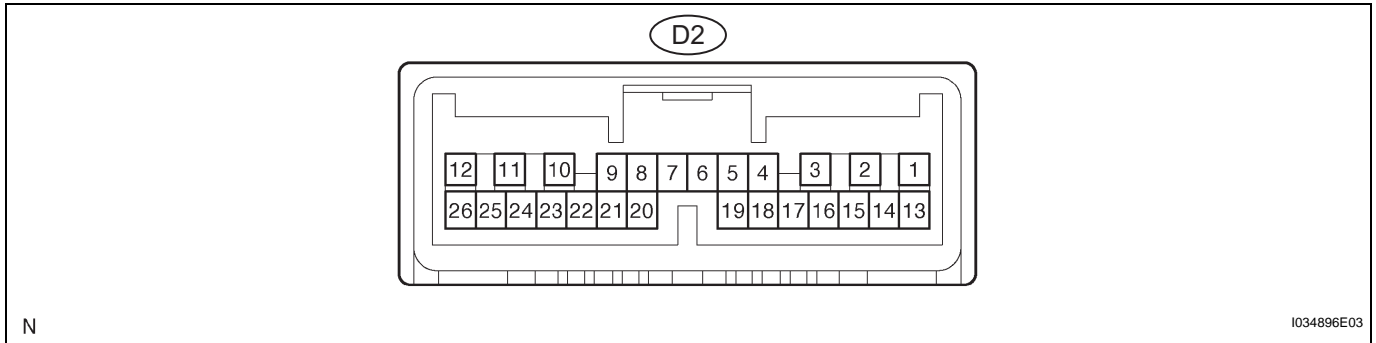
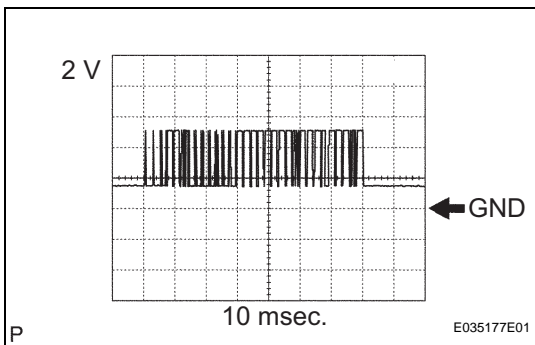


# TERMINALS OF ECU

## 1. CHECK DISTANCE CONTROL ECU



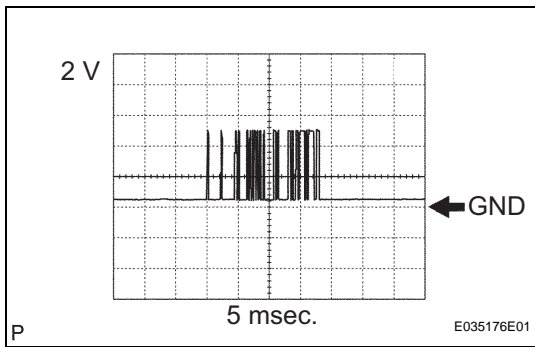
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
B - GND (D2-1 - D2-12)	P - R	Battery	Always	10 to 14 V
WIP2 - GND (D2-2 - D2-12)	W - R	Wiper switch signal	Ignition switch ON, Wiper switch: OFF → HI	Below 1 V → 10 to 14 V
WASH - GND (D2-3 - D2-12)	V - R	Washer switch signal	Ignition switch ON, Washer switch: OFF → ON	10 to 14 V → Below 1 V
SGND - Body ground (D2-10 - Body ground)	R - Body ground	Ground	Always	Below 1 Ω
GND - Body ground (D2-12 - Body ground)	R - Body ground	Ground	Always	Below 1 Ω
IGB - GND (D2-13 - D2-12)	V - R	Ignition switch on signal	Ignition switch ON	10 to 14 V
MODE - GND (D2-16 - D2-12)	LG - R	Distance control switch signal	Ignition switch ON, Distance control switch OFF → ON	10 to 14 V → Below 1 V
LRDD - GND (D2-22 - D2-12)	B - R	Laser radar sensor input signal	Ignition switch ON	Pulse generation (see waveform 1)
LRRD - GND (D2-23 - D2-12)	W - R	Laser radar sensor input signal	Ignition switch ON	Pulse generation (see waveform 2)
ELC - GND (D2-24 - D2-12)	L-B - R	ECM input signal	Ignition switch ON	Pulse generation (see waveform 3)
LCS - GND (D2-25 - D2-12)	GR - R	ECM input signal	Ignition switch ON	Pulse generation (see waveform 4)



