

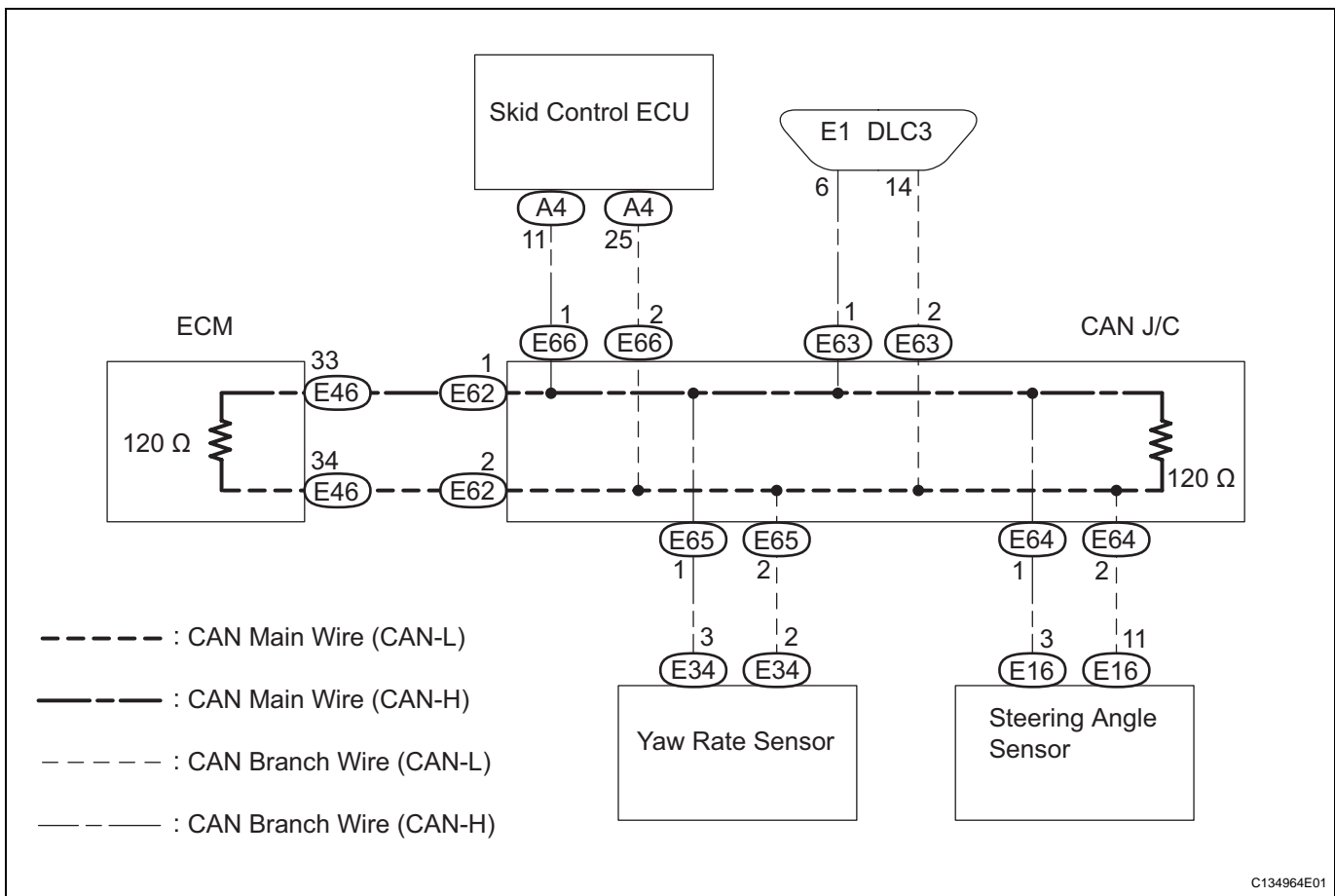
## Short to B+ in CAN Bus Line

### DESCRIPTION

A short to +B is suspected in the CAN bus line when there is continuity between terminals 16 (BAT) and 6 (CANH) or terminals 16 (BAT) and 14 (CANL) of the DLC3.

Symptom	Trouble Area
There is continuity between terminals 16 (BAT) and 6 (CANH) or 16 (BAT) and 14 (CANL) of the DLC3.	<ul style="list-style-type: none"> <li>• Short to +B in CAN bus line</li> <li>• ECM</li> <li>• Skid control ECU</li> <li>• Yaw rate sensor</li> <li>• Steering angle sensor</li> </ul>

### WIRING DIAGRAM



### INSPECTION PROCEDURE

#### NOTICE:

- Turn the ignition switch off before measuring the resistances of the CAN main wire and the CAN branch wire.
- After the ignition switch is turned off, check that the key reminder warning system is 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 doors need to be opened in order to check connectors, open the doors and leave them open.

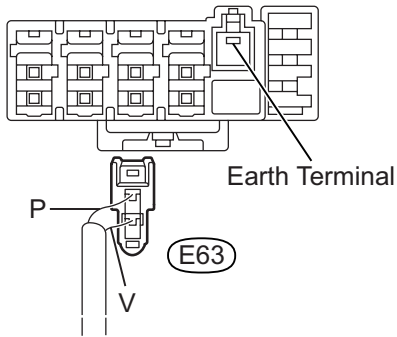
#### HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

**1 CHECK CAN BUS LINE FOR SHORT TO +B (DLC3 BRANCH WIRE)**

CAN J/C “A” Side (w/ Earth Terminal):

Wire Harness Side:



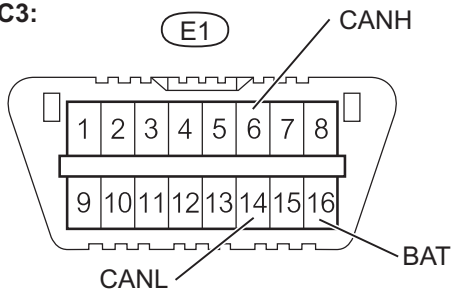
C133849E02

- (a) Turn the ignition switch OFF.  
 (b) Disconnect the E63 DLC3 branch wire connector.

**NOTICE:**

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

DLC3:



C118856E46

- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 $\Omega$ or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 $\Omega$ or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 $\Omega$	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 $\Omega$	NG

NG

**REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CAN-H, CAN-L)**

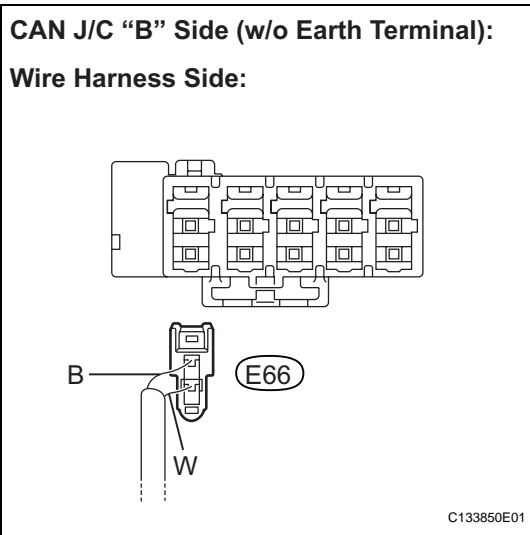
OK

**2 CONNECT CONNECTOR**

- (a) Reconnect the DLC3 branch wire connector.

NEXT

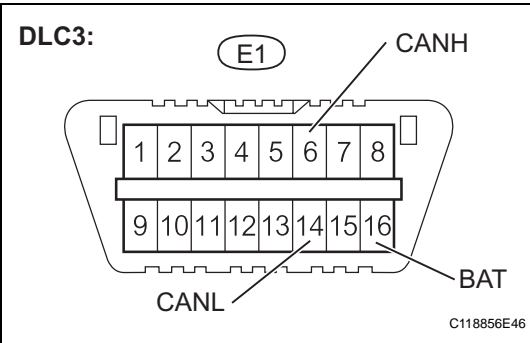
**3 CHECK CAN BUS LINE FOR SHORT TO +B (SKID CONTROL ECU BRANCH WIRE)**



- (a) Turn the ignition switch OFF.
- (b) Disconnect the E66 skid control ECU branch wire connector.

**NOTICE:**

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



- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

**OK** → **Go to step 10**

**NG**

**4 CONNECT CONNECTOR**

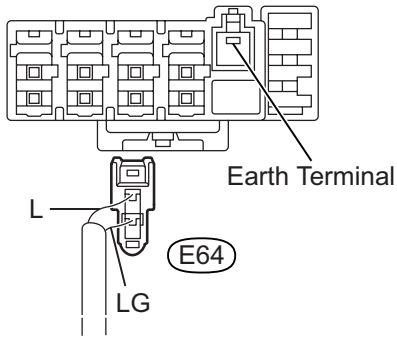
- (a) Reconnect the skid control ECU branch wire connector.

**NEXT**

## 5 CHECK CAN BUS LINE FOR SHORT TO +B (YAW RATE SENSOR BRANCH WIRE)

CAN J/C “A” Side (w/ Earth Terminal):

Wire Harness Side:



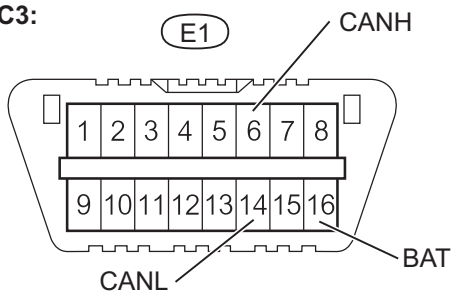
C133849E03

- (a) Turn the ignition switch OFF.
- (b) Disconnect the E64 yaw rate sensor branch wire connector.

**NOTICE:**

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

DLC3:



C118856E46

- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 $\Omega$ or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 $\Omega$ or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 $\Omega$	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 $\Omega$	NG

OK

Go to step 12

NG

## 6 CONNECT CONNECTOR

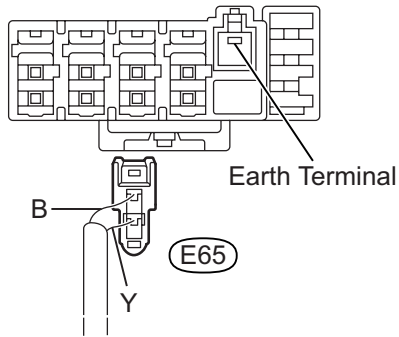
- (a) Reconnect the yaw rate sensor branch wire connector.

NEXT

**7 CHECK CAN BUS LINE FOR SHORT TO +B (STEERING ANGLE SENSOR BRANCH WIRE)**

CAN J/C “A” Side (w/ Earth Terminal):

Wire Harness Side:



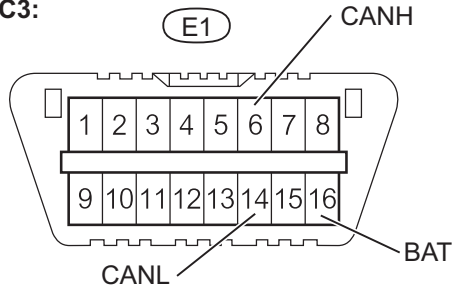
C133849E04

- (a) Turn the ignition switch OFF.
- (b) Disconnect the E65 steering angle sensor branch wire connector.

**NOTICE:**

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

DLC3:



C118856E46

- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

OK → Go to step 14

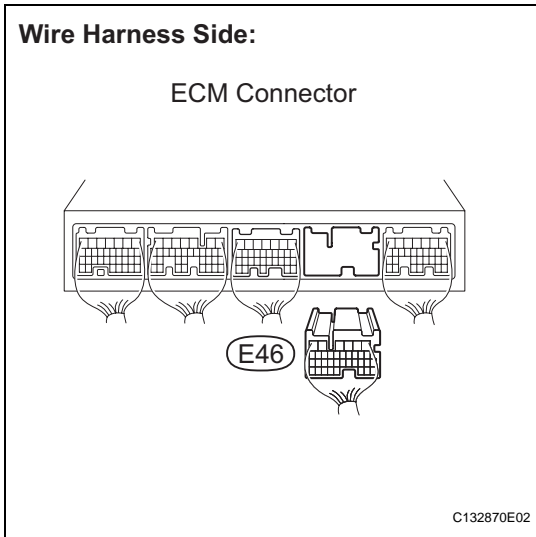
NG

**8 CONNECT CONNECTOR**

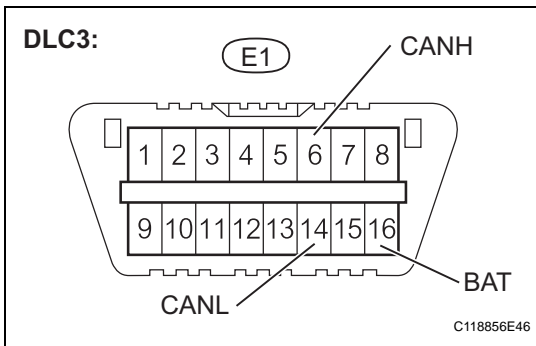
- (a) Reconnect the steering angle sensor branch wire connector.

NEXT

**9 CHECK CAN BUS LINE FOR SHORT TO +B (ECM MAIN WIRE)**



- (a) Turn the ignition switch OFF.
- (b) Disconnect the E46 ECM connector.



- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

OK → REPLACE ECM

NG

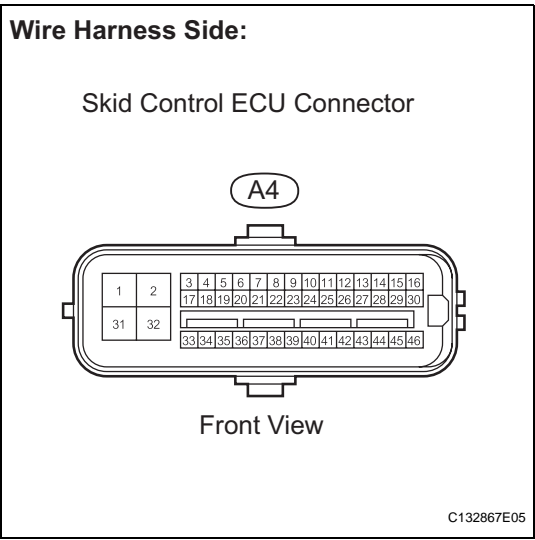
**REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (ECM - CAN J/C (CAN-H, CAN-L))**

**10 CONNECT CONNECTOR**

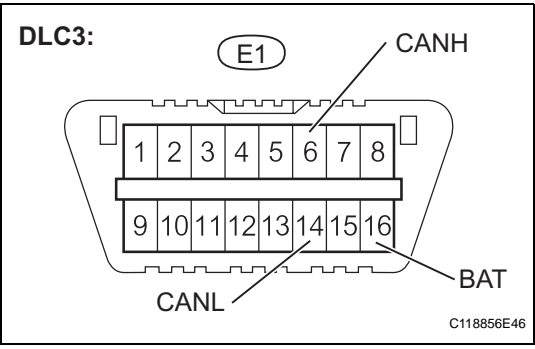
- (a) Reconnect the skid control ECU branch wire connector.

NEXT

**11 CHECK CAN BUS LINE FOR SHORT TO +B (SKID CONTROL ECU BRANCH WIRE)**



- (a) Turn the ignition switch OFF.
- (b) Disconnect the A4 skid control ECU connector.



- (c) Measure the resistance.
- Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

**OK** → **REPLACE MASTER CYLINDER SOLENOID**

**NG**

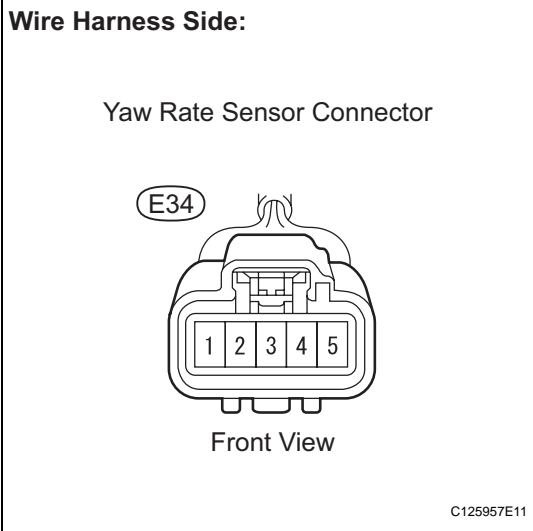
**REPAIR OR REPLACE SKID CONTROL ECU BRANCH LINE OR CONNECTOR (CAN-H, CAN-L)**

**12 CONNECT CONNECTOR**

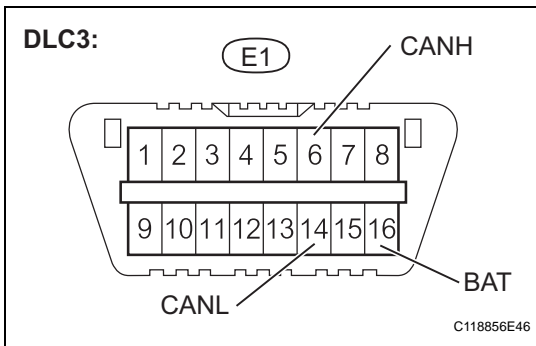
- (a) Reconnect the yaw rate sensor branch wire connector.

**NEXT**

**13 CHECK CAN BUS LINE FOR SHORT TO +B (YAW RATE SENSOR BRANCH WIRE)**



- (a) Turn the ignition switch OFF.
- (b) Disconnect the E34 yaw rate sensor connector.



- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

**OK** → **REPLACE YAW RATE SENSOR**

**NG**

**REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO YAW RATE SENSOR (CAN-H, CAN-L)**

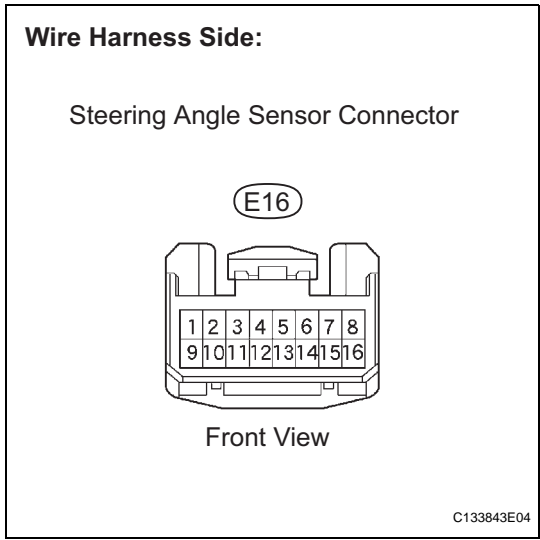
**14 CONNECT CONNECTOR**

- (a) Reconnect the steering angle sensor branch wire connector.

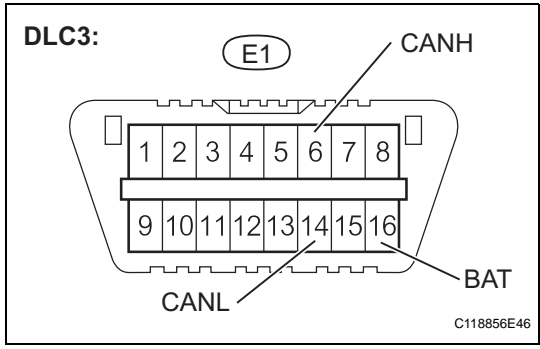
**NEXT**



**15 CHECK CAN BUS LINE FOR SHORT TO +B (STEERING ANGLE SENSOR BRANCH WIRE)**



- (a) Turn the ignition switch OFF.
- (b) Disconnect the E16 steering angle sensor connector.



- (c) Measure the resistance.

**Result**

Tester Connection	Condition	Specified Condition	Proceed to
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	1 Ω or more	OK
E1-6 (CANH) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG
E1-14 (CANL) - E1-16 (BAT)	Ignition switch OFF	Below 1 Ω	NG

**OK** → **REPLACE STEERING ANGLE SENSOR**

**NG**

**REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO STEERING ANGLE SENSOR (CAN-H, CAN-L)**