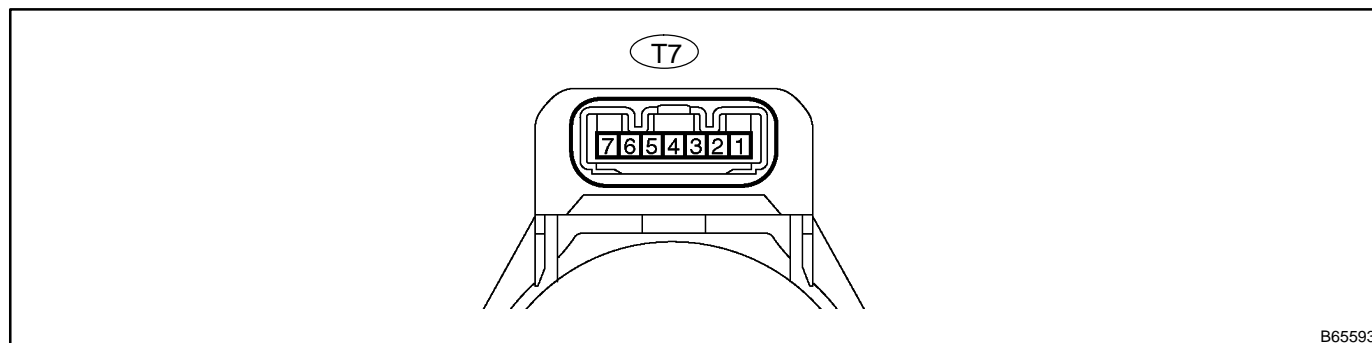


TERMINALS OF ECU

1. CHECK TRANSPONDER KEY AMPLIFIER



B65593

- (a) Disconnect the T7 amplifier connector, and measure the resistance between the terminal of the wire harness side connector and body ground.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Standard
GND (T7-7) - Body ground	R - Body ground	Constant	Below 1 Ω

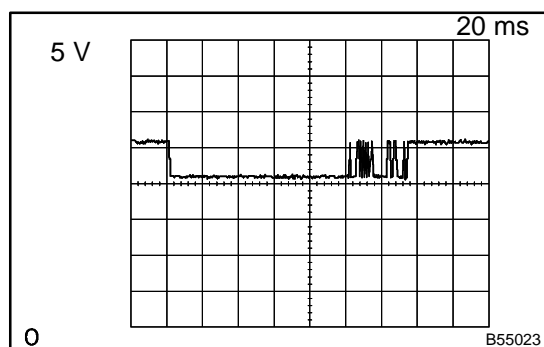
If the result is not as specified, there may be a malfunction on the wire harness side.

- (b) Reconnect the T7 amplifier connector, and measure the resistance and voltage of each terminal of the connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Standard
VC5 (T7-1) - GND (T7-7)	B - R	No key in ignition key cylinder → With key	0 V → 10 to 14 V
CODE(T7-4) - GND (T7-7)	GR - R	No key in ignition key cylinder → With key	Pulse generation (see waveform 1)
TXCT (T7-5) - GND (T7-7)	W - R	No key in ignition key cylinder → With key	Pulse generation (see waveform 2)
GND (T7-7) - Body ground	R - Body ground	Constant	Below 1 Ω

If the result is not as specified, the amplifier may have a malfunction.

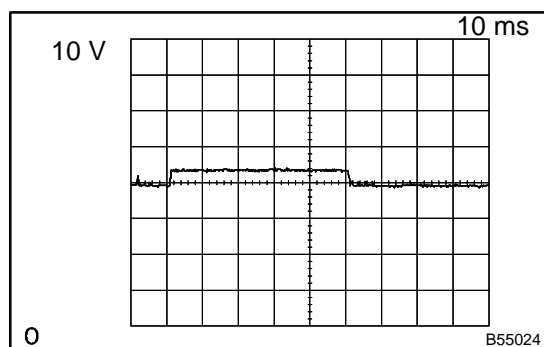


B55023

- (c) Inspect using an oscilloscope.

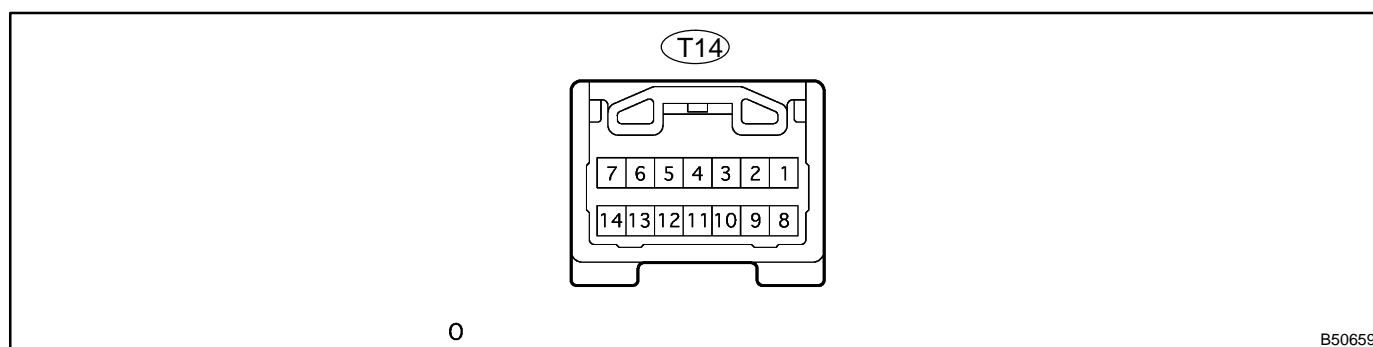
Waveform 1 (Reference):

Terminal	CODE - GND
Tool Setting	5 V/DIV., 20 ms/DIV.
Condition	Ignition switch ON

**Waveform 2 (Reference):**

Terminal	TXCT - GND
Tool Setting	10 V/DIV., 10 ms/DIV.
Condition	Ignition switch ON

2. CHECK TRANSPONDER KEY ECU ASSY



- (a) Disconnect the T14 ECU connector, and measure the voltage and resistance between each terminal of the wire harness side connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
AGND (T14-13) - Body ground	R - Body ground	Constant	Below 1 Ω
+B (T14-1) - GND (T14-14)	P - W-B	Constant	10 to 14 V
IG (T14-2) - AGND (T14-13)	P - R	Ignition switch OFF \rightarrow ON	0 V \rightarrow 10 to 14 V
KSW (T14-10) - AGND (T14-13)	G - R	No key in ignition key cylinder \rightarrow With key	10 k Ω or higher \rightarrow Below 1 Ω

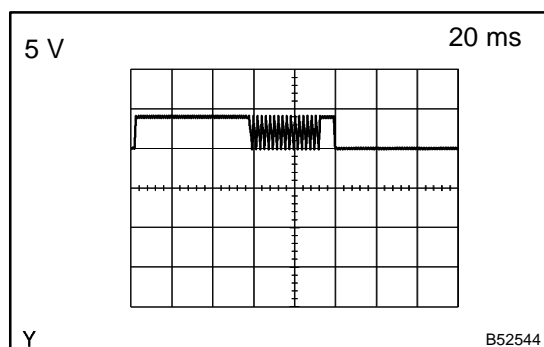
If the result is not as specified, there may be a malfunction on the wire harness side.

- (b) Reconnect the T14 ECU connector, and measure the voltage between each terminal of the connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
KSW (T14-10) - AGND (T14-13)	G - R	No key in ignition key cylinder \rightarrow With key	10 to 14 V \rightarrow 0 V
VC5 (T14-8) - AGND (T14-13)	B - R	Ignition switch OFF \rightarrow ON	0 V \rightarrow 4.5 to 5.5 V
TXCT (T14-12) - AGND (T14-13)	W - R	Ignition switch OFF \rightarrow ON	Pulse generation (see waveform 1)
CODE (T14-11) - AGND (T14-13)	GR - R	Ignition switch OFF \rightarrow ON	Pulse generation (see waveform 2)
EFIO (T14-6) - AGND (T14-13)	B - R	Ignition switch OFF \rightarrow ON	Pulse generation (see waveform 3)
EFII (T14-7) - AGND (T14-13)	V - R	Ignition switch OFF \rightarrow ON	Pulse generation (see waveform 4)

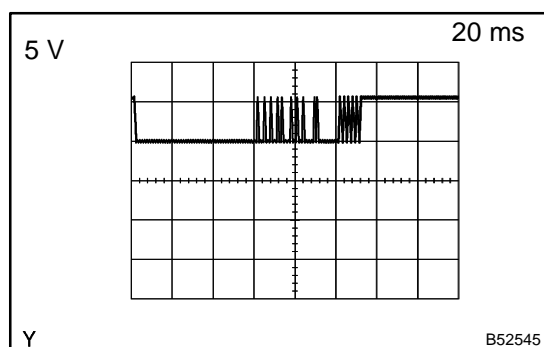
If the result is not as specified, the ECU may have a malfunction.



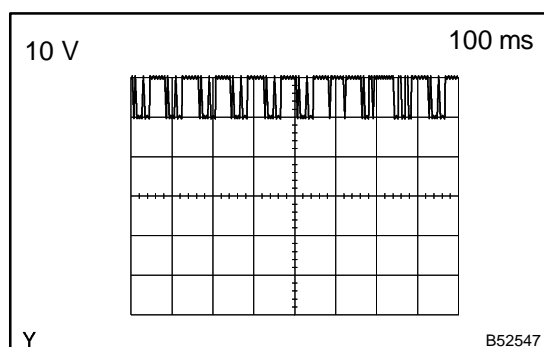
(c) Inspect using an oscilloscope.

Waveform 1 (Reference):

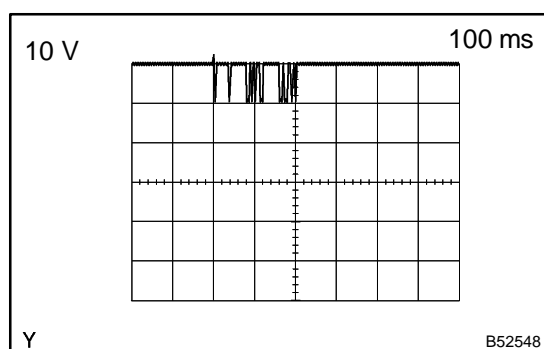
Terminal	TXCT - GND
Tool Setting	5 V/DIV., 20 ms/DIV.
Condition	Ignition switch ON

**Waveform 2 (Reference):**

Terminal	CODE - GND
Tool Setting	5 V/DIV., 20 ms/DIV.
Condition	Ignition switch ON

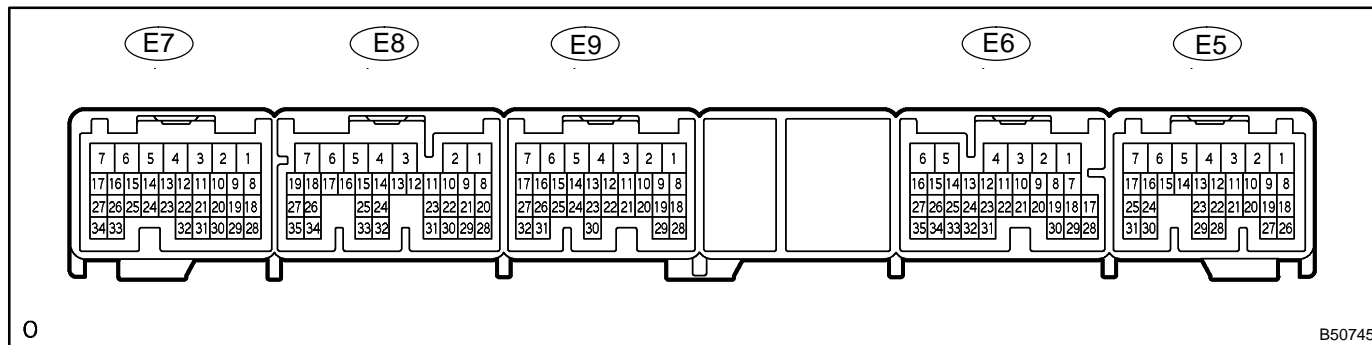
**Waveform 3 (Reference):**

Terminal	EFIO - GND
Tool Setting	10 V/DIV., 100 ms/DIV.
Condition	Ignition switch ON

**Waveform 4 (Reference):**

Terminal	EFII - GND
Tool Setting	10 V/DIV., 100 ms/DIV.
Condition	Constant

3. CHECK ECM



- (a) Disconnect the E6 and E7 ECM connectors, and measure the voltage and resistance between each terminal of the wire harness side connectors.

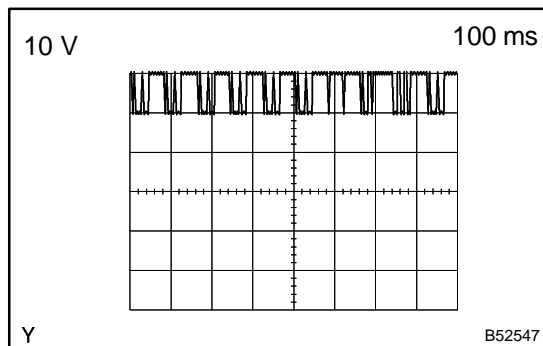
Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
IMI (E6-27) - E1 (E9-1)*1 (E7-1)*2	B - BR	No key in ignition key cylinder → With key	Pulse generation (see waveform 1)
IMO (E6-26) - E1 (E9-1)*1 (E7-1)*2	V - BR	No key in ignition key cylinder → With key	Pulse generation (see waveform 2)
E1 (E9-1)*1 (E7-1)*2 Body ground	BR - Body ground	Constant	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

*1: 2AZ-FE

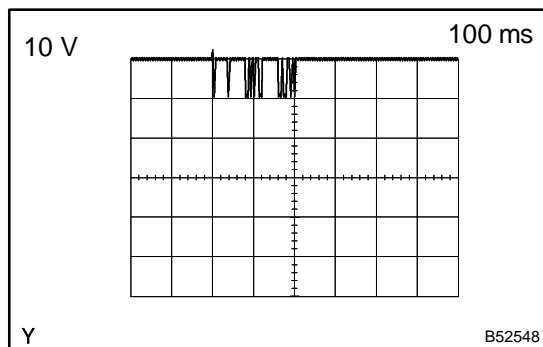
*2: 3MZ-FE



- (b) Inspect using an oscilloscope.

Waveform 1 (Reference):

Terminal	IMI - GND
Tool Setting	10 V/DIV., 100 ms/DIV.
Condition	Ignition switch ON



Waveform 2 (Reference):

Terminal	IMO - GND
Tool Setting	10 V/DIV., 100 ms/DIV.
Condition	Constant