

CHECK CAN BUS LINES FOR SHORT CIRCUIT (LHD, w/o LEXUS Navigation System)

CIRCUIT DESCRIPTION

There may be a short circuit between the CAN bus lines when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω .

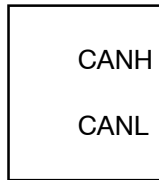
Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω .	• Short between CAN bus lines • Skid control ECU with actuator • Steering sensor • Yaw rate sensor • Suspension control ECU • ECM • Gateway ECU • Junction connector (P-CAN J/C) • Junction connector (D-CAN J/C)

WIRING DIAGRAM

LHD:

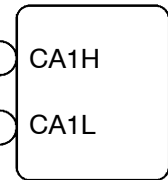
S18

Steering Sensor

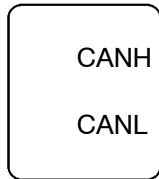


D-CAN J/C

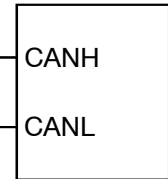
Gateway ECU



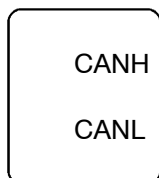
Skid Control ECU with Actuator



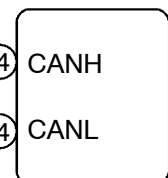
D1 DLC3



ECM

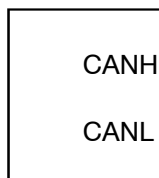


Suspension Control ECU



Y1

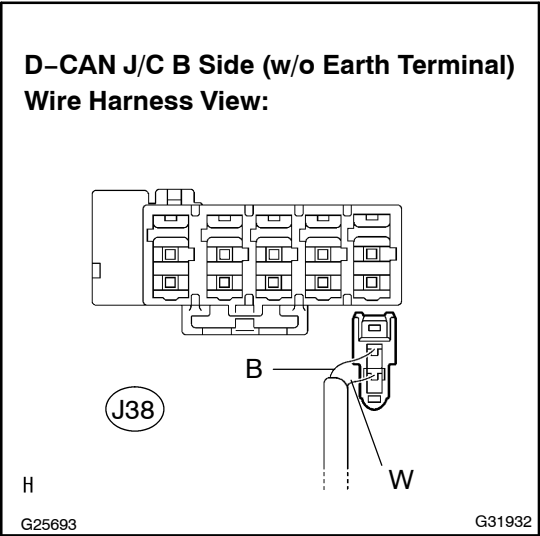
Yaw Rate Sensor



P-CAN J/C

INSPECTION PROCEDURE

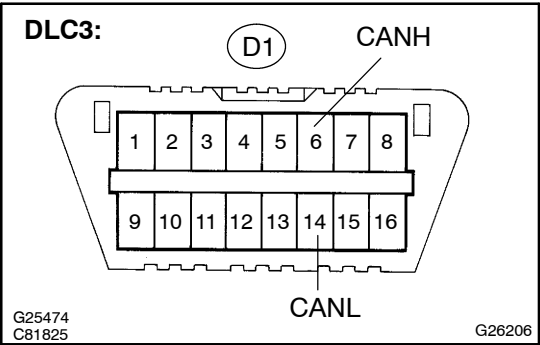
1 CHECK CAN BUS LINES FOR SHORT CIRCUIT(DLC3 SUB BUS LINE)



- (a) Turn the ignition switch to the LOCK position.
- (b) Disconnect the DLC3 sub bus line connector (J38) from the D-CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**



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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	1 MΩ or more

NG

REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR(CAN-H, CAN-L)

OK

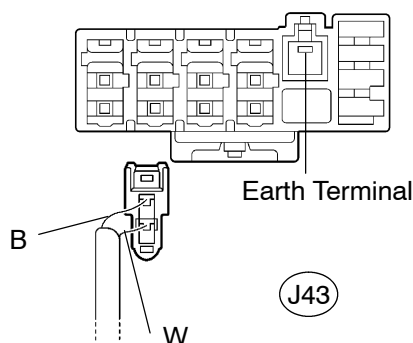
2 CONNECT CONNECTOR

- (a) Reconnect the DLC3 sub bus line connector (J38) to the D-CAN J/C B side (w/o earth terminal).



