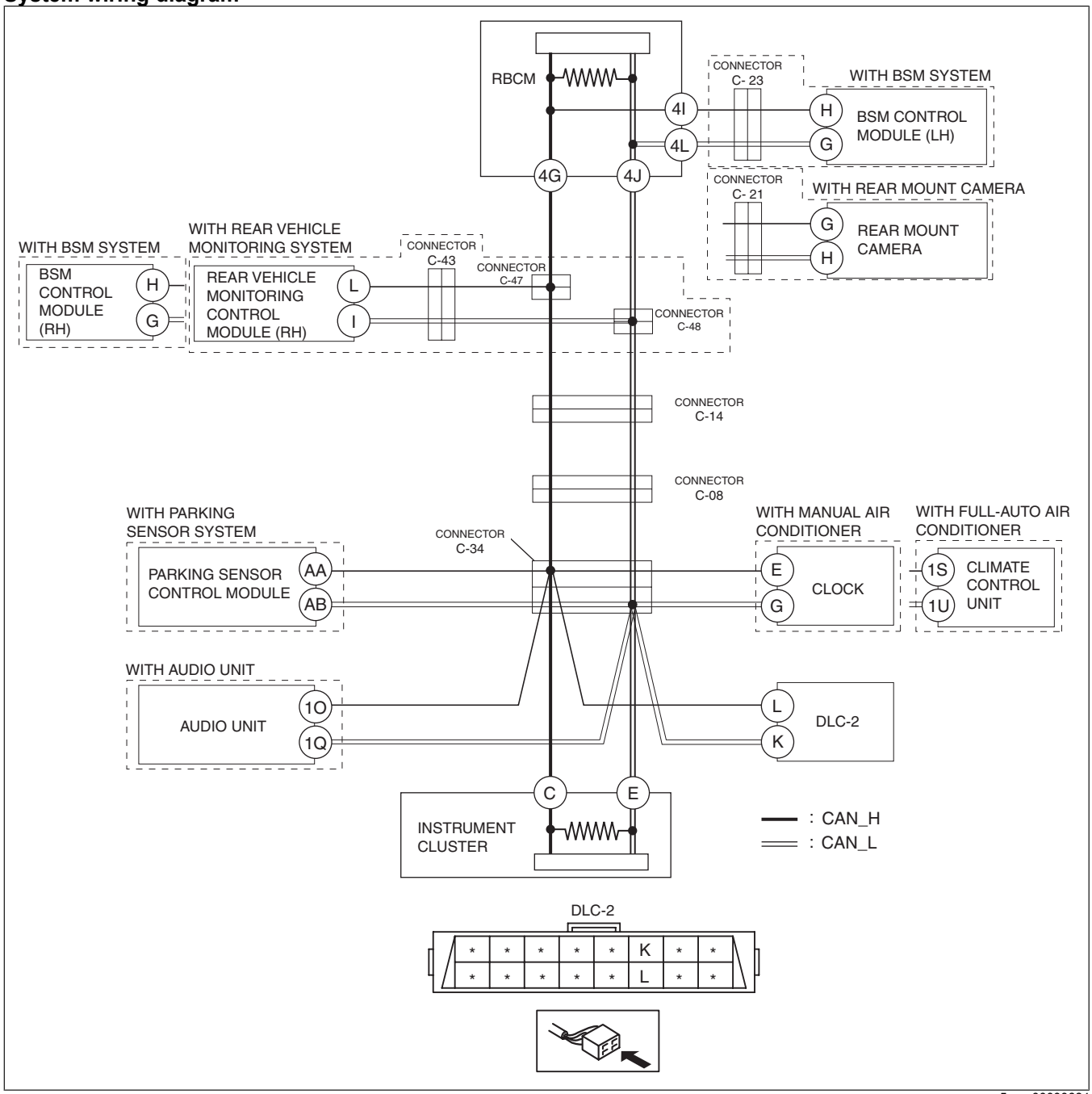
DETERMINING SHORT TO POWER SUPPLY LOCATION (MS-CAN) [SKYACTIV-D 2.2 (R.H.D.)]

