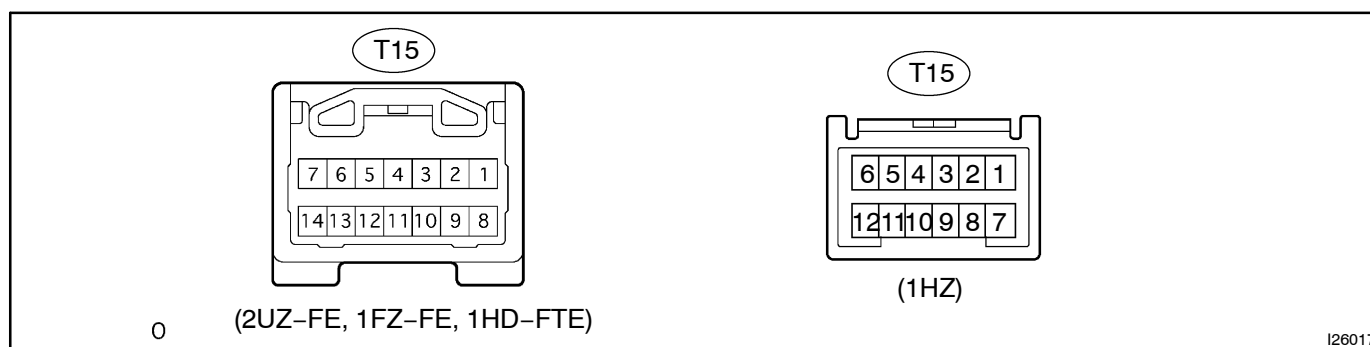


TERMINALS OF ECM

1. TRANSPONDER KEY ECU



(a) Disconnect the transponder key ECU connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified condition
GND ⇔ Body ground (T15-6 ⇔ Body ground) * 1 (T15-14 ⇔ Body ground) *2	W-B ⇔ Body ground	Constant	Continuity
+B ⇔ GND (T15-1 ⇔ T15-6) * 1 (T15-1 ⇔ T15-14) *2	L-W ⇔ W-B	Constant	10 - 14 V
IG ⇔ GND (T15-2 ⇔ T15-6) * 1 (T15-2 ⇔ T15-14) *2	B-R ⇔ W-B	Ignition switch OFF → ON	0 V → 10 - 14 V
KSW ⇔ GND (T15-9 ⇔ T15-6) * 1 (T15-10 ⇔ T15-14) *2	R-B ⇔ W-B	No key in the ignition key cylinder → With key	No Continuity → Continuity
CTY ⇔ GND (T15-4 ⇔ T15-6) * 1 (T15-4 ⇔ T15-14) *2	R-Y ⇔ W-B *3 R-B ⇔ W-B *4	Driver's door close → open	No Continuity → Continuity
KSW ⇔ GND (T15-9 ⇔ T15-6) * 1 (T15-10 ⇔ T15-14) *2	R-B ⇔ W-B	No key in the ignition key cylinder → With key	10 - 14 V → 0 V
VC5 ⇔ GND (T15-7 ⇔ T15-6) * 1 (T15-8 ⇔ T15-14) *2	Y ⇔ W-B	Ignition switch OFF → ON	0 V → 5 V
TXCT ⇔ GND (T15-11 ⇔ T15-6) * 1 (T15-12 ⇔ T15-14) *2	V-G ⇔ W-B	Ignition switch OFF → ON	Waveform 1
CODE ⇔ GND (T15-10 ⇔ T15-6) * 1 (T15-11 ⇔ T15-14) *2	L-B ⇔ W-B	Ignition switch OFF → ON	Waveform 2
EFIO ⇔ GND (T15-6 ⇔ T15-14) *2	W ⇔ W-B	Ignition switch OFF → ON	Waveform 3
EFII ⇔ GND (T15-7 ⇔ T15-14) *2	Y ⇔ W-B	Ignition switch OFF → ON	Waveform 4

IND \leftrightarrow GND (T15-3 \leftrightarrow T15-6) *1 (T15-3 \leftrightarrow T15-14) *2	G-R \leftrightarrow W-B	Immobiliser system unset \rightarrow set	0 V \rightarrow 10 - 14 V \leftrightarrow 0 V
CTY \leftrightarrow GND (T15-4 \leftrightarrow T15-6) *1 (T15-4 \leftrightarrow T15-14) *2	R-Y \leftrightarrow W-B *3 R-B \leftrightarrow W-B *4	Driver's door close \rightarrow open	10 - 14 V \rightarrow 0 V

