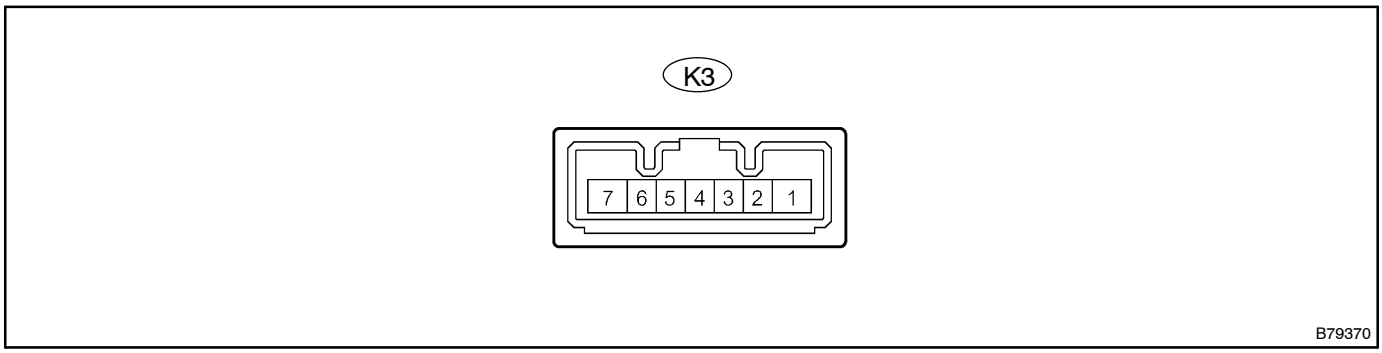
05JEF–01

# TERMINALS OF ECU

## 1. CHECK KEY SLOT




(a) Disconnect the K3 key slot connector.

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

**Standard:**

| Symbols (Terminal No.) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| GND (K3–7) – Body ground | P – Body ground | Ground | Constant | Below 1 Ω |

If the result is not as specified, the wire harness side may have a malfunction.

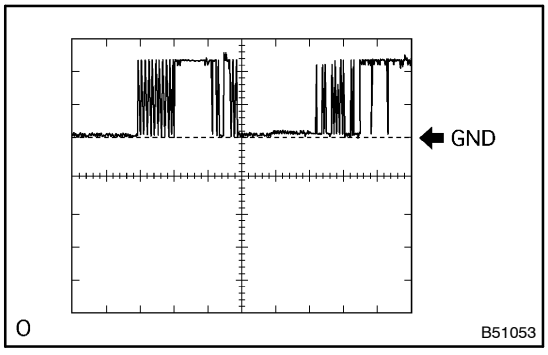
(c) Reconnect the K3 key slot connector.

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

**Standard:**

| Symbols (Terminal No.) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| VC5 (K3–1) – GND (K3–7) | Y – P | Power source | No key in key slot → Key inserted | 0 V → 4.6 to 5.4 V |
| CODE (K3–4) – GND (K3–7) | L – P | Demodulated signal of key code data | No key in key slot → Key inserted | Pulse generation (see waveform 1) |
| TXCT (K3–5) – GND (K3–7) | LG – P | Key code output signal | No key in key slot → Key inserted | Pulse generation (see waveform 2) |
| GND (K3–7) – Body ground | P – Body ground | Ground | Constant | Below 1 Ω |

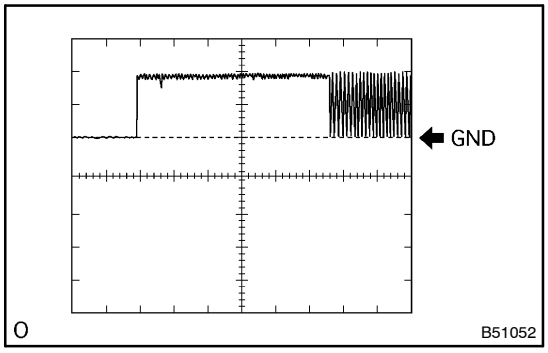
If the result is not as specified, the key slot (amplifier) may have a malfunction.




(e) Inspect using an oscilloscope.