id100206001000

Caution

- **Perform the following malfunction diagnosis only when it is diagnosed with a short to the power supply by CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-D 2.2 (R.H.D.)].**

System wiring diagram



ac5wzw00000684

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.**

- **Disconnect the negative battery cable before performing any work that requires handling of connectors.**

Step	Inspection		Action
1	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-08 AND INSTRUMENT CLUSTER** • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connector C-08. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 11.
		No	Go to the next step.
2	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTORS C-34 AND DLC-2** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connector C-34. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage 0 V?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between DLC-2 and connector C-34 because the wiring harness is shorted to the power supply.
3	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-34 AND PARKING SENSOR CONTROL MODULE** • Measure the voltage at parking sensor control module terminals AA and AB. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 5.
		No	Go to the next step.
4	**INSPECT PARKING SENSOR CONTROL MODULE FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the parking sensor control module connector. • Connect connector C-34. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the parking sensor control module because there is a short to power supply in the parking sensor control module. (See PARKING SENSOR CONTROL MODULE REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between the parking sensor control module and connector C-34 because the wiring harness is shorted to the power supply.

Step	Inspection		Action
5	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-34 AND CLIMATE CONTROL UNIT OR CLOCK** • Measure the voltage at climate control unit terminals 1S and 1U. (with full-auto air conditioner) • Measure the voltage at clock terminals E and G. (with manual air conditioner) • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 7.
		No	Go to the next step.
6	**INSPECT CLIMATE CONTROL UNIT OR CLOCK FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the climate control unit connector or the clock connector. • Connect connector C-34. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the climate control unit or the clock because there is a short to power supply inside the climate control unit or the clock. (See CLIMATE CONTROL UNIT REMOVAL/ INSTALLATION [FULL-AUTO AIR CONDITIONER].) (See CLOCK REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between the climate control unit or the clock and connector C-34 because the wiring harness is shorted to the power supply.
7	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-34 AND AUDIO** • Measure the voltage at audio unit terminals 1O and 1Q. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 9.
		No	Go to the next step.
8	**INSPECT AUDIO UNIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the audio unit connector. • Connect connector C34. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at audio unit terminals 1O and 1Q (wiring harness side). • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the audio unit because there is a short to the power supply in the audio unit. (See AUDIO UNIT REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between the audio unit and connector C-34 because the wiring harness is shorted to the power supply.
9	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-34 AND INSTRUMENT CLUSTER** • Measure the voltage at instrument cluster terminals C and E. • Is the voltage between 1.5 - 3.5 V?	Yes	Repair or replace the wiring harness between connector C-08 and connector C-34 because the wiring harness is shorted to the power supply.
		No	Go to the next step.

Step	Inspection		Action
10	**INSPECT INSTRUMENT CLUSTER FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the instrument cluster connector. • Connect connector C-34. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the instrument cluster because there is a short to the power supply in the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/ INSTALLATION.)
		No	Repair or replace the wiring harness between the instrument cluster and connector C-34 because the wiring harness is shorted to the power supply.
11	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTORS C-14 AND C-08** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connector C-14. • Connect connector C-08. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-14 and connector C-08 because the wiring harness is shorted to the power supply.
12	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTORS C-47 AND C-48 AND CONNECTOR C-14** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connectors C-47 and C-48. • Connect connector C-14. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connectors C-47 and C-48 and connector C-14 because the wiring harness is shorted to the power supply.
13	**INSPECT BETWEEN REAR VEHICLE MONITORING CONTROL MODULE (RH) OR BSM CONTROL MODULE (RH) AND CONNECTORS C-47 AND C-48 FOR SHORT TO POWER SUPPLY** • Measure the voltage at rear vehicle monitoring control module (RH) terminals L and I. (With rear vehicle monitoring system) • Measure the voltage at BSM control module (RH) terminals H and G. (With BSM system) • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 16.
		No	• Go to the next step. (With rear vehicle monitoring system) • Go to Step 15.

