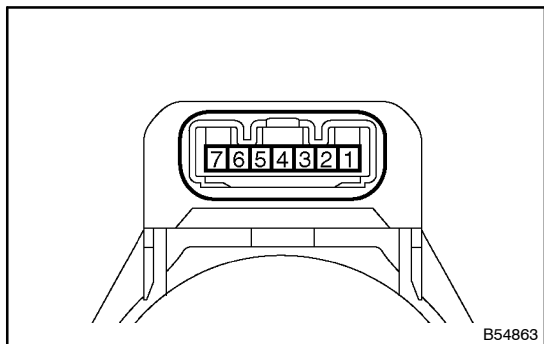


TERMINALS OF ECU



1. INSPECT TRANSPONDER KEY AMPLIFIER

- (a) Disconnect the transponder key amplifier connector.

Standard:

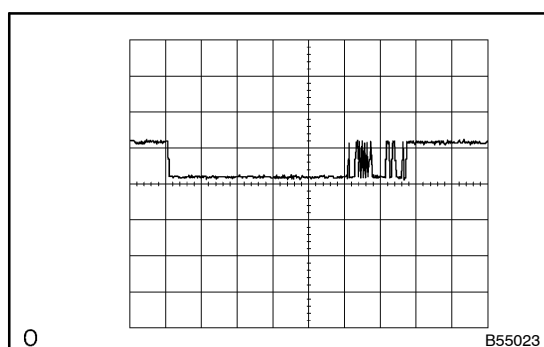
Symbols (Terminal No.)	Wiring Color	Condition	Standard
7 ⇔ Body ground (GND ⇔ Body ground)	W-B ⇔ Body ground	Constant	Continuity

- (b) Connect the transponder key amplifier connector.

Standard:

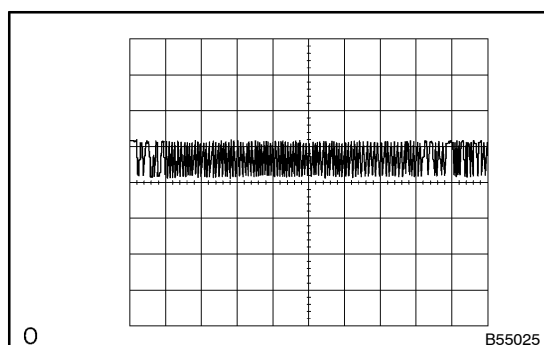
Symbols (Terminal No.)	Wiring Color	Condition	Standard
1 ⇔ 7 (+B ⇔ GND)	B-W ⇔ W-B	No key in the ignition key cylinder → With key	0 V → 10 - 14 V
4 ⇔ 7 (CODE ⇔ GND)	L-R ⇔ W-B	No key in the ignition key cylinder → With key	Waveform 1
3 ⇔ 7 (RXCK ⇔ GND)	B-R ⇔ W-B	No key in the ignition key cylinder → With key	Waveform 2
5 ⇔ 7 (TXCT ⇔ GND)	L ⇔ W-B	No key in the ignition key cylinder → With key	Waveform 3
7 ⇔ Body ground (GND ⇔ Body ground)	W-B ⇔ Body ground	Constant	Continuity

- (c) Inspection using oscilloscope.



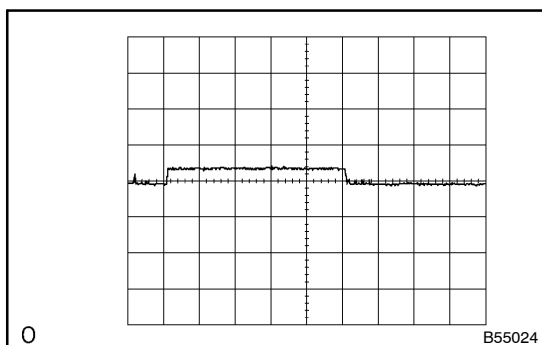
Waveform 1 (Reference)

Item	Condition
Terminal	CODE - GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON



Waveform 2 (Reference)

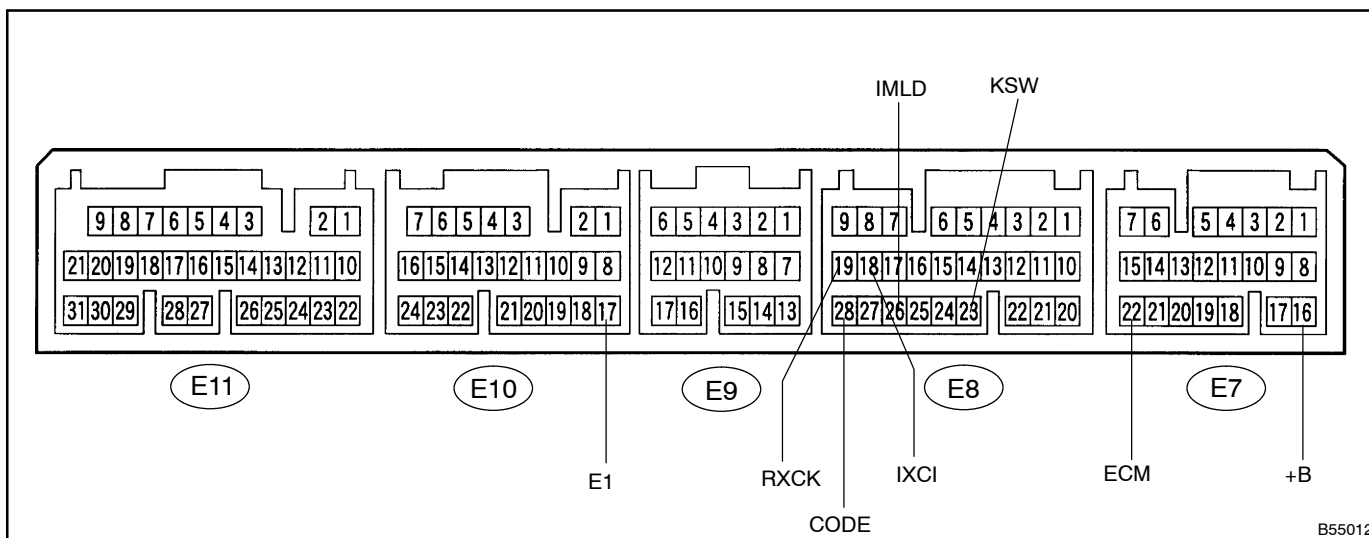
Item	Condition
Terminal	RXCK - GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON



Waveform 3 (Reference)

Item	Condition
Terminal	TXCT - GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON

2. INSPECT ECM

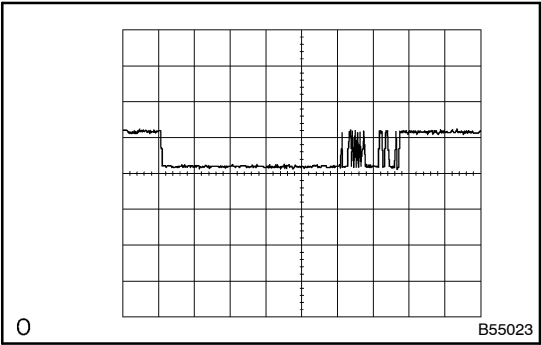


NOTICE:

- Inspection should be started from the backside of the ECM with the ECM connector being connected.
- Inspect the power source voltage and the body ground before the operation inspection.

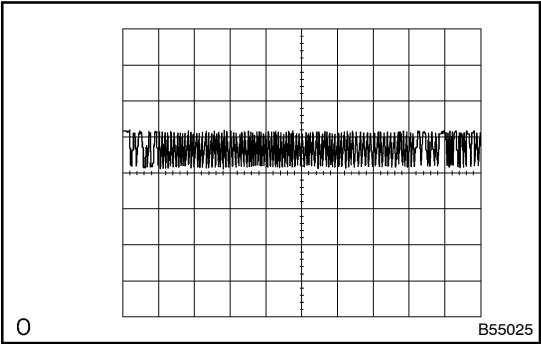
Symbols (Terminal No.)	Wiring Color	Condition	Standard
E8-28 ⇔ E10-17 (CODE ⇔ E1)	L-R ⇔ BR	No key in the ignition key cylinder → With key	Waveform 1
E8-19 ⇔ E10-17 (RXCK ⇔ E1)	B-R ⇔ BR	No key in the ignition key cylinder → With key	Waveform 2
E8-18 ⇔ E10-17 (TXCT ⇔ E1)	L ⇔ BR	No key in the ignition key cylinder → With key	Waveform 3
E8-26 ⇔ E10-17 (IMLD ⇔ E1)	L-B ⇔ BR	Immobilizer system set	10 - 14 V
E8-23 ⇔ E10-17 (KSW ⇔ E1)	P-B ⇔ BR	No key → With key	10 - 14 V → 0 V or less
E10-17 ⇔ Body ground (E1 ⇔ Body ground)	BR ⇔ Body ground	Ignition switch OFF → ON	Continuity
E7-22 ⇔ Body ground (EOM ⇔ Body ground)	BR ⇔ Body ground	Constant	Continuity

(a) Inspection using oscilloscope.



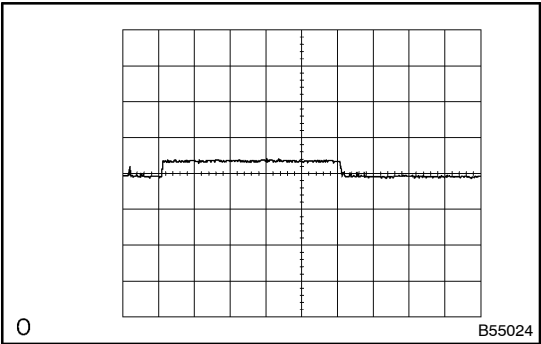
Waveform 1 (Reference)

Item	Condition
Terminal	CODE – GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON



Waveform 2 (Reference)

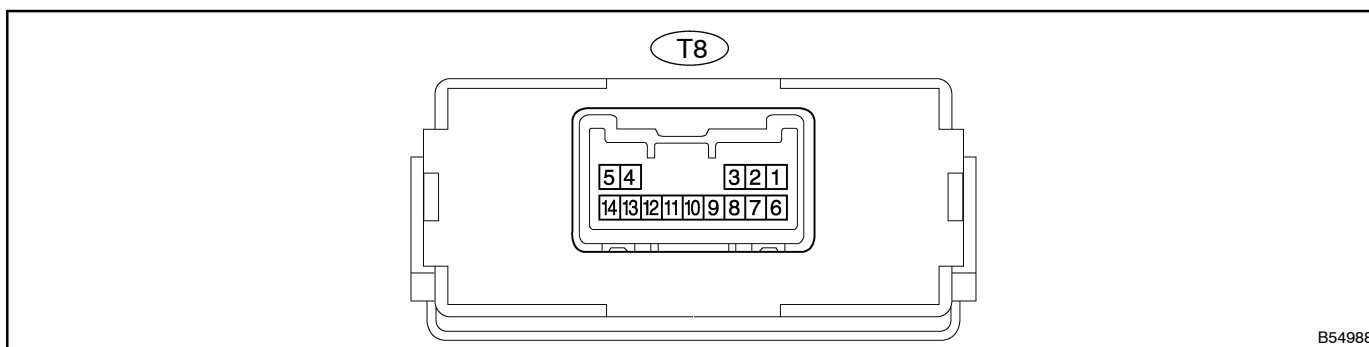
Item	Condition
Terminal	RXCK – GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON



Waveform 3 (Reference)

Item	Condition
Terminal	TXCT – GND
Tool setting	10V/DIV, 10ms/DIV
Vehicle condition	Ignition switch ON

3. 1CD-FTV Engine only: INSPECT TRANSPONDER KEY ECU



B54988

(a) Disconnect the transponder key ECU connector.

Standard:

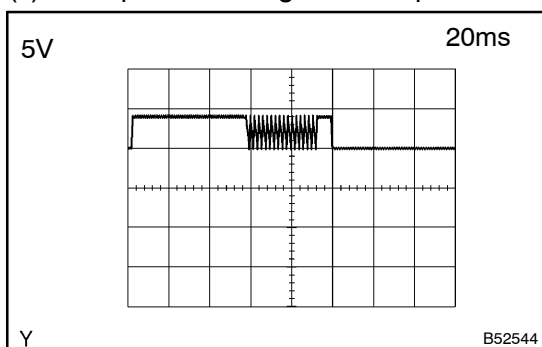
Symbols (Terminal No.)	Wiring Color	Condition	Standard
14 ⇔ Body ground (GND ⇔ Body ground)	W-B ⇔ Body ground	Constant	Continuity
1 ⇔ 14 (+B ⇔ GND)	V ⇔ W-B	Constant	10 - 14 V
2 ⇔ 14 (IG ⇔ GND)	B-O ⇔ W-B	IG switch OFF → ON	0 V → 10 - 14 V
9 ⇔ 14 (KSW ⇔ GND)	P-L ⇔ W-B	No key in the ignition key cylinder → With key	No continuity → Continuity

(b) Connect the transponder key ECU connector.

Standard:

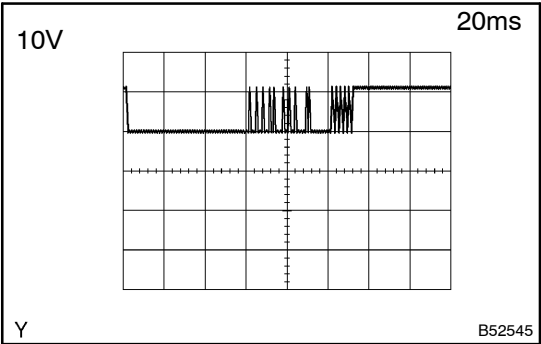
Symbols (Terminal No.)	Wiring Color	Condition	Standard)
9 ⇔ 14 (KSW GND)	P-L ⇔ W-B	No key in the ignition key cylinder → With key	10 - 14 V → 0 V
6 ⇔ 14 (VC12 ⇔ GND)	Y ⇔ W-B	IG switch OFF → ON	0 V → 10 - 14 V
13 ⇔ 14 (TXCT ⇔ GND)	L ⇔ W-B	IG switch OFF → ON	Waveform 1
4 ⇔ 14 (CODE ⇔ GND)	L-R ⇔ W-B	IG switch OFF → ON	Waveform 2
5 ⇔ 14 (RXCX ⇔ GND)	B-R ⇔ W-B	IG switch OFF → ON	Waveform 3
11 ⇔ 14 (EFIO ⇔ GND)	R-Y ⇔ W-B	IG switch OFF → ON	Waveform 4
10 ⇔ 14 (EFII ⇔ GND)	Y-G ⇔ W-B	IG switch OFF → ON	Waveform 5

(c) Inspection using osilloscope.



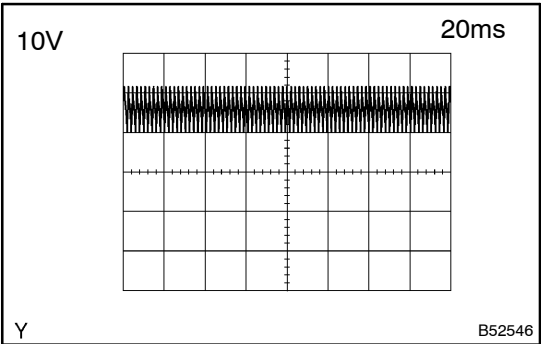
Waveform 1 (Reference)

Item	Condition
Terminal	TXCT - GND
Tool setting	5V/DIV, 20ms/DIV
Vehicle condition	Ignition switch ON



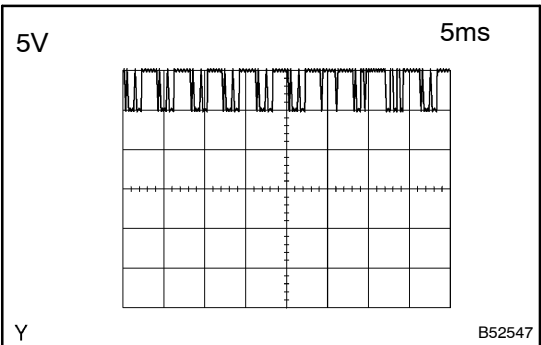
Waveform 2 (Reference)

Item	Condition
Terminal	CODE – GND
Tool setting	10V/DIV, 20ms/DIV
Vehicle condition	Ignition switch ON



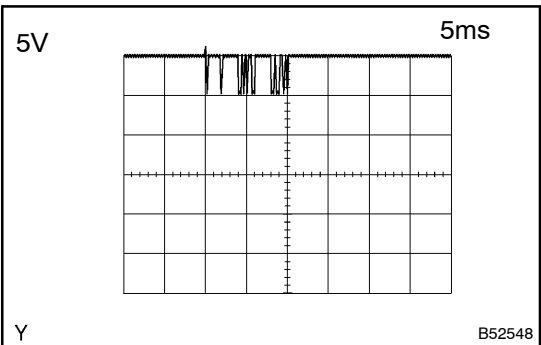
Waveform 3 (Reference)

Item	Condition
Terminal	RXCK – GND
Tool setting	10V/DIV, 20ms/DIV
Vehicle condition	Ignition switch ON



Waveform 4 (Reference)

Item	Condition
Terminal	EFIO – GND
Tool setting	5V/DIV, 5ms/DIV
Vehicle condition	Ignition switch ON



Waveform 5 (Reference)

Item	Condition
Terminal	EFII – GND
Tool setting	5V/DIV, 5ms/DIV
Vehicle condition	Constant