harness side) and body ground		to ground in the SAS control module. (See SAS CONTROL MODULE REMOVAL/
	Between SAS control module terminal 3L		INSTALLATION.)
	(wiring harness side) and body ground • Is there continuity?		,
23	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN INSTRUMENT CLUSTER AND CONNECTOR C-35	No	Repair or replace the wiring harness between connector C-11 and connector C-35 because the wiring harness is
	Inspect for continuity at the following terminals: Between instrument cluster terminal B and body ground		shorted to ground.
	Between instrument cluster terminal D and body ground Is there continuity?		

Step	Inspection		Action
24	INSPECT CAN LINE IN INSTRUMENT	Yes	Repair or replace the wiring harness between the
	CLUSTER FOR SHORT TO GROUND	103	instrument cluster and connector C-35 because the wiring
	Disconnect the instrument cluster connector.		harness is shorted to ground.
		No	Replace the instrument cluster because there is a short to
	• Inspect for continuity at the following terminals:	No	
	Between instrument cluster terminal B		ground in the instrument cluster.
	(wiring harness side) and body ground		(See INSTRUMENT CLUSTER REMOVAL/
	Between instrument cluster terminal D		INSTALLATION.)
	(wiring harness side) and body ground		
	Is there continuity?		
25	INSPECT FOR SHORT TO GROUND	Yes	Repair or replace the wiring harness between connector
	BETWEEN CONNECTOR C-01 AND FRONT		C-01 and the front body control module (FBCM) because
	BODY CONTROL MODULE (FBCM)		the wiring harness is shorted to ground.
	Disconnect connector C-01.	No	Go to the next step.
	Connect connector 2 which has front body		
	control module (FBCM) terminals 2P and 2N.		
	Inspect for continuity at the following terminals:		
	 Between DLC-2 terminal F and body 		
	ground		
	Between DLC-2 terminal E and body		
	ground		
	• Is there continuity?		
26	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
20	BETWEEN CONNECTOR C-01 AND TCM	No	Go to Step 28.
	• Inspect for continuity at the following terminals:	140	G0 t0 0tcp 20.
	Between TCM terminal E and body ground		
	Between TCM terminal F and body ground		
27	• Is there continuity? INSPECT CAN LINE IN TCM FOR SHORT TO	Vaa	Denois or replace the wining berness between the TCM and
21	GROUND	Yes	Repair or replace the wiring harness between the TCM and
			connector C-01 because the wiring harness is shorted to
	Disconnect the TCM connector.		ground.
	• Inspect for continuity at the following terminals:	No	Replace the TCM because there is a short to ground in the
	Between TCM terminal E (wiring harness)		TCM.
	side) and body ground		(See CONTROL VALVE BODY REMOVAL/
	Between TCM terminal F (wiring harness)		INSTALLATION [FW6A-EL, FW6AX-EL].)
	side) and body ground		
	Is there continuity?		
28	INSPECT FOR SHORT TO GROUND	Yes	Repair or replace the wiring harness between connector
	BETWEEN CONNECTORS C-32 AND C-01		C-32 and connector C-01 because the wiring harness is
	Disconnect connector C-32.		shorted to ground.
	Connect connector C-01.	No	Go to the next step.
	Inspect for continuity at the following terminals:		
	 Between DLC-2 terminal F and body 		
	ground		
	 Between DLC-2 terminal E and body 		
	ground		
	Is there continuity?		
29	INSPECT FOR SHORT TO GROUND	Yes	Go to the next step.
	BETWEEN DSC HU/CM AND CONNECTOR	No	Go to Step 31.
	C-32	_	'
	Inspect for continuity at the following terminals:		
	Between DSC HU/CM terminal AF and		
	body ground		
	Between DSC HU/CM terminal AC and		
	body ground		
	• Is there continuity?		
30	INSPECT CAN LINE IN DSC HU/CM FOR	Yes	Repair or replace the wiring harness between the DSC HU/
00	SHORT TO GROUND	. 03	CM and connector C-32 because the wiring harness is
	Disconnect the DSC HU/CM connector.		shorted to ground.
	Inspect for continuity at the following terminals:	No	
		No	Replace the DSC HU/CM because there is a short to
	Between DSC HU/CM terminal AF (wiring barness side) and bady ground		ground in the DSC HU/CM.
	harness side) and body ground		(See DSC HU/CM REMOVAL/INSTALLATION.)
	Between DSC HU/CM terminal AC (wiring		
	harness side) and body ground		
	Is there continuity?		

Step	Inspection		Action
31	INSPECT CAN LINE IN PCM FOR SHORT TO GROUND • Disconnect the PCM connector.	Yes	Repair or replace the wiring harness between the PCM and connector C-32 because the wiring harness is shorted to ground.
	 Inspect for continuity at the following terminals: Between PCM terminal 2AK (wiring harness side) and body ground Between PCM terminal 2AL (wiring harness side) and body ground Is there continuity? 		Replace the PCM because there is a short to ground in the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)