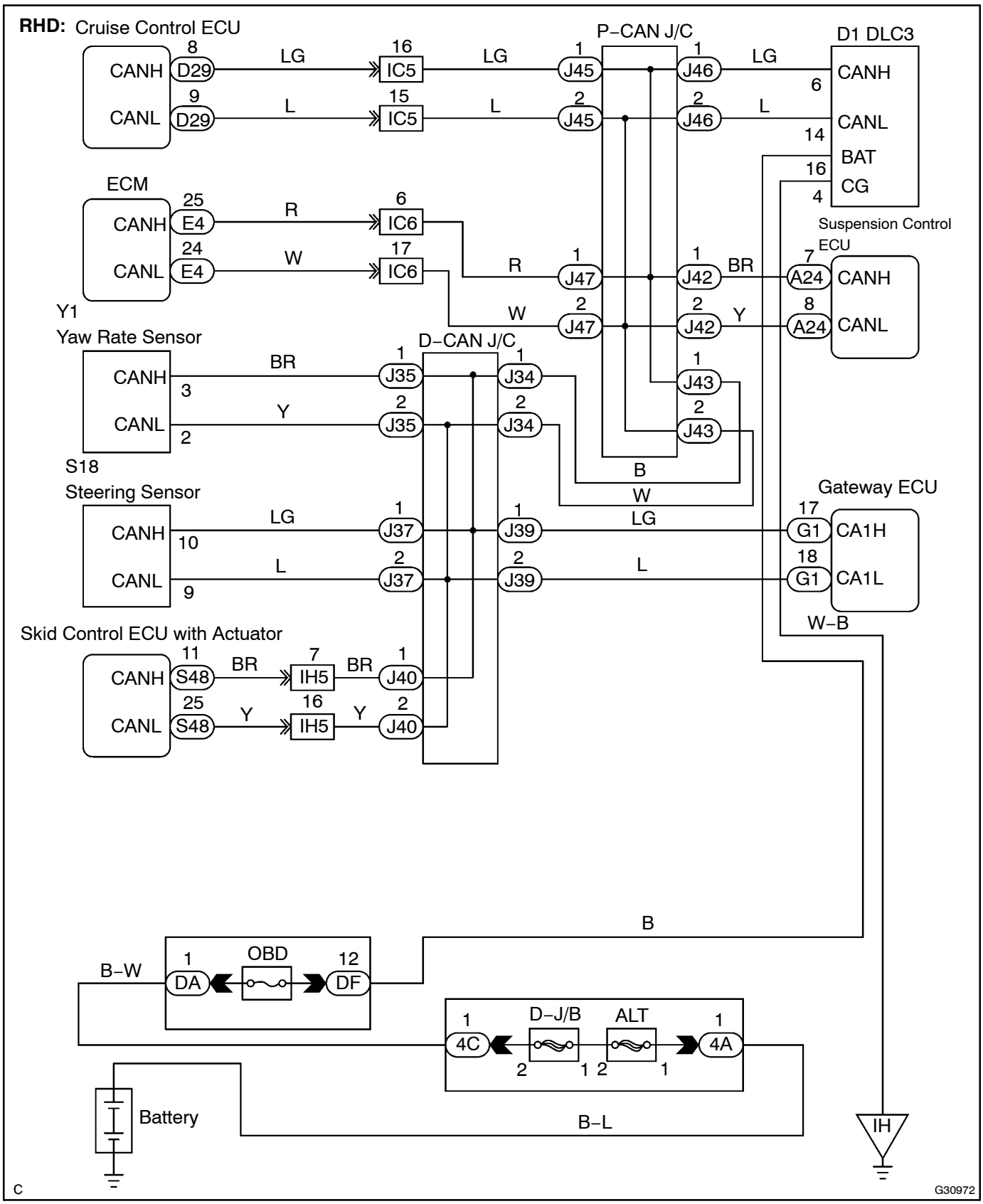
# CHECK CAN BUS LINES FOR SHORT CIRCUIT (RHD, w/o LEXUS Navigation System)