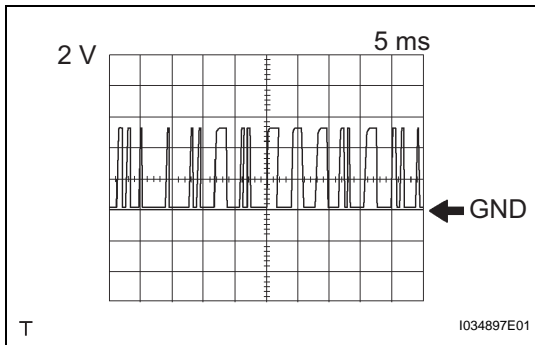
(a) Reference: waveform 1

HINT:

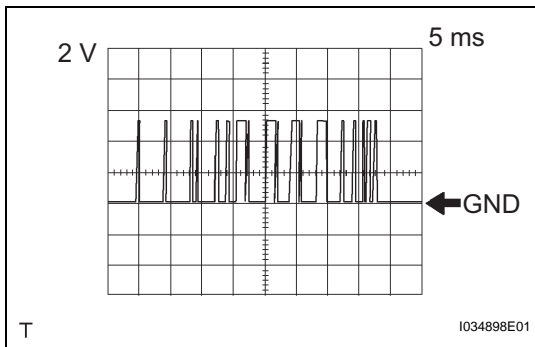
- Terminal: LRDD - GND
- Gauge set: 2 V/DIV, 10 ms./DIV
- Condition: Ignition switch ON



- (b) Reference: waveform 2  
HINT:
- Terminal: LRRD - GND
  - Gauge set: 2 V/DIV, 5 ms./DIV
  - Condition: Ignition switch ON

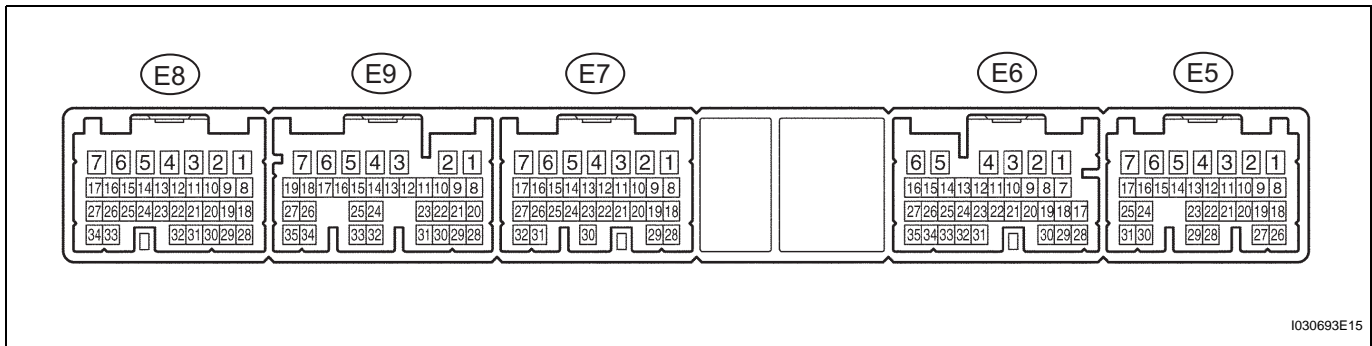


- (c) Reference: waveform 3  
HINT:
- Terminal: ELC - GND
  - Gauge set: 2 V/DIV, 5 ms./DIV
  - Condition: Ignition switch ON