Step	Inspection		Action
14	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN REAR VEHICLE MONITORING CONTROL MODULE (RH) AND CONNECTOR C-43** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connectors C-43. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at rear vehicle monitoring (RH) terminals L and I. • Is the voltage between 1.5 - 3.5 V?	Yes	Repair or replace the wiring harness between connector C-43 and connectors C-47 and C-48 because the wiring harness is shorted to the power supply.
		No	Go to the next step.
15	**INSPECT BETWEEN REAR VEHICLE MONITORING CONTROL MODULE (RH) OR BSM CONTROL MODULE (RH) FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the rear vehicle monitoring control modules (RH) connector or the BSM control module (RH) connector. • Connect connectors C-47 and C-48. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the rear vehicle monitoring control module (RH) or the BSM control module (RH) because there is a short to the power supply in the rear vehicle monitoring control module (RH) or the BSM control module (RH). (See REAR VEHICLE MONITORING CONTROL MODULE REMOVAL/INSTALLATION.) (See BLIND SPOT MONITORING (BSM) CONTROL MODULE REMOVAL/INSTALLATION.)
		No	• Repair or replace the wiring harness between the rear vehicle monitoring control module (RH) and connector C-43 because the wiring harness is shorted to the power supply. (With rear vehicle monitoring system) • Repair or replace the wiring harness between the BSM control module (RH) and connectors C-47 and C-48 because the wiring harness is shorted to the power supply. (With BSM system)
16	**INSPECT FOR SHORT TO POWER SUPPLY BETWEEN REAR BODY CONTROL MODULE (RBCM) AND BSM CONTROL MODULE (LH) OR REAR MOUNT CAMERA** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the rear body control module (RBCM) connector. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at BSM control module (LH) terminals H and G. (With BSM system) • Measure the voltage at BSM control module (LH) terminals H and G. (With rear mount camera) • Is the voltage between 1.5 - 3.5 V?	Yes	Go to Step 19.
		No	Go to the next step.

Step	Inspection		Action
17	**INSPECT BETWEEN REAR BODY CONTROL MODULE (RBCM) AND CONNECTOR C-23 OR C-21 FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect connector C-23 or C-21. • Connect the rear body control module (RBCM) connector. • Connect connectors C-47 and C-48. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between the rear body control module (RBCM) and connector C-23 or C-21 because the wiring harness is shorted to the power supply.
18	**INSPECT BSM CONTROL MODULE (LH) OR REAR MOUNT CAMERA FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the BSM control module (LH) connector or the rear mount camera connector. • Connect connector C-23 or C-21. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the BSM control module (LH) or the rear mount camera because there is a short to the power supply in the BSM control module (LH) or the rear mount camera. (See BLIND SPOT MONITORING (BSM) CONTROL MODULE REMOVAL/INSTALLATION.) (See REAR MOUNT CAMERA REMOVAL/INSTALLATION.)
		No	• Repair or replace the wiring harness between BSM control module (LH) and connector C-23 because the wiring harness is shorted to the power supply. (With BSM system) • Repair or replace the wiring harness between the rear mount camera and connector C-21 because the wiring harness is shorted to the power supply. (With rear mount camera)
19	**INSPECT REAR BODY CONTROL MODULE (RBCM) FOR SHORT TO POWER SUPPLY** • Switch the ignition off (LOCK). • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Connect connectors C-47 and C-48. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 - 3.5 V?	Yes	Replace the rear body control module (RBCM) because there is a short to the power supply in the rear body control module (RBCM). (See REAR BODY CONTROL MODULE (RBCM) REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between the rear body control module (RBCM) and connectors C-47 and C-48 because the wiring harness is shorted to the power supply.