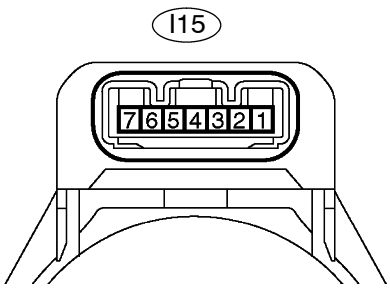
05JVD–01

TERMINALS OF ECU

1. CHECK TRANSPONDER KEY AMPLIFIER



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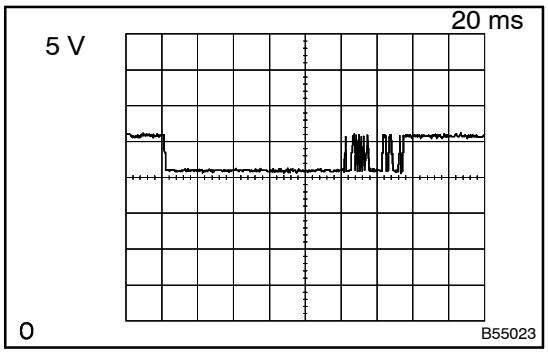
(a) Disconnect the I15 amplifier connector.
(b) Measure the resistance of the terminal of the wire harness side connector.
Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Standard
GND (I15–7) – 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.
(c) Reconnect the I15 amplifier connector.
(d) Measure the resistance and voltage of each terminal of the connector.
Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Standard
VC5 (I15–1) – GND (I15–7)	B – R	No key in ignition key cylinder → With key	0 V → 10 to 14 V
CODE(I15–4) – GND (I15–7)	GR – R	No key in ignition key cylinder → With key	Pulse generation (see waveform 1)
TXCT (I15–5) – GND (I15–7)	W – R	No key in ignition key cylinder → With key	Pulse generation (see waveform 2)
GND (I15–7) – Body ground	R – Body ground	Constant	Below 1 Ω

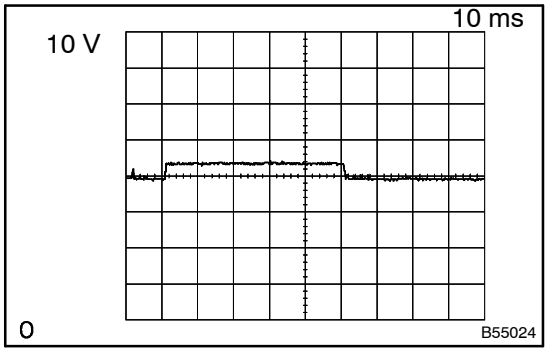
If the result is not as specified, the amplifier may have a malfunction.



B55023

(e) Inspect using an oscilloscope.
Waveform 1 (Reference):

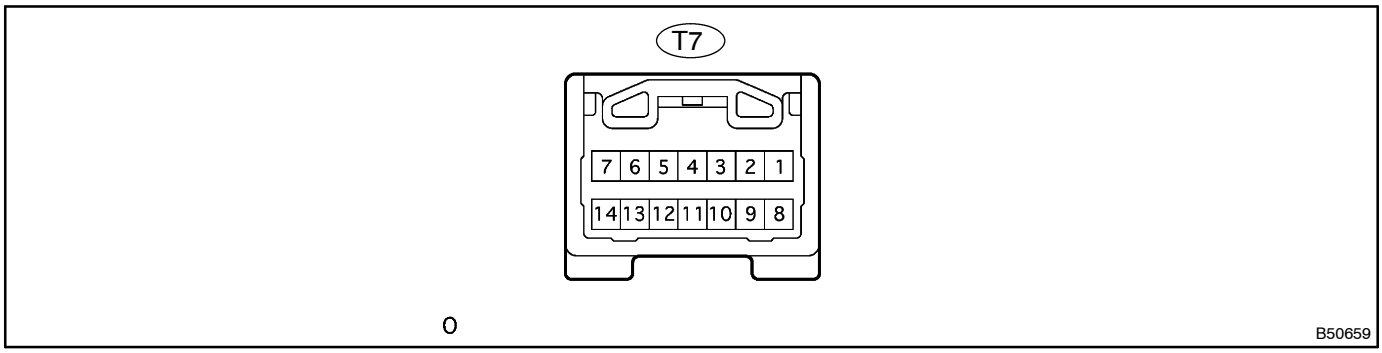
Terminal	CODE – GND
Tool Setting	5 V/DIV., 20 ms/DIV.
Condition	Ignition switch ON



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 T7 ECU connector.

(b) Measure the voltage and resistance of each terminal of the wire harness side connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
GND (T7–14) – Body ground	W–B – Body ground	Constant	Below 1 Ω
+B (T7–1) – GND (T7–14)	P – W–B	Constant	10 to 14 V
IG (T7–2) – GND (T7–14)	P – W–B	Ignition switch OFF → ON	0 V → 10 to 14 V
KSW (T7–10) – GND (T7–14)	G – W–B	No key in ignition key cylinder → With key	10 kΩ or higher → Below 1 Ω

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

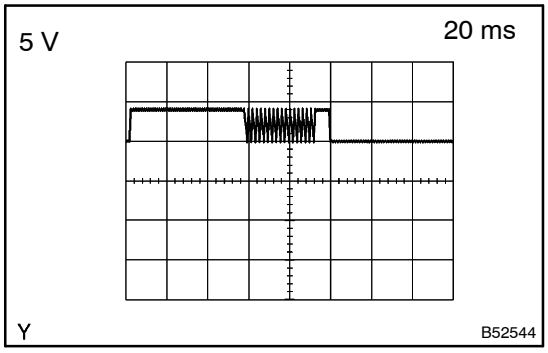
(c) Reconnect the T7 ECU connector.

(d) Measure the voltage of each terminal of the connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
KSW (T7–10) – GND (T7–14)	G – W–B	No key in ignition key cylinder → With key	10 to 14 V → 0 V
VC5 (T7–8) – GND (T7–14)	B – W–B	Ignition switch OFF → ON	0 V → 4.5 to 5.5 V
TXCT (T7–12) – GND (T7–14)	W – W–B	Ignition switch OFF → ON	Pulse generation (see waveform 1)
CODE (T7–11) – GND (T7–14)	GR – W–B	Ignition switch OFF → ON	Pulse generation (see waveform 2)
EFIO (T7–6) – GND (T7–14)	B – W–B	Ignition switch OFF → ON	Pulse generation (see waveform 3)
EFII (T7–7) – GND (T7–14)	V – W–B	Ignition switch OFF → ON	Pulse generation (see waveform 4)

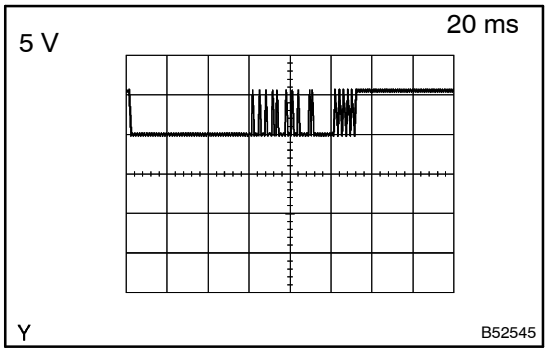
If the result is not as specified, the ECU may have a malfunction.



(e) Inspect using an oscilloscope.

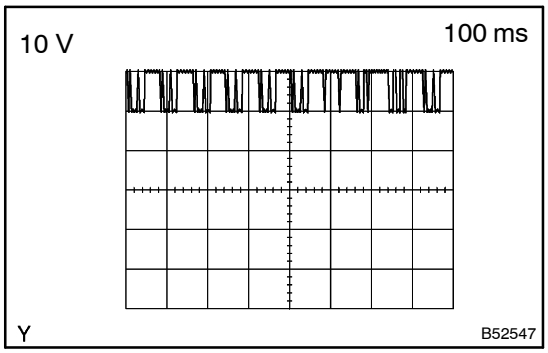
Waveform 1 (Reference):