- (d) Reference: waveform 4  
HINT:
- Terminal: LCS - GND
  - Gauge set: 2 V/DIV, 5 ms./DIV
  - Condition: Ignition switch ON

2. CHECK ECM



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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E1 - Body ground (E7-1 - Body ground)	BR - Body ground	Ground	Always	Below 1 Ω
LGND - Body ground (H31-5 - Body ground)	Y - Body ground	Ground	Always	Below 1 Ω
LCS - E1 (E7-19 - E7-1)	W-R - BR	Distance control ECU input signal	Ignition switch ON	Pulse generation (see waveform 1)

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CCHG - E1 (E7-28 - E7-1)	P - BR	Distance control switch signal	Ignition switch ON Cruise control main switch ON MODE switch ON	Below 1 V
			Ignition switch ON Cruise control main switch ON MODE switch ON	10 to 14 V
ELC - E1 (E6-12 - E7-1)	B-R - BR	Distance control ECU output signal	Ignition switch ON	Pulse generation (see waveform 1)
ST1- - E1 (E6-12 - E7-1)	GR - BR	Stop light signal	Brake pedal depressed (Stop light switch ON)	Below 1 V
			Brake pedal depressed (Stop light switch OFF)	10 to 14 V
SPD - E1 (E6-17 - E7-1)	LG - BR	Speed signal	Engine start → Car stoppage	Below 1.5 V → 4.7 to 16 V
			During pedal released (Pulse generated)	3 to 7 V
STP - E1 (E6-19 - E7-1)	B - BR	Stop light signal	Brake pedal released (Stop light switch OFF)	Below 1 V
			Brake pedal depressed (Stop light switch ON)	10 to 14 V
CCS - E1 (E6-24 - E7-1)	P - BR	Cruise control main switch signal	Ignition switch ON CANCEL switch ON -/SET switch ON +/RES switch ON Main switch ON	10 to 16 V 6.6 to 10.1 V 4.5 to 7.1 V 2.3 to 4.0 V Below 1 V
ENG+ - ENG- (E5-24 - E5-30)	LG - L	Skid control signal	Ignition switch ON	Pulse generation (see waveform 1)
TRC+ - TRC- (E5-25 - E5-31)	Y - G	Skid control signal	Ignition switch ON	Pulse generation (see waveform 1)



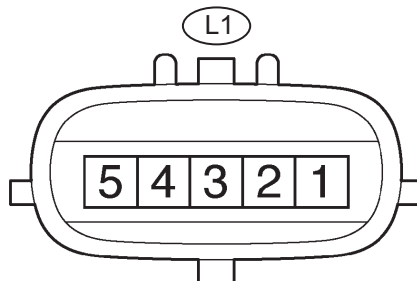
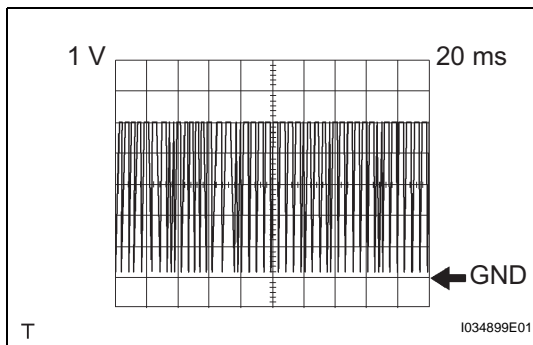
If the value is not within the standard range, some defects on the vehicle is suspected.