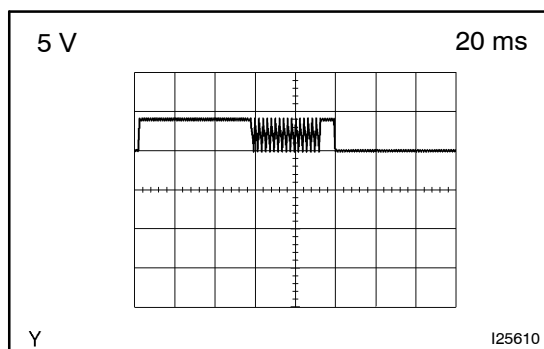
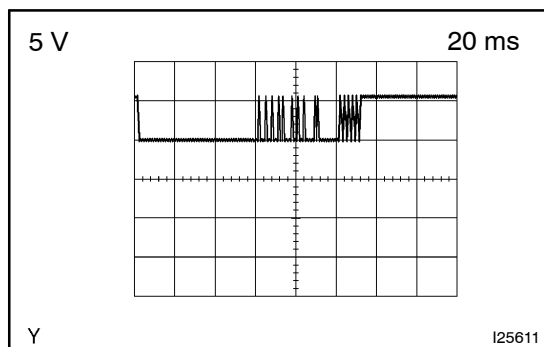
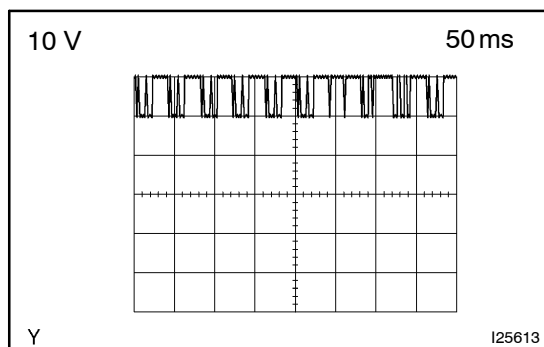
*1: 1HZ

*2: Except 1HZ

*3: LHD

*4: RHD

(b) Inspection using oscilloscope.

Reference:**Reference:****Reference:**

(c) Waveform 1

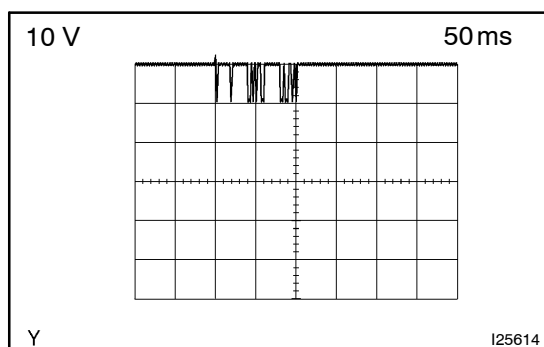
Item	Condition
Terminal	TXCT - GND
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Ignition switch ON

(d) Waveform 2

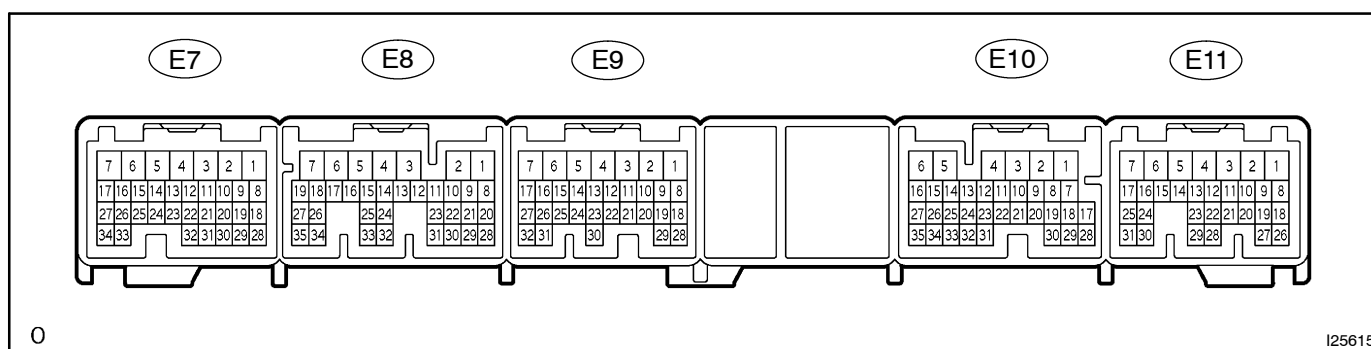
Item	Condition
Terminal	CODE - GND
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Ignition switch ON

(e) Waveform 3

Item	Condition
Terminal	EFIO - GND
Tool setting	10 V/DIV, 50 ms/DIV
Vehicle condition	Ignition switch ON

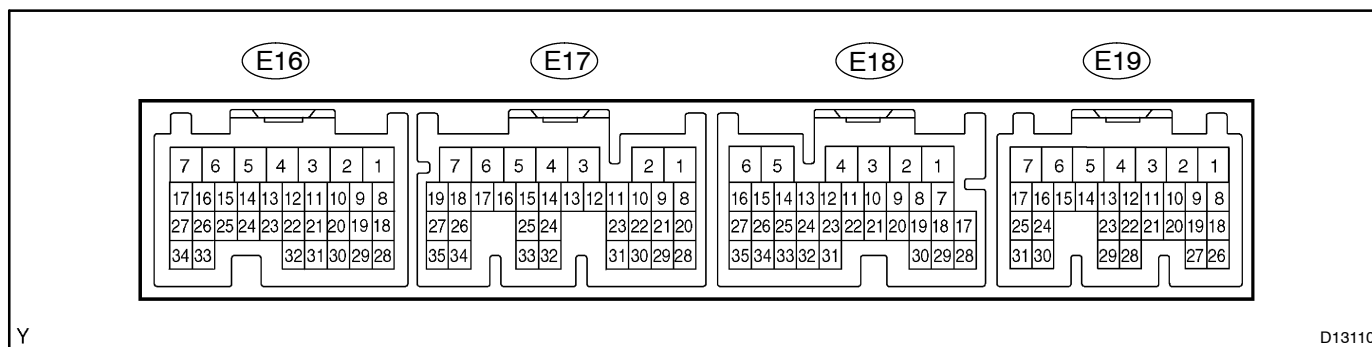
Referece:**(f) Waveform 4**

Item	Condition
Terminal	EFII – GND
Tool setting	10 V/DIV, 50 ms/DIV
Vehicle condition	Constant

2. ECM**2UZ-FE:**

Symbols (Terminal No.)	Wiring Color	Condition	Specified condition
BATT ↔ E1 (E11-3 ↔ E9-1)	B-R ↔ BR	Constant	9 – 14 V
+B ↔ E1 (E11-1 ↔ E9-1)	B-Y ↔ BR	Ignition switch OFF → ON	9 – 14 V
+B2 ↔ E1 (E11-2 ↔ E9-1)	B-Y ↔ BR	Ignition switch OFF → ON	9 – 14 V
IGSW ↔ E1 (E11-9 ↔ E9-1)	B-R ↔ BR	Ignition switch OFF → ON	9 – 14 V
IMI ↔ E1 (E10-27 ↔ E9-1)	W ↔ BR	No key in the ignition key cylinder → With key	Waveform 1
IMO ↔ E1 (E10-26 ↔ E9-1)	Y ↔ BR	No key in the ignition key cylinder → With key	Waveform 2
E1 ↔ Bodyground (E9-1 ↔ Body ground)	BR ↔ Bodyground	Constant	Continuity

1HD-FTE:



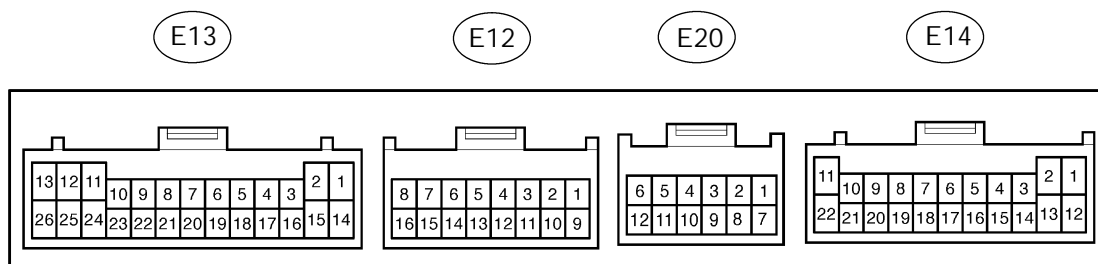
Symbols (Terminal No.)	Wiring Color	Condition	Specified condition
BATT ↔ E1 (E19-1 ↔ E17-14) * 1 (E19-6 ↔ E16-1) *2	B-R ↔ BR	Constant	9 - 14 V
+B ↔ E1 (E19-12 ↔ E17-14) * 1 (E19-1 ↔ E16-1) *2	B-Y ↔ BR	Ignition switch OFF → ON	9 - 14 V
IGSW ↔ E1 (E19-14 ↔ E17-14) * 1 (E19-9 ↔ E16-1) *2	B-R ↔ BR	Ignition switch OFF → ON	9 - 14 V
IMI ↔ E1 (E19-17 ↔ E17-14) * 1 (E19-23 ↔ E16-1) *2	W ↔ BR	No key in the ignition key cylinder → With key	Waveform 1
IMO ↔ E1 (E19-6 ↔ E17-14) * 1 (E19-29 ↔ E16-1) *2	Y ↔ BR	No key in the ignition key cylinder → With key	Waveform 2
E1 ↔ Bodyground (E17-14 ↔ Bodyground) * 1 (E16-1 ↔ Body ground) *2	BR ↔ Bodyground	Constant	Continuity

*1: Europe

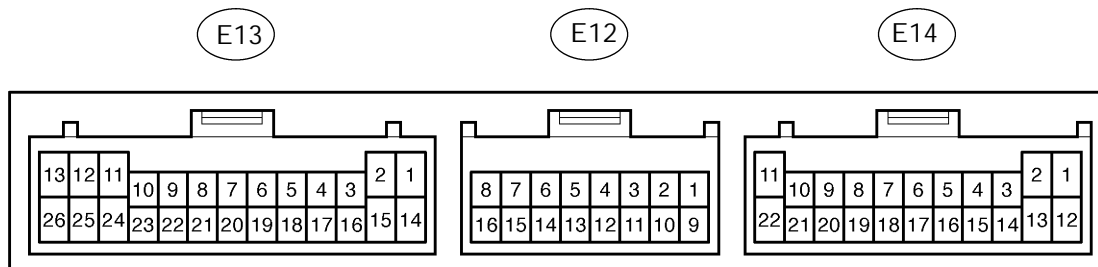
*2: Except Europe

1FZ-FE:

China, Saudi Arabia, Peru:



Except China, Saudi Arabia, Peru:



I26326

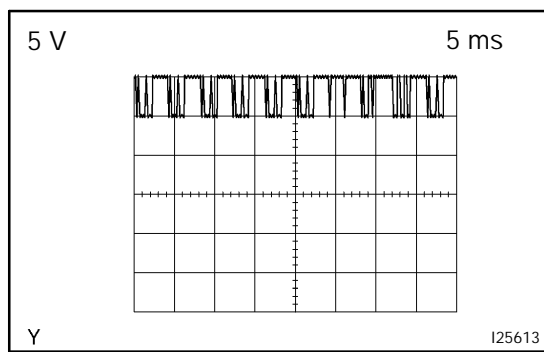
Symbols (Terminal No.)	Wiring Color	Condition	Specified condition
BATT ↔ E1 (E14-1 ↔ E13-14)	B-R ↔ BR	Constant	9 - 14 V
+B ↔ E1 (E14-12 ↔ E13-14)	B-Y ↔ BR	Ignition switch OFF → ON	9 - 14 V
IMI ↔ E1 (E14-17 ↔ E13-14) *1 (E12-12 ↔ E13-14) *2	W ↔ BR	No key in the ignition key cylinder → With key	Waveform 1
IMO ↔ E1 (E14-6 ↔ E13-14) *1 (E13-23 ↔ E13-14) *2	Y ↔ BR	No key in the ignition key cylinder → With key	Waveform 2
E1 ↔ Body ground (E13-14 ↔ Body ground)	BR ↔ Body ground	Constant	Continuity

*1: China, Sudi Arabia, Peru

*2: Except *1

(a) Inspection using oscilloscope.

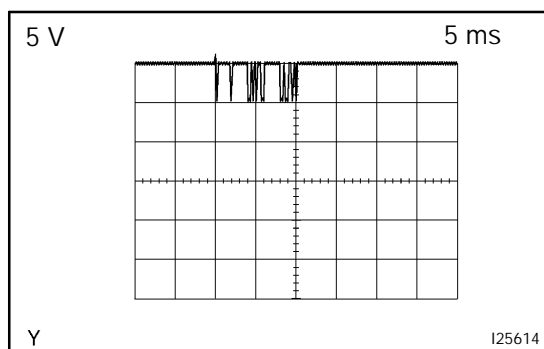
Referece:



(b) Waveform 1

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

Referece:



(c) Waveform 2

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