3 CHECK CAN BUS LINES FOR SHORT CIRCUIT(CAN BUSES TO P-CAN J/C)

P-CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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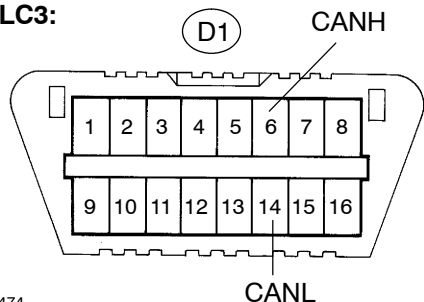
G31933

- (a) Disconnect the CAN main bus line connector (J43) from the P-CAN J/C A side (w/ earth terminal).

NOTICE:

- Before disconnecting the connector, make a note of where it is connected.
- Reconnect the connector to its original position.

DLC3:

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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	108 to 132 Ω

OK

Go to step 26

NG

4 CONNECT CONNECTOR

- (a) Reconnect the CAN main bus line connector (J43) to the P-CAN J/C A side (w/ earth terminal).



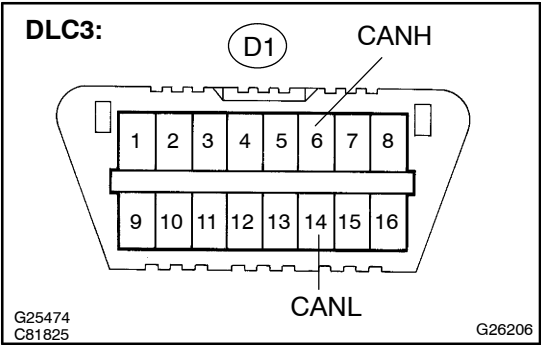
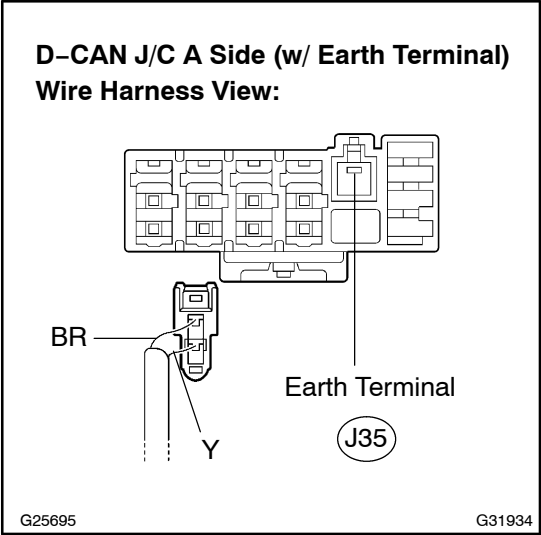
5 CHECK CAN BUS LINES FOR SHORT CIRCUIT(SUSPENSION CONTROL ECU SUB BUS LINE)

NOTICE:
For vehicles without electronic modulated air suspension, go to step 7.

- (a) Disconnect the suspension control ECU sub bus line connector (J35) from the D-CAN J/C A side (w/ earth terminal).

NOTICE:

- Before disconnecting the connector, make a note of where it is connected.
- Reconnect the connector to its original position.



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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

Go to step 16

NG

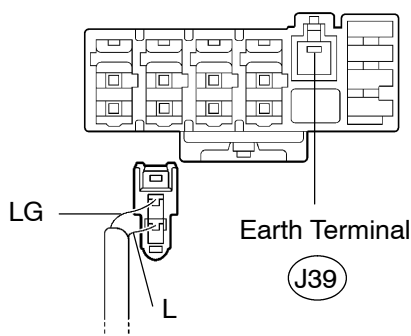
6 CONNECT CONNECTOR

- (a) Reconnect the suspension control ECU sub bus line connector (J35) to the D-CAN J/C A side (w/ earth terminal).



7 CHECK CAN BUS LINES FOR SHORT CIRCUIT(GATEWAY ECU SUB BUS LINE)

D-CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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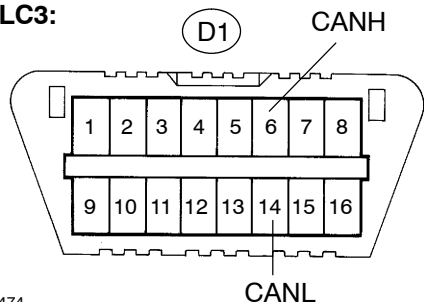
G31934

- (a) Disconnect the gateway ECU sub bus line connector (J39) from the D-CAN J/C A side (w/ earth terminal).

NOTICE:

- Before disconnecting the connector, make a note of where it is connected.
- Reconnect the connector to its original position.

DLC3:

G25474
C81825

G26206

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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

Go to step 18

NG

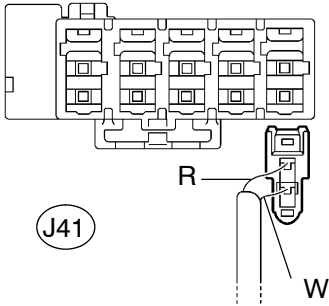
8 CONNECT CONNECTOR

- (a) Reconnect the gateway ECU sub bus line connector (J39) to the D-CAN J/C A side (w/ earth terminal).



9 CHECK CAN BUS LINES FOR SHORT CIRCUIT(ECM SUB BUS LINE)

D-CAN J/C B Side (w/o Earth Terminal)
Wire Harness View:

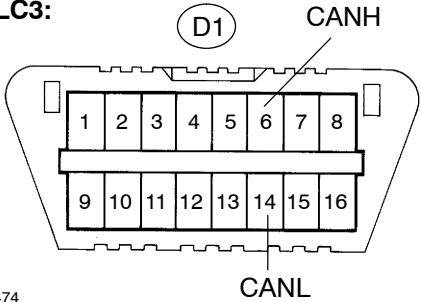


- (a) Disconnect the ECM sub bus line connector (J41) from the D-CAN J/C B side (w/o earth terminal).

NOTICE:

- Before disconnecting the connector, make a note of where it is connected.
- Reconnect the connector to its original position.

DLC3:



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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

Go to step 20

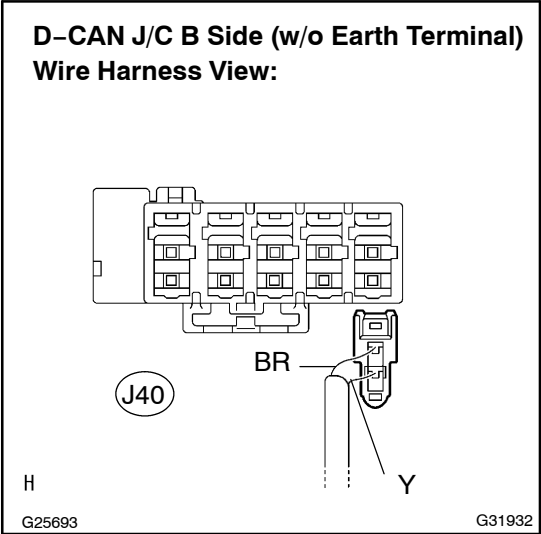
NG

10 CONNECT CONNECTOR

- (a) Reconnect the ECM sub bus line connector (J41) to the D-CAN J/C B side (w/o earth terminal).

11

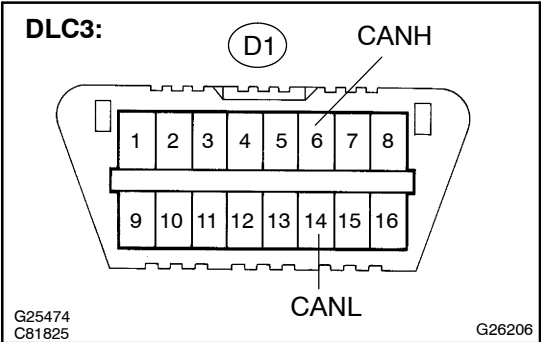
CHECK CAN BUS LINES FOR SHORT CIRCUIT(SKID CONTROL ECU SUB BUS LINE)



- (a) Disconnect the skid control ECU sub bus line connector (J40) from the D-CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**



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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

Go to step 22

NG

12

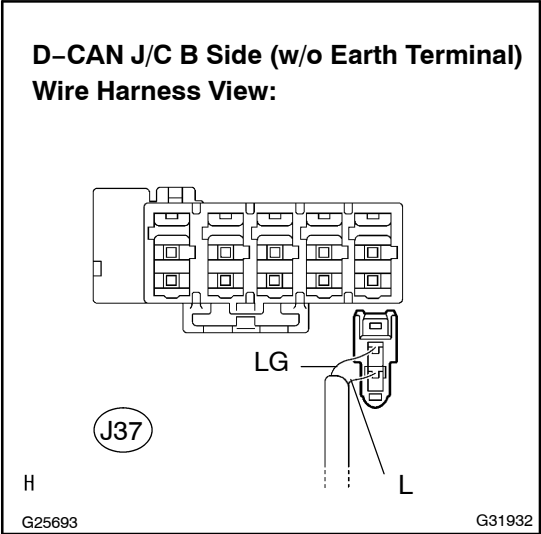
CONNECT CONNECTOR

- (a) Reconnect the skid control ECU sub bus line connector (J40) to the D-CAN J/C B side (w/o earth terminal).



13

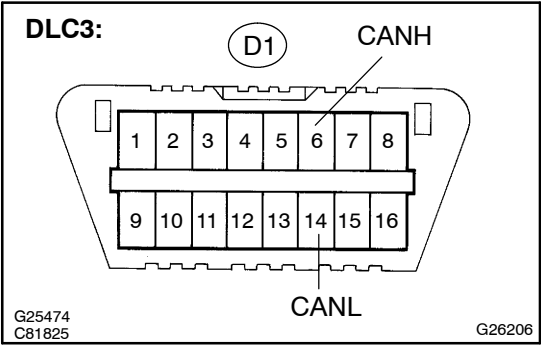
CHECK CAN BUS LINES FOR SHORT CIRCUIT(STEERING SENSOR SUB BUS LINE)



- (a) Disconnect the steering sensor sub bus line connector (J37) from the D-CAN J/C B side (w/o earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**



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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

Go to step 24

NG

14

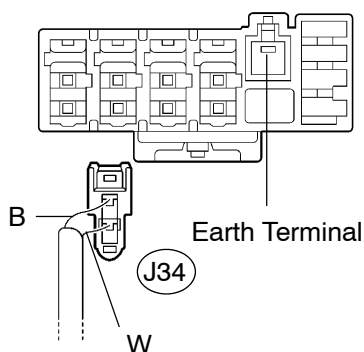
CONNECT CONNECTOR

- (a) Reconnect the steering sensor sub bus line connector (J37) to the D-CAN J/C B side (w/o earth terminal).



15 CHECK CAN BUS LINES FOR SHORT CIRCUIT(D-CAN J/C)

D-CAN J/C A Side (w/ Earth Terminal) Wire Harness View:



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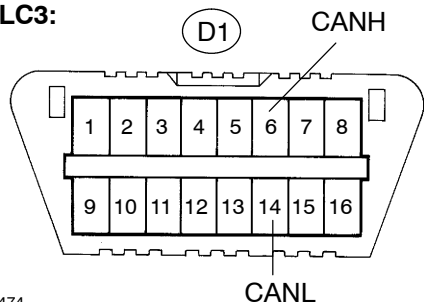
G31934

- (a) Disconnect the CAN main bus line connector (J34) from the D-CAN J/C A side (w/ earth terminal).

NOTICE:

- Before disconnecting the connector, make a note of where it is connected.
- Reconnect the connector to its original position.

DLC3:

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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	108 to 132 Ω

NG

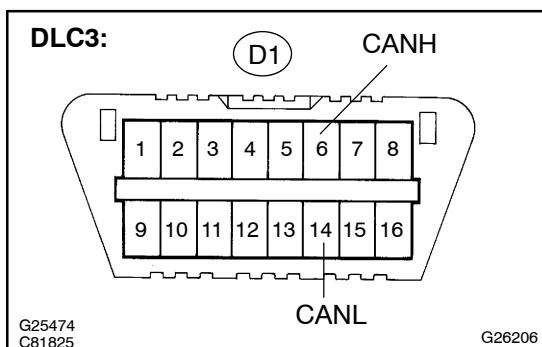
REPLACE JUNCTION CONNECTOR (D-CAN J/C)

OK

REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (D-CAN J/C - P-CAN J/C)

16 CONNECT CONNECTOR

- (a) Reconnect the suspension control ECU sub bus line connector (J35) to the D-CAN J/C A side (w/ earth terminal).

**17 CHECK CAN BUS LINES FOR SHORT CIRCUIT(SUSPENSION CONTROL ECU SUB BUS LINE)**

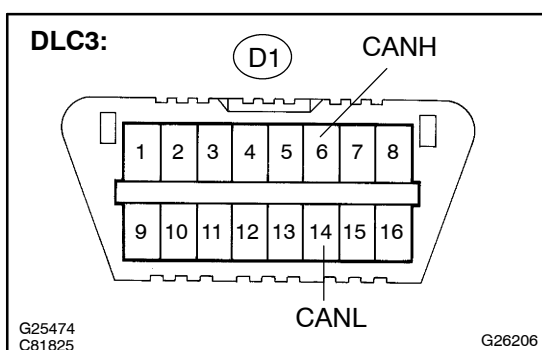
- (a) Disconnect the suspension control ECU connector (A24).
 (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK**REPLACE SUSPENSION CONTROL ECU
(SEE PAGE 25-20)****NG****REPAIR OR REPLACE SUSPENSION CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)****18 CONNECT CONNECTOR**

- (a) Reconnect the gateway ECU sub bus line connector (J39) to the D-CAN J/C A side (w/ earth terminal).

**19 CHECK CAN BUS LINES FOR SHORT CIRCUIT(GATEWAY ECU SUB BUS LINE)**

- (a) Disconnect the gateway ECU connector (G1).
 (b) Measure the resistance according to the value(s) in the table below.

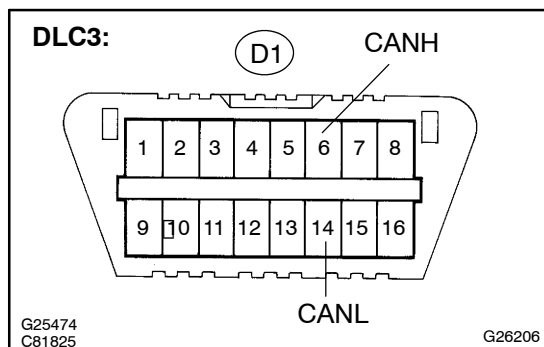
Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK**REPLACE GATEWAY ECU****NG****REPAIR OR REPLACE GATEWAY ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

20 CONNECT CONNECTOR

- (a) Reconnect the ECM sub bus line connector (J41) to the D-CAN J/CB side (w/o earth terminal).

**21 CHECK CAN BUS LINES FOR SHORT CIRCUIT (ECM SUB BUS LINE)**

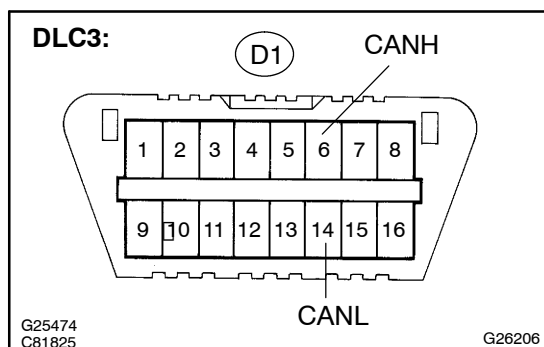
- (a) Disconnect the ECM connector (E4).
 (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

**REPLACE ECM (SEE PAGE 10-21)****NG****REPAIR OR REPLACE ECM SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)****22 CONNECT CONNECTOR**

- (a) Reconnect the skid control ECU sub bus line connector (J40) to the D-CAN J/CB side (w/earth terminal).