(a) Reference: waveform 1

HINT:

- Terminal: LCS - E1
- Gauge set: 1V/DIV, 20 ms./DIV
- Condition: Ignition switch ON

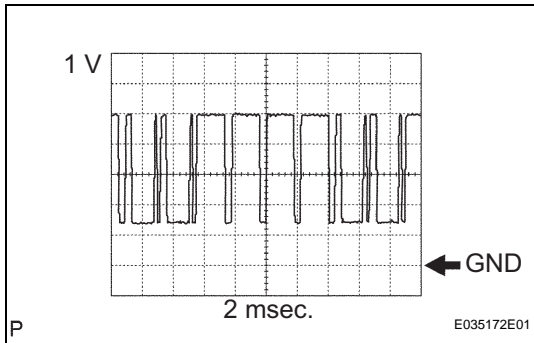
**3. CHECK LASER SENSOR**



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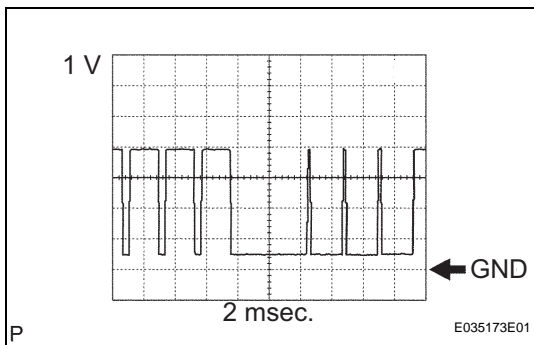
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
LGND - Body ground (L1-1 - Body ground)	BR - Body ground	Distance signal	Always	Below 1 Ω
SGND - Body ground (L1-2 - Body ground)	R - Body ground	Ground	Always	Below 1 Ω
LRDD - SGND (L1-3 - L1-2)	B - R	Laser radar sensor output signal	Ignition switch ON	Pulse generation (see waveform 1)
LRRD - SGND (L1-4 - L1-2)	W - R	Laser radar sensor input signal	Ignition switch ON	Pulse generation (see waveform 2)
IGB - SGND (L1-5 - L1-2)	V - R	Ignition switch signal	Ignition switch ON	10 to 14 V



(a) Reference: waveform 1

HINT:

- Terminal: LRDD - SGND
- Gauge set: 1 V/DIV, 2 msec./DIV
- Condition: Ignition switch ON

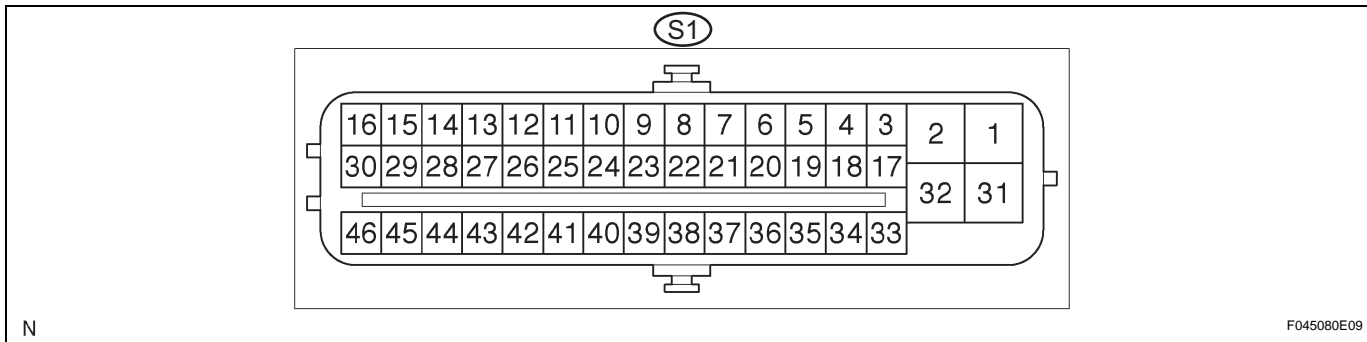


(b) Reference: waveform 2

HINT:

- Terminal: LRRD - SGND
- Gauge set: 1 V/DIV, 2 msec./DIV
- Condition: Ignition switch ON

**4. BRAKE ACTUATOR ASSEMBLY (SKID CONTROL ECU)**



Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BZ (S1 - 30) - GND (S1 - 32)	O - W-B	Skid control buzzer signal	Ignition switch ON Skid control buzzer is not sounded	10 to 14 V (*1)
ENG+ (S1 - 9) - ENG- (S1 - 23)	G - L-B	ECM signal	Ignition switch ON	Pulse generation (*1)
TRