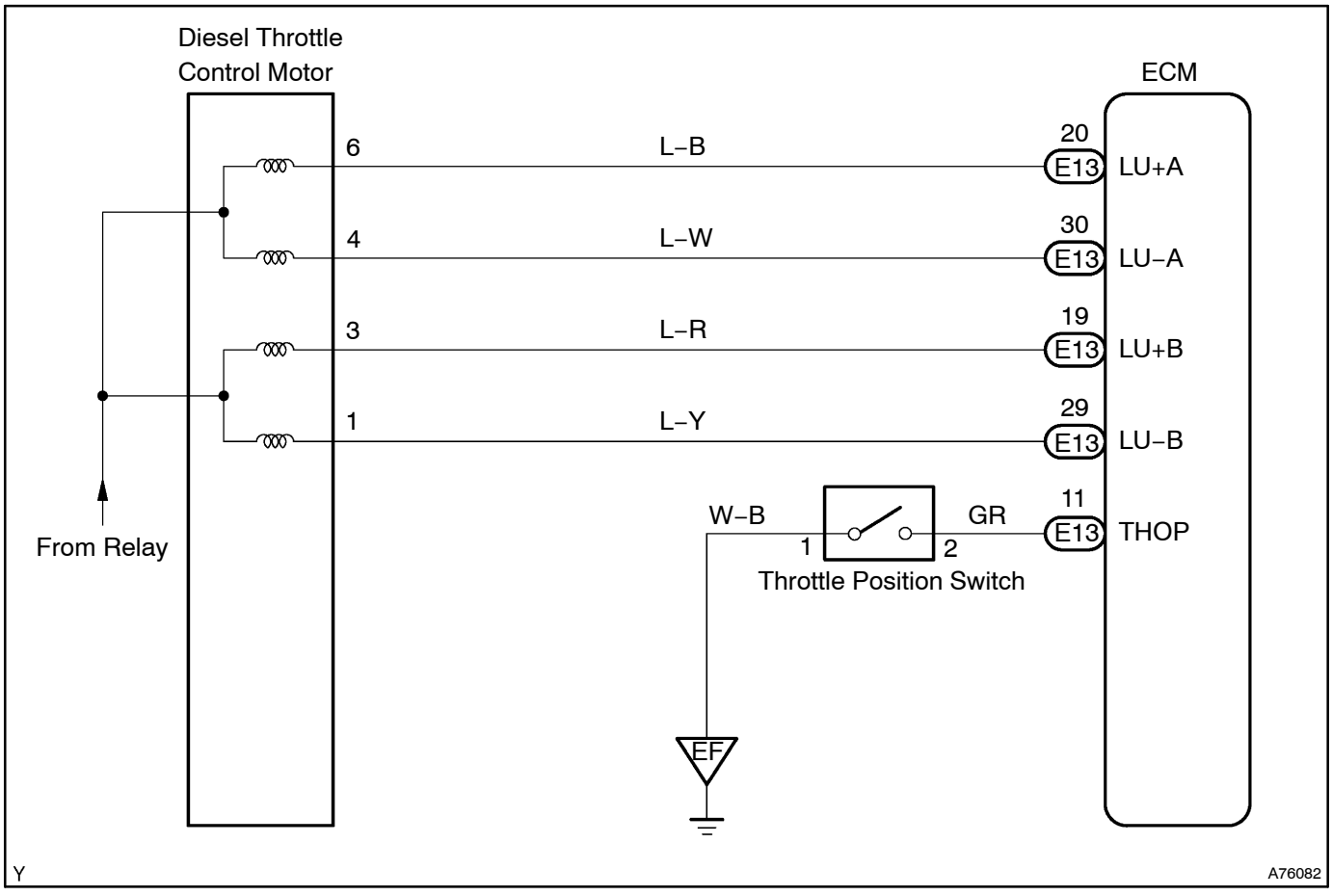
DTC	15	THROTTLE MOTOR CIRCUIT MALFUNCTION

CIRCUIT DESCRIPTION

Throttle control motor is operated by the ECM and it opens and closes the throttle valve.
The fully opening of the throttle valve is detected by the throttle fully open position switch which is mounted on the throttle body.
If this DTC is stored, the ECM shuts down the power for the throttle control motor.

DTC No.	DTC Detection Condition	Trouble Area
15	Open or short in throttle control motor circuit	• Open or short in throttle control motor circuit • Throttle control motor • Throttle valve • Throttle drive gear • Throttle body • ECM
	Open or short in throttle full switch circuit	

WIRING DIAGRAM

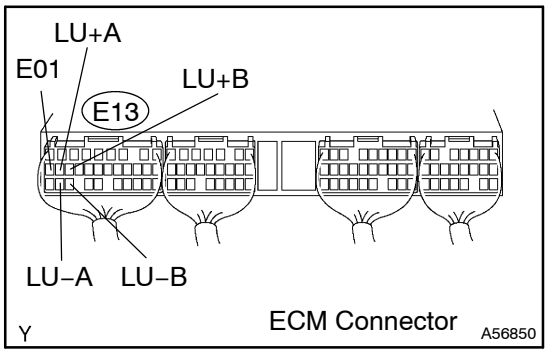


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand–held tester, as freeze frame records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, etc. at the time of the malfunction.

1	INSPECT ECM(THROTTLE CONTOROL MOTOR CIRCUIT)

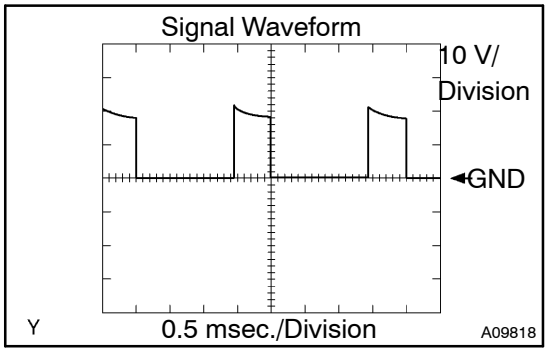


(a) Check the output waveform.

Item	Contents
Terminal	LU+A, LU–A, LU+B ,LU–B ⇔ E01
Equipment set	10 V/DIV, 0.5 ms/DIV
Condition	During engine racing

HINT:

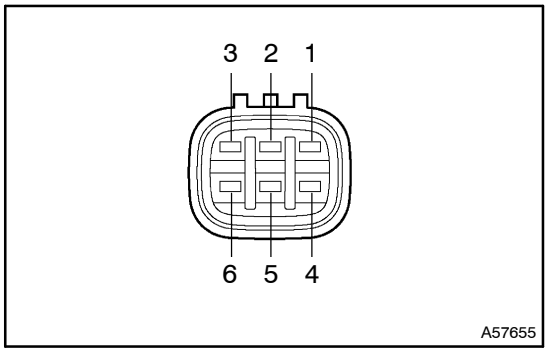
The correct waveforms are as shown.



OK → CHECK AND REPLACE ECM

NG

2	INSPECT DIESEL THROTTLE BODY ASSY(CHECK RESISTANCE OF THROTTLE CONTOROL MOTOR)



(a) Check the throttle control motor for resistance.

(b) Using an ohmmeter, measure the resistance between each terminals.

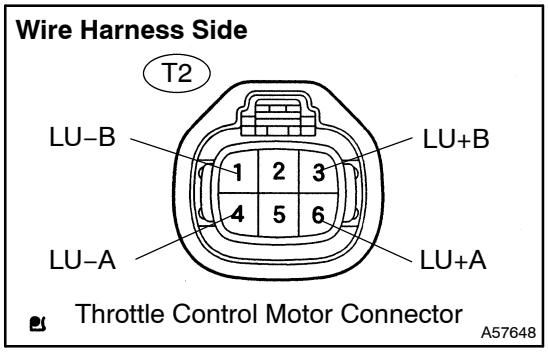
Resistance:

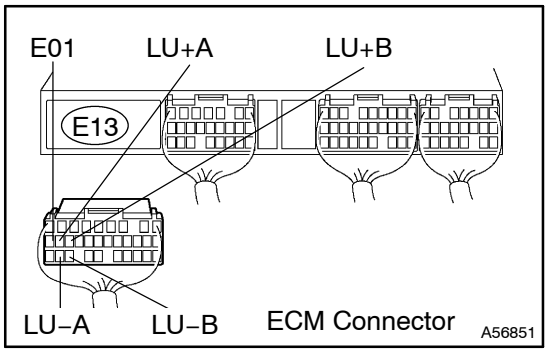
Terminal No.	Specified condition
1 ⇔ 2	18 – 22 Ω at 20 °C (68 °F)
3 ⇔ 2	
4 ⇔ 5	
6 ⇔ 5	

NG → REPLACE DIESEL THROTTLE BODY ASSY (See page 10–31)

OK

3 CHECK HARNESS AND CONNECTOR(THROTTLE CONTOROL MOTOR – ECM)





(a) Disconnect the throttle control motor connector.
(b) Disconnect the ECM E13 connector.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
LU+A (T2 – 6) ⇔ LU+A (E13 – 20)	Continuity
LU–A (T2 – 4) ⇔ LU–A (E13 – 30)	
LU+B (T2 – 3) ⇔ LU+B (E13 – 19)	
LU–B (T2 – 1) ⇔ LU–B (E13 – 22)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
LU+A (E13 – 20) ⇔ E01 (E13 –21)	No continuity
LU–A (E13 – 30) ⇔ E01 (E13 – 21)	
LU+B (E13 – 19) ⇔ E01 (E13 –21)	
LU–B (E13 – 22) ⇔ E01 (E13 – 21)	

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

CHECK AND REPLACE ECM