**Waveform 1 (Reference):**

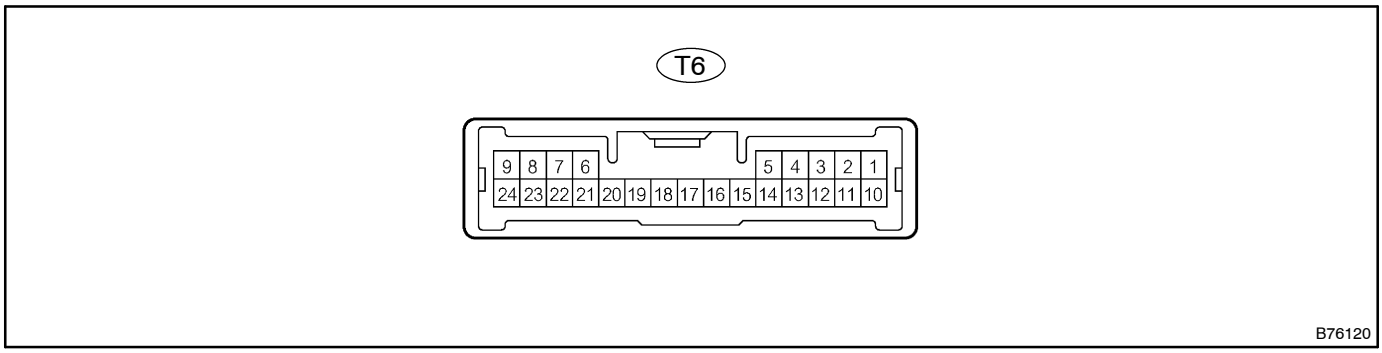
| Terminal | CODE – GND |
|---|---|
| Tool Setting | 2.5 V/DIV., 20 ms/DIV. |
| Condition | No key in key slot → Key inserted |




**Waveform 2 (Reference):**

| Terminal | TXCT – GND |
|---|---|
| Tool Setting | 2.5 V/DIV., 10 ms/DIV. |
| Condition | No key in key slot → Key inserted |

## 2. CHECK TRANSPONDER KEY ECU




(a) Disconnect the T6 ECU connector.

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

**Standard:**

| Symbols (Terminal No.) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| CPUB (T6–3) – GND (T6–22) | L – W–B | Battery | Constant | 10 to 14 V |
| IG (T6–4) – GND (T6–22) | O – W–B | Power switch (IG) | Power switch's power mode OFF → ON (IG) | 0 V → 10 to 14 V |
| CUWS (T6–5) –GND (T6–22) | B – W–B | Unlock warning switch | No key in key slot → Key inserted | 10 kΩ or higher → Below 1 Ω |
| AGND (T6–7) – GND (T6–22) | P – W–B | Ground | Constant | Below 1 Ω |
| GND (T6–22) – Body ground | W–B – Body ground | Ground | Constant | Below 1 Ω |

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

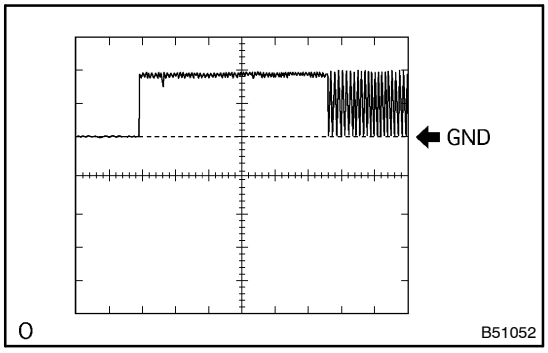
(c) Reconnect the T6 ECU connector.

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

**Standard:**

| Symbols (Terminal No.) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| CUWS (T6–5) –GND (T6–22) | B – W–B | Unlock warning switch | No key in key slot → Key inserted | 10 to 14 V → Below 1 V |
| VC5 (T6–20) – GND (T6–22) | Y – W–B | Power source | No key in key slot → Key inserted | 0 V → 4.6 to 5.4 V |
| CODE (T6–21) – AGND (T6–7) | L – P | Transponder key amplifier communication signal | No key in key slot → Key inserted | Pulse generation (see waveform 1) |
| TXCT (T6–6) – AGND (T6–7) | LG – P | Transponder key amplifier communication signal | No key in key slot → Key inserted | Pulse generation (see waveform 2) |
| HEV0 (T6–19) – GND (T6–22) | W – W–B | Hybrid vehicle control ECU output signal | No key in key slot → Key inserted | Pulse generation (see waveform 3) |
| HEV1 (T6–18) – GND (T6–22) | R – W–B | Hybrid vehicle control ECU input signal | Constant | Pulse generation (see waveform 4) |

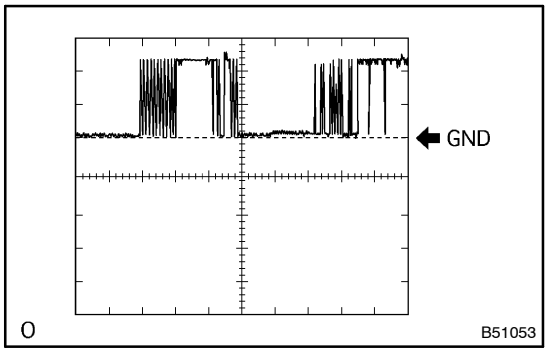
If the result is not as specified, the ECU may have a malfunction.




(e) Inspect using an oscilloscope.

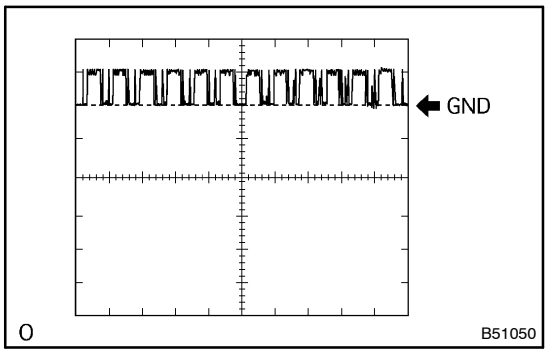
**Waveform 1 (Reference):**

| Terminal | TXCT – GND |
|---|---|
| Tool Setting | 2.5 V/DIV., 10 ms/DIV. |
| Condition | No key in key slot → Key inserted |



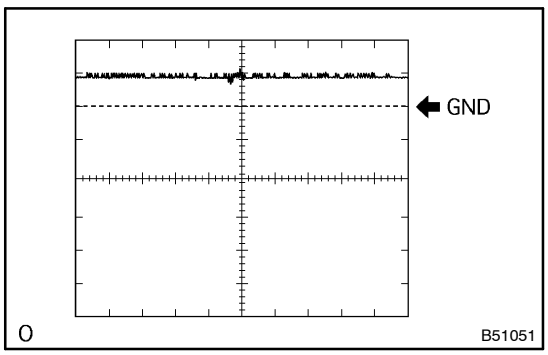

**Waveform 2 (Reference):**

| Terminal | CODE – GND |
|---|---|
| Tool Setting | 2.5 V/DIV., 20 ms/DIV. |
| Condition | No key in key slot → Key inserted |




**Waveform 3 (Reference):**

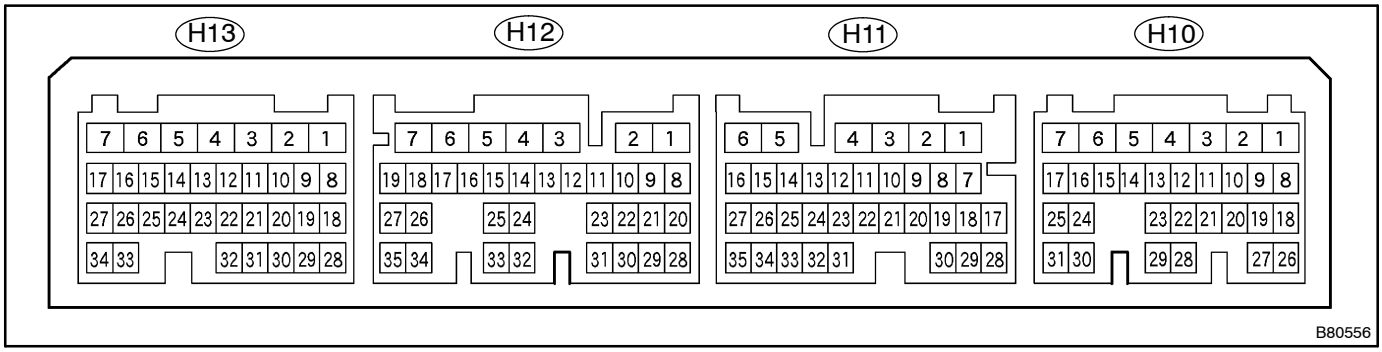
| Terminal | HEV0 – GND |
|---|---|
| Tool Setting | 12 V/DIV., 100 ms/DIV. |
| Condition | No key in key slot → Key inserted |