**23 CHECK CAN BUS LINES FOR SHORT CIRCUIT (SKID CONTROL ECU SUB BUS LINE)**

- (a) Disconnect the skid control ECU connector (S48).
 (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

**REPLACE SKID CONTROL ECU WITH ACTUATOR (SEE PAGE 32-53)****NG****REPAIR OR REPLACE SKID CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)**

24

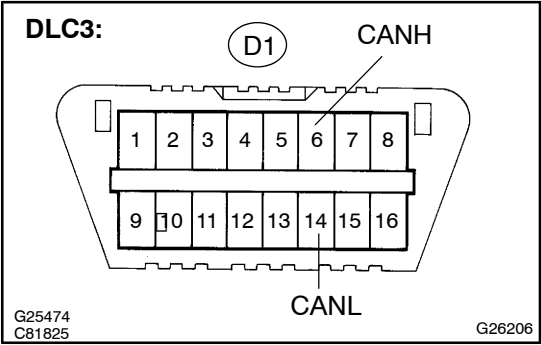
CONNECT CONNECTOR

- (a) Reconnect the steering sensor sub bus line connector (J37) to the D-CAN/CB side (w/o earth terminal).



25

CHECK CAN BUS LINES FOR SHORT CIRCUIT (STEERING SENSOR SUB BUS LINE)



- (a) Disconnect the steering sensor connector (S18).
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

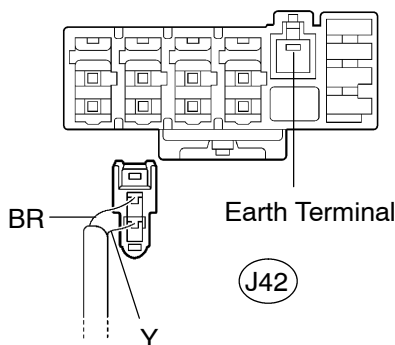
REPLACE STEERING SENSOR
(SEE PAGE 32-65)

NG

REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

26 CONNECT CONNECTOR

- (a) Reconnect the CAN main bus line connector (J43) to the P-CAN J/C A side (w/ earth terminal).

**P-CAN J/C A Side (w/ Earth Terminal)
Wire Harness View:**

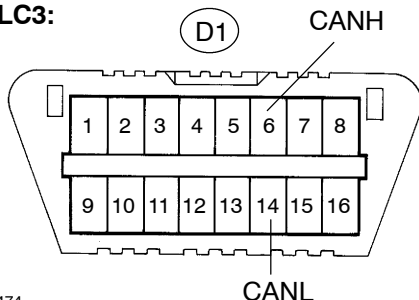
G25695

G31933

- (a) Disconnect the yaw rate sensor sub bus line connector (J42) from the P-CAN J/C A side (w/ earth terminal).

NOTICE:

- **Before disconnecting the connector, make a note of where it is connected.**
- **Reconnect the connector to its original position.**

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

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) – D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

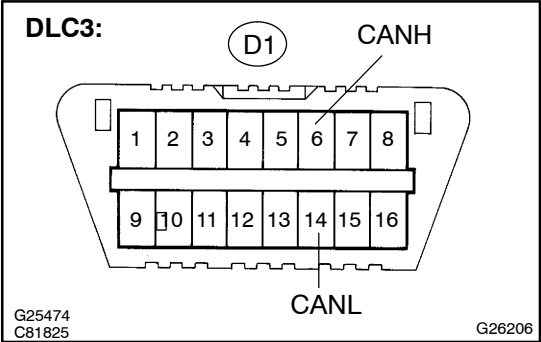
NG**REPLACE JUNCTION CONNECTOR (P-CAN J/C)****OK****28 CONNECT CONNECTOR**

- (a) Reconnect the yaw rate sensor sub bus line connector (J42) to the P-CAN J/C A side (w/ earth terminal).



29

CHECK CAN BUS LINES FOR SHORT CIRCUIT (YAW RATE SENSOR SUB BUS LINE)



- (a) Disconnect the yaw rate sensor connector (Y1).
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified value
D1-6 (CANH) - D1-14 (CANL)	Ignition Switch OFF	54 to 69 Ω

OK

REPLACE YAW RATE SENSOR
(SEE PAGE 32-63)

NG

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)