Open in CAN Main Bus Line

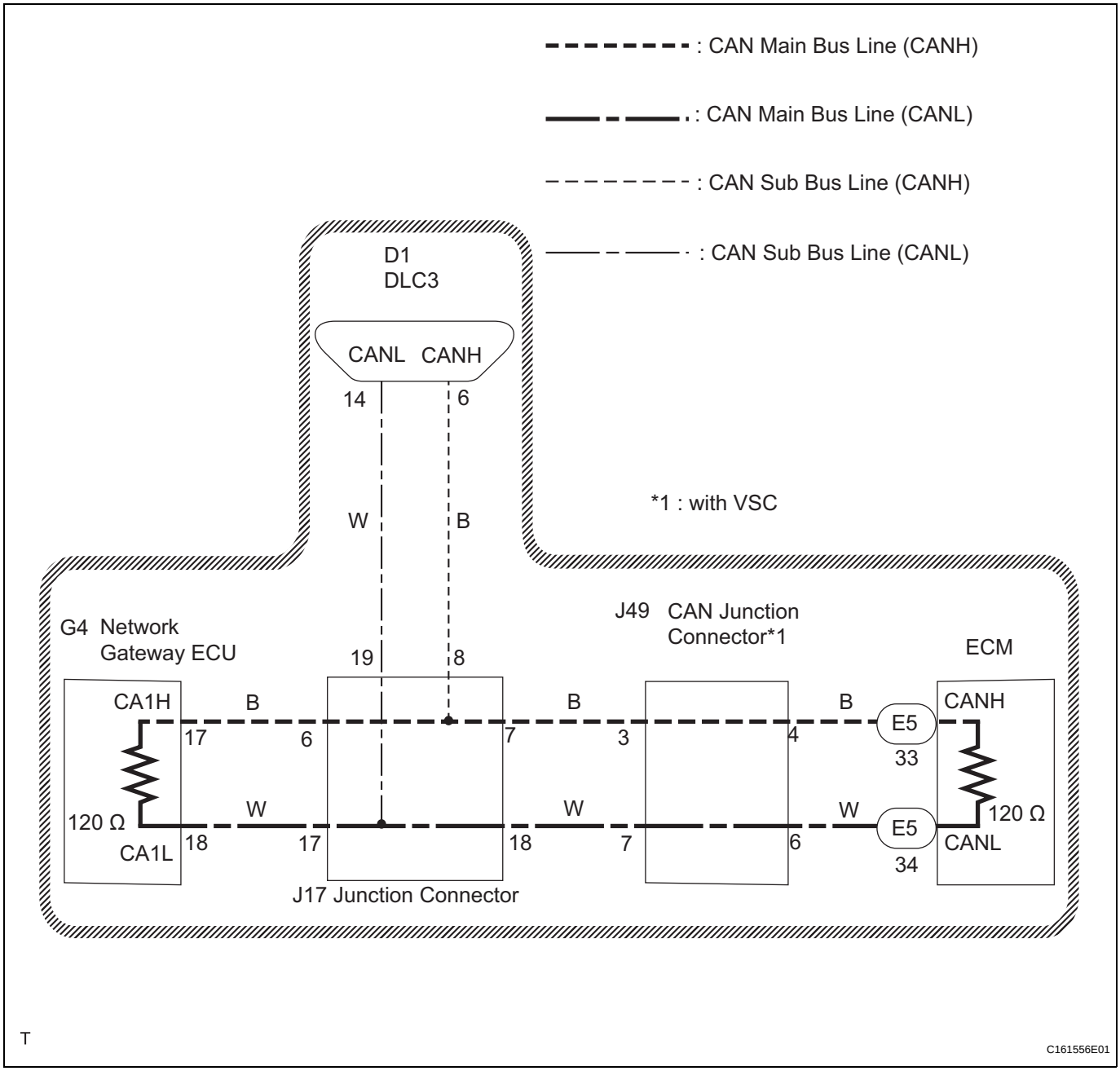
DESCRIPTION

There may be an open circuit in the CAN main bus wire and/or the DLC3 branch wire when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.

CA

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.	• CAN main bus wire or connector • Junction connector • CAN junction connector • DLC3 branch wire or connector • Network gateway ECU • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

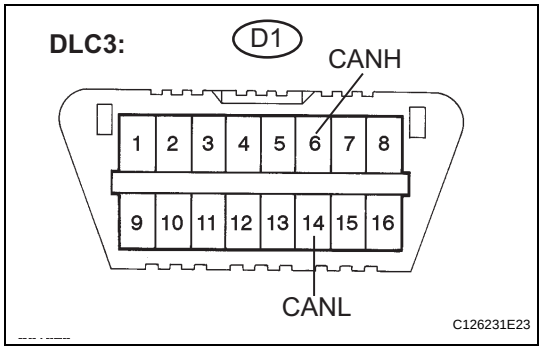
NOTICE:

- **Turn the ignition switch off before measuring the resistances of CAN bus main wires and CAN bus branch wires.**
- **After the ignition switch is turned off, check that the key reminder warning system and light reminder warning system are not in operation.**
- **Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the ignition switch, any other switches, or the doors. If any doors need to be opened in order to check connectors, open the doors and leave them open.**

HINT:

Operating the ignition switch, any switches, or any doors triggers related ECU and sensor communication with the CAN. This communication will cause the resistance value to change.

1	CHECK DLC3



(a) Turn the ignition switch off.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
D1-6 (CANH) - D1-14 (CANL)	Ignition switch off	108 to 132 Ω

Result

Result	Proceed to
108 to 132 Ω	A
132 Ω or higher	B

NOTICE:

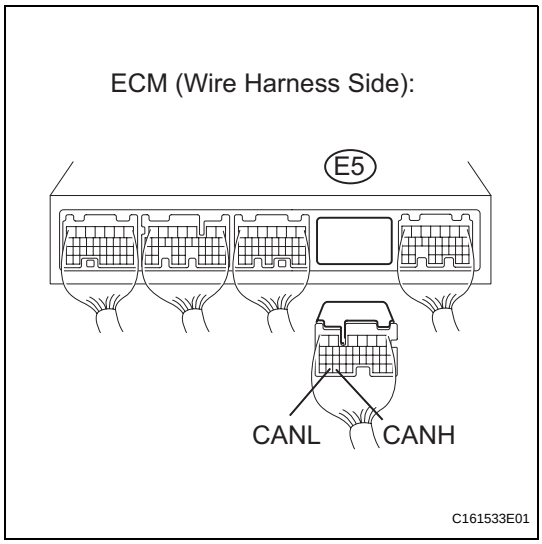
When the measured value is 133 Ω or more and a CAN communication system diagnostic trouble code is output, there may be a fault besides disconnection of the DLC3 branch wire. For that reason, troubleshooting should be performed again from "HOW TO PROCEED WITH TROUBLESHOOTING" (See page CA-7) after repairing the trouble area.

B → **REPAIR OR REPLACE DLC3 BRANCH WIRE OR CONNECTOR (CANH, CANL)**

A

2	CHECK FOR OPEN IN CAN BUS MAIN WIRE (ECM CAN MAIN BUS WIRE)

(a) Turn the ignition switch off.



(b) Disconnect the ECM connector.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

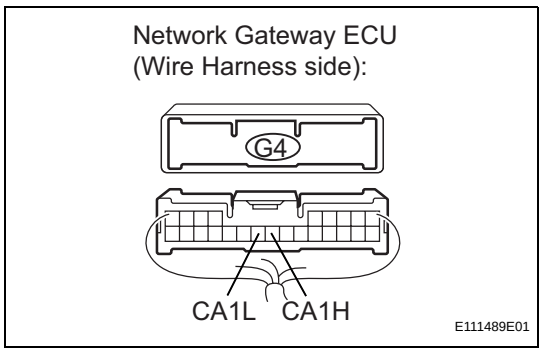
Tester Connection	Condition	Specified Condition
E5-33 (CANH) - E5-34 (CANL)	Ignition switch off	108 to 132 Ω

NG → **Go to step 3**

OK

REPLACE ECM

3 CHECK FOR OPEN IN CAN BUS MAIN WIRE (NETWORK GATEWAY ECU CAN MAIN BUS WIRE)



(a) Reconnect the ECM connector.
(b) Disconnect the network gateway ECU connector.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
G4-17 (CA1H) - G4-18 (CA1L)	Ignition switch off	108 to 132 Ω

NG → **Go to step 4**

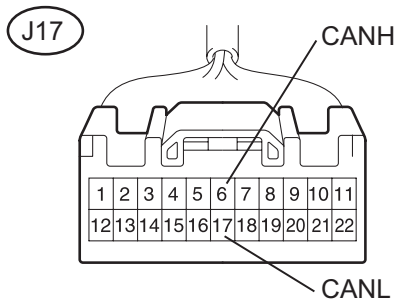
OK

REPLACE NETWORK GATEWAY ECU

4 CHECK FOR OPEN IN CAN BUS MAIN WIRE (JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

(a) Reconnect the network gateway ECU connector.
(b) Disconnect the junction connector (J17).

Front view of wire harness connector:
(to Junction Connector)



(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
J17-6 (CANH) - J17-17 (CANL)	Ignition switch off	108 to 132 Ω

Result

Result	Proceed to
OK (without VSC)	A
OK (with VSC)	B
NG	C

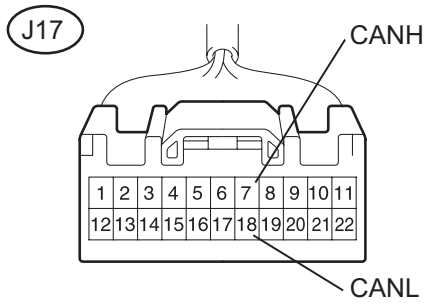
B → **Go to step 6**

C → **REPAIR OR REPLACE CAN BUS MAIN WIRE OR CONNECTOR (JUNCTION CONNECTOR - NETWORK GATEWAY ECU)**

A

5 CHECK CHECK FOR OPEN IN CANBUS MAIN WIRE (JUNCTION CONNECTOR - ECM)

Front view of wire harness connector:
(to Junction Connector)



(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
J17-7 (CANH) - J17-18 (CANL)	Ignition switch off	108 to 132 Ω

NG → **REPAIR OR REPLACE CAN BUS MAIN WIRE OR CONNECTOR (JUNCTION CONNECTOR - ECM)**

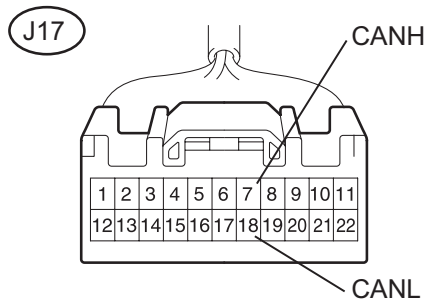
OK

REPLACE WIRING HARNESS CONNECTOR (JUNCTION CONNECTOR)

6	CHECK FOR OPEN IN CAN BUS MAIN WIRE (JUNCTION CONNECTOR -Å@CAN JUNCTION CONNECTOR)

CA

Front view of wire harness connector:
(to Junction Connector)



T

C152875E21

(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
J17-7 (CANH) - J17-18 (CANL)	Ignition switch off	108 to 132 Ω

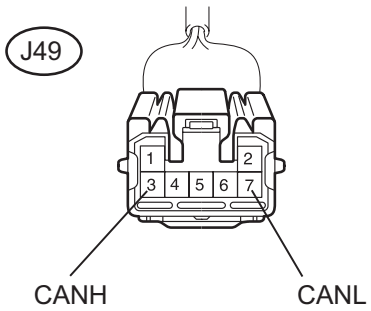
NG → **Go to step 7**

OK

REPLACE WIRING HARNESS CONNECTOR (JUNCTION CONNECTOR)

7	CHECK FOR OPEN IN CAN BUS MAIN WIRE (CAN JUNCTION CONNECTOR - JUNCTION CONNECTOR)

Front view of wire harness connector:
(to CAN Junction Connector)



C161557E01

(a) Reconnect the junction connector (J17).
(b) Disconnect the CAN junction connector (J49).
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

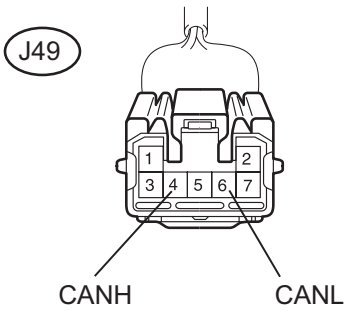
Tester Connection	Condition	Specified Condition
J49-3 (CANH) - J49-7 (CANL)	Ignition switch off	108 to 132 Ω

NG → **REPAIR OR REPLACE CAN BUS MAIN WIRE OR CONNECTOR (CAN JUNCTION CONNECTOR - JUNCTION CONNECTOR)**

OK

8	**CHECK FOR OPEN IN CAN BUS MAIN WIRE (CAN JUNCTION CONNECTOR - ECM)**

Front view of wire harness connector:
(to CAN Junction Connector)



C161557E02

(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
J49-4 (CANH) - J49-6 (CANL)	Ignition switch off	108 to 132 Ω

NG → **REPAIR OR REPLACE CAN BUS MAIN WIRE OR CONNECTOR (CAN JUNCTION CONNECTOR - ECM)**

OK

REPLACE WIRING HARNESS CONNECTOR (CAN JUNCTION CONNECTOR)

CA