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



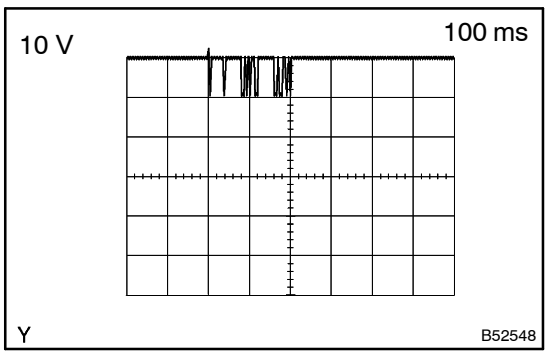
Waveform 2 (Reference):

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



Waveform 3 (Reference):

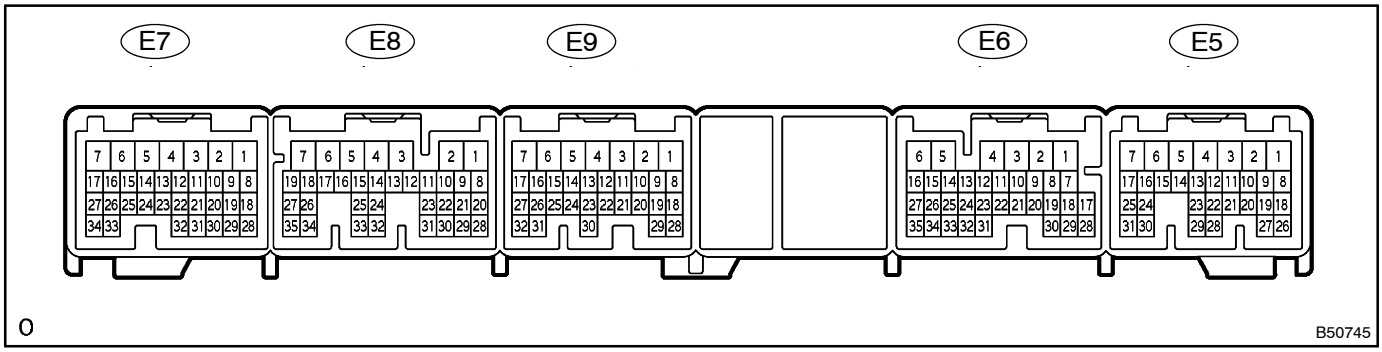
Terminal	EFIO – GND
Tool Setting	10 V/DIV., 100 ms/DIV.
Condition	Ignition switch ON



Waveform 4 (Reference):

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

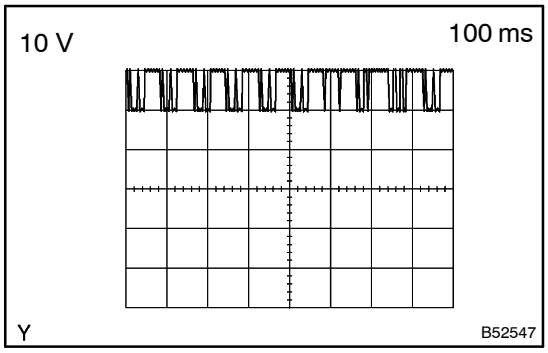
3. CHECK ECM



(a) Disconnect the E6 and E7 ECM connectors.
(b) Measure the voltage and resistance of each terminal of the wire harness side connectors.
Standard:

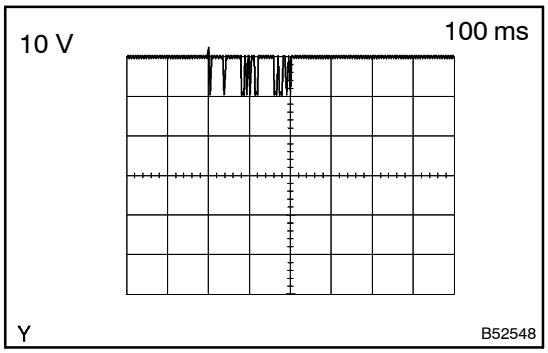
Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
IMI (E6–27) – E1 (E9–1)	B – BR	No key in ignition key cylinder → With key	Pulse generation (see waveform 1)
IMO (E6–26) – E1 (E9–1)	V – BR	No key in ignition key cylinder → With key	Pulse generation (see waveform 2)
E1 (E9–1) – Body ground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

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



(c) 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