**Waveform 4 (Reference):**

| Terminal | HEV1 – GND |
|---|---|
| Tool Setting | 12 V/DIV., 100 ms/DIV. |
| Condition | Constant |

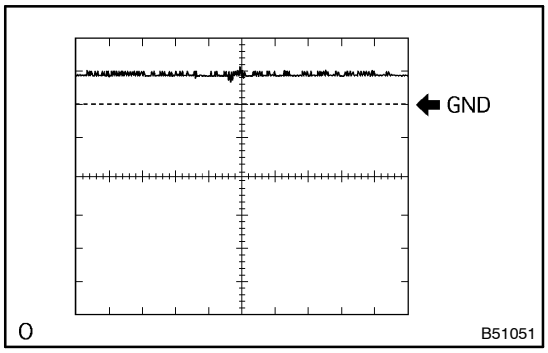
## 3. CHECK HYBRID VEHICLE CONTROL ECU




(a) Measure the voltage and resistance of each terminal of the connectors.
**Standard:**

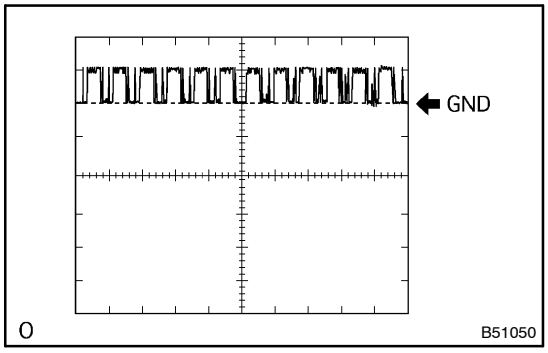
| Symbols (Terminal No.) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| ST2 (H10–5) – GND1 (H10–1) | Y – W–B | Ignition start control signal input | Hybrid control system stopped and power switch's power mode ON (READY) | 10 to14 V |
| IGSW (H10–7) – GND1 (H10–1) | O – W–B | Ignition ready control signal input | Hybrid control system stopped and power switch's power mode ON (IG) | 10 to14 V |
| BATT (H11–6) – GND1 (H10–1) | Y – W–B | Battery | Constant | 10 to14 V |
| +B1 (H12–7) – GND1 (H10–1) | L – W–B | Ignition power supply | Power switch's power mode ON (IG) | 10 to14 V |
| +B2 (H12–6) – GND1 (H10–1) | L – W–B | Ignition power supply | Power switch's power mode ON (IG) | 10 to14 V |
| IMI (H10–6) – GND2 (H10–4) | W – W–B | Transponder key ECU input signal | Power switch's power mode ON (IG) | Pulse generation (see waveform 1) |
| IMO (H10–26) – GND2 (H10–4) | R – W–B | Transponder key ECU input signal | No key in key slot → Key insert | Pulse generation (see waveform 2) |
| GND1 (H10–1) – Body ground | W–B – Body ground | Ground | Constant | Below 1 Ω |
| GND2 (H10–4) – Body ground | W–B – Body ground | Ground | Constant | Below 1 Ω |

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




(b) Inspect using an oscilloscope.
**Waveform 1 (Reference):**

| Terminal | IMI – GND1 |
|---|---|
| Tool Setting | 12 V/DIV., 100 ms/DIV. |
| Condition | Power switch's power mode ON (IG) |




### Waveform 2 (Reference):

| | |
|---|---|
| Terminal | IMO – GND2 |
| Tool Setting | 12 V/DIV., 100 ms/DIV. |
| Condition | No key in key slot → Key inserted |