## 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<br>• Cruise control ECU<br>• Skid control ECU with actuator<br>• Steering sensor<br>• Yaw rate sensor<br>• Suspension control ECU<br>• ECM<br>• Gateway ECU<br>• Junction connector (P–CAN J/C)<br>• Junction connector (D–CAN J/C) |

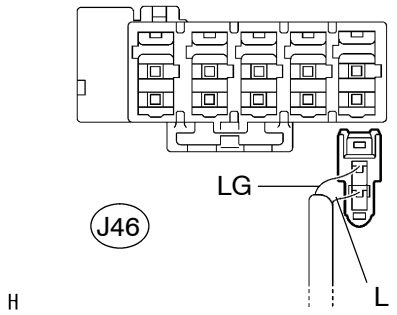
# WIRING DIAGRAM



# INSPECTION PROCEDURE

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

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



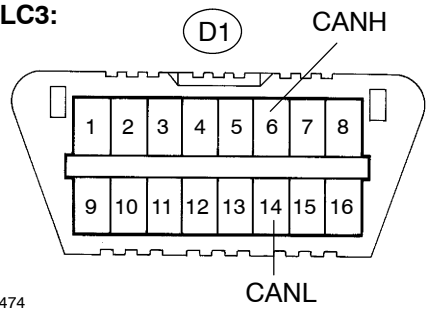

G25693 G31932

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the DLC3 sub bus line connector (J46) 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:**




G25474 C81825 G26206

(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)**

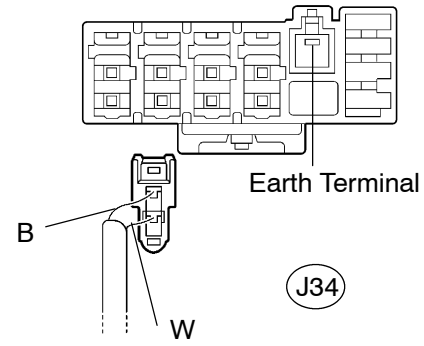
**OK**

| 2 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the DLC3 sub bus line connector (J46) to the P–CAN J/C A side (w/ earth terminal).

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

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



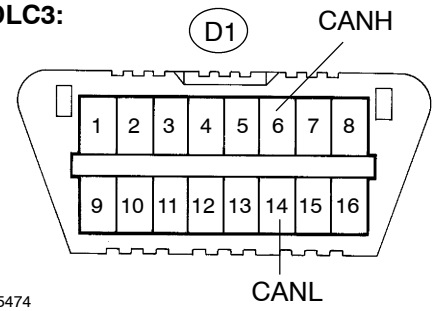

G25695 G31933

(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:**




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 | 108 to 132 Ω |

**OK** → **Go to step 18**

**NG**

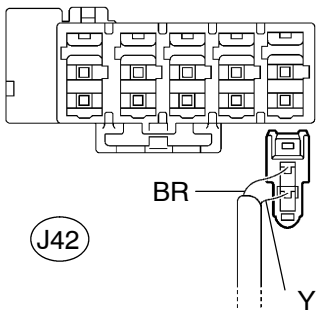
| 4 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the CAN main bus line connector (J34) to the D–CAN J/C A side (w/ earth terminal).

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

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

**P–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:**

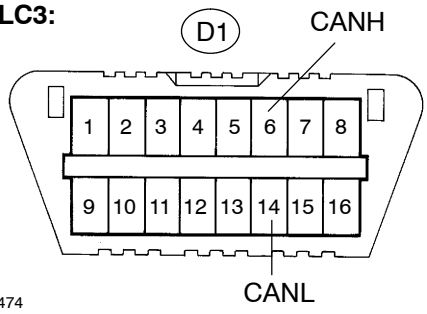



G31061 G32393

(a) Disconnect the suspension control ECU sub bus line connector (J42) from the P–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:**




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 12**

**NG**

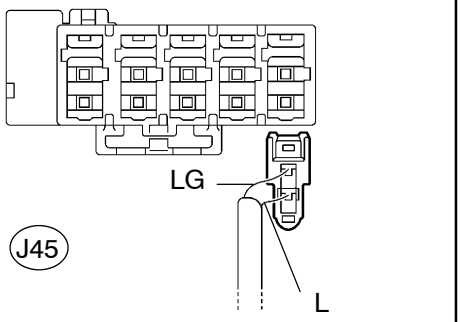
| 6 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the suspension control ECU sub bus line connector (J42) to the P–CAN J/C B side (w/o earth terminal).

| 7 | CHECK CAN BUS LINES FOR SHORT CIRCUIT(CRUISE CONTROL ECU SUB BUS LINE) |
|---|---|

**NOTICE:**
**For vehicles without dynamic laser cruise control, go to step 9.**

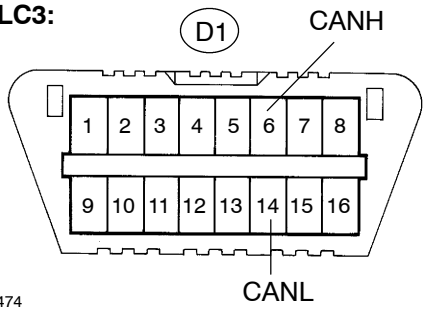
**P–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:**




(a) Disconnect the cruise control ECU sub bus line connector (J45) from the P–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 14**

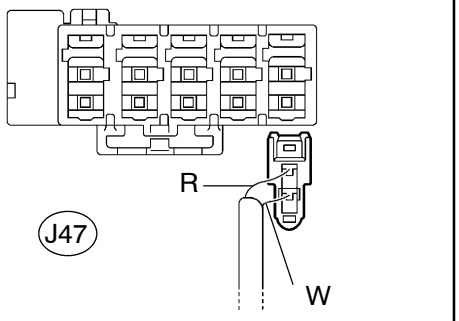
**NG**

| 8 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the cruise control ECU sub bus line connector (J45) to the P–CAN J/C B side (w/o earth terminal).

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

**P–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:**

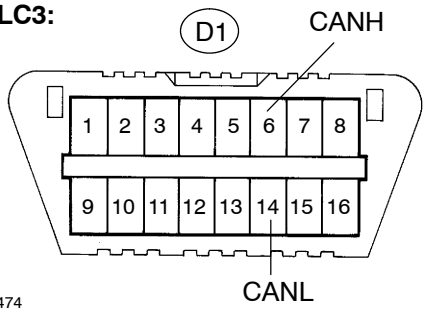



(a) Disconnect the ECM sub bus line connector (J47) from the P–CAN J/C B side (w/o earth terminal).

**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 16 |
|---|---|

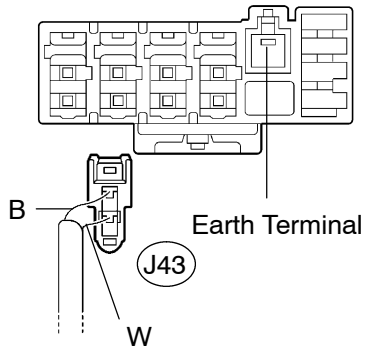
**NG**

| 10 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the ECM sub bus line connector (J47) to the P–CAN J/C B side (w/o earth terminal).

| 11 | CHECK CAN BUS LINES FOR SHORT CIRCUIT(D–CAN J/C) |
|---|---|

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



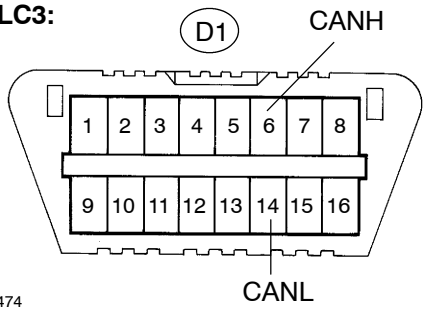

G25695 G31934

(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:**




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 | 108 to 132 Ω |

**NG** → **REPLACE JUNCTION CONNECTOR (P–CAN J/C)**

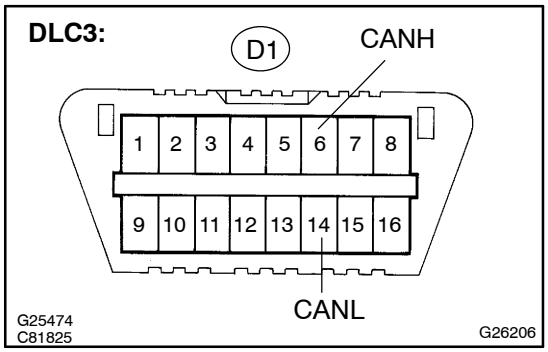
**OK**

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

| 12 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the suspension control ECU sub bus line connector (J42) to the P–CAN J/C B side (w/o earth terminal).

| 13 | 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)

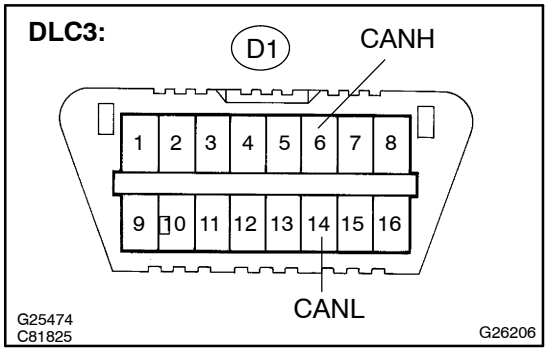
NG

REPAIR OR REPLACE SUSPENSION CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)

| 14 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the cruise control ECU sub bus line connector (J45) to the P–CAN J/C B side (w/o earth terminal).

| 15 | CHECK CAN BUS LINES FOR SHORT CIRCUIT (CRUISE CONTROL ECU SUB BUS LINE) |
|---|---|




(a) Disconnect the cruise control ECU connector (D29).
(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 → **CHECK CRUISE CONTROL ECU ASSY (SEE PAGE 82–2)**

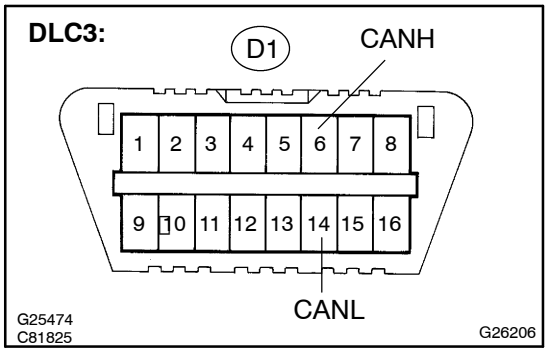
OK

**REPAIR OR REPLACE CRUISE CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)**

| 16 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the ECM sub bus line connector (J47) to the P–CAN J/C B side (w/o earth terminal).

| 17 | 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 |

OK → **REPLACE ECM (SEE PAGE 10–21)**

NG

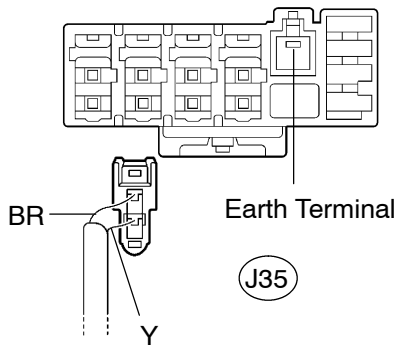
**REPAIR OR REPLACE ECM SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)**

| 18 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the CAN main bus line connector (J34) to the D–CAN J/C A side (w/ earth terminal).

| 19 | CHECK CAN BUS LINES FOR SHORT CIRCUIT(YAW RATE SENSOR SUB BUS LINE) |
|---|---|

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



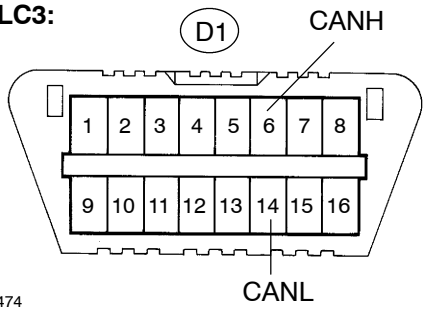

G25695 G31933

(a) Disconnect the yaw rate sensor 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.**

**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 |

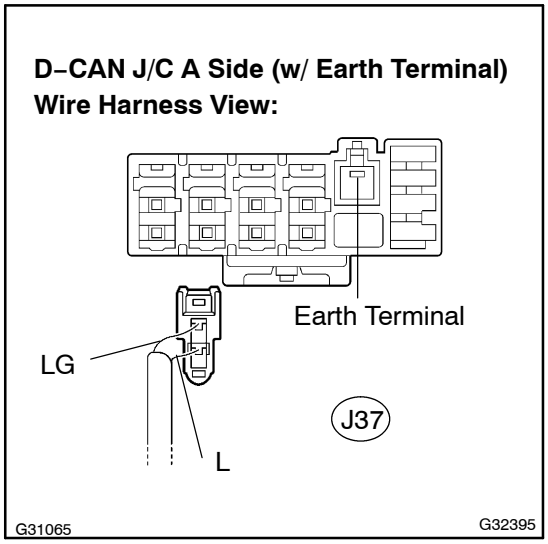
| OK | Go to step 26 |
|---|---|

**NG**

| 20 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the yaw rate sensor sub bus line connector (J35) to the D–CAN J/C A side (w/ earth terminal).

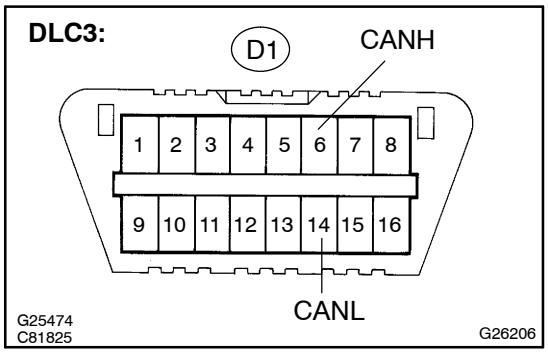
| 21 | CHECK CAN BUS LINES FOR SHORT CIRCUIT(STEERING SENSOR SUB BUS LINE) |
|---|---|




(a) Disconnect the steering sensor sub bus line connector (J37) from the D–CAN J/C B side (w/ 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 30 |
|---|---|

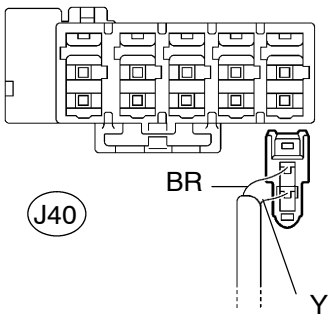
**NG**

| 22 | CONNECT CONNECTOR |
|---|---|

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

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

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

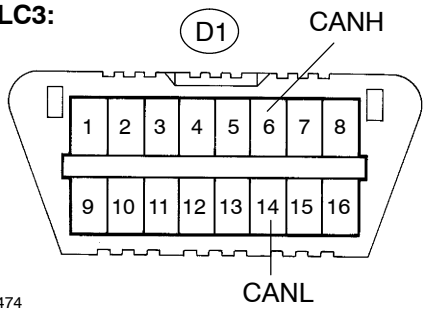



(a) Disconnect the skid control ECU sub bus line connector (J40) from the D–CAN J/C B side (w/o earth terminal).

**NOTICE:**

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

**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 28 |
|---|---|

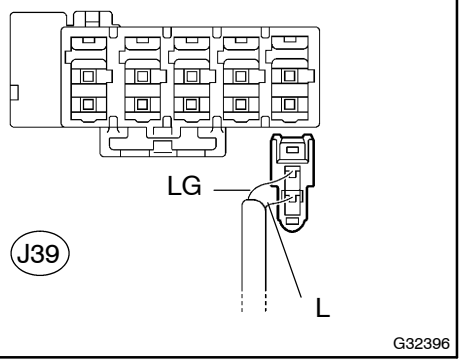
**NG**

| 24 | 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).

| 25 | CHECK CAN BUS LINES FOR SHORT CIRCUIT(GATEWAY ECU SUB BUS LINE) |
|---|---|

**P–CAN J/C B Side (w/o Earth Terminal) Wire Harness View:**

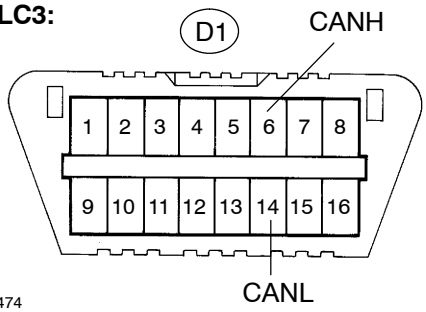



(a) Disconnect the gateway ECU sub bus line connector (J39) from the D–CAN J/C B side (w/o earth terminal).

**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 32**

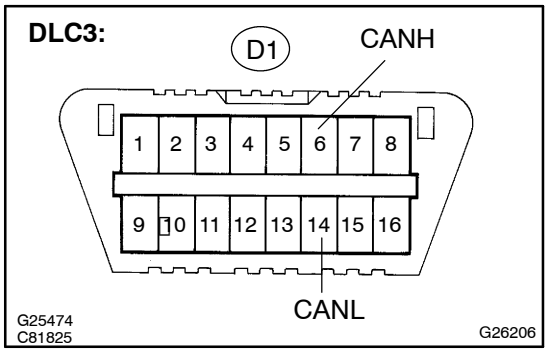
**NG**

**REPLACE JUNCTION CONNECTOR (D–CAN J/C)**

| 26 | CONNECT CONNECTOR |
|---|---|

(a) Reconnect the yaw rate sensor sub bus line connector (J35) to the D–CAN J/C A side (w/ earth terminal).

| 27 | 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) |
|---|---|

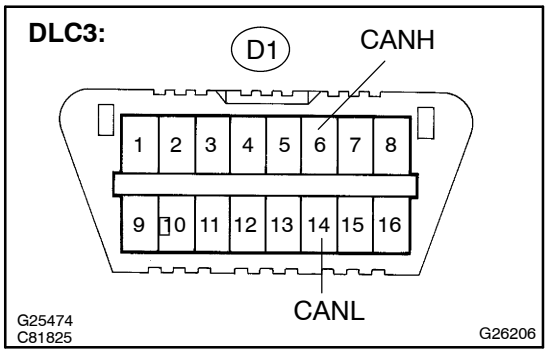
NG

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

| 28 | 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).

| 29 | 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 |

| OK | REPLACE SKID CONTROL ECU WITH ACTUATOR (SEE PAGE 32–53) |
|---|---|

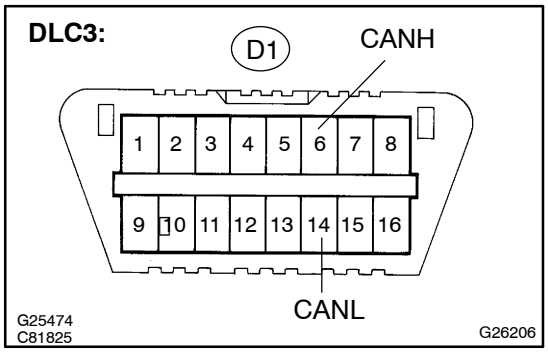
NG

**REPAIR OR REPLACE SKID CONTROL ECU SUB BUS LINE OR CONNECTOR (CAN–H, CAN–L)**

| 30 | CONNECT CONNECTOR |
|---|---|

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

| 31 | 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)**

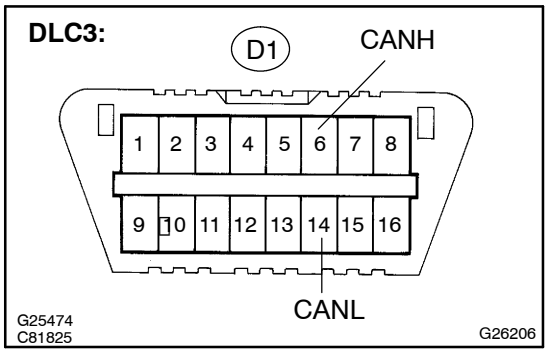
**NG**

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

| 32 | CONNECT CONNECTOR |
|---|---|

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

| 33 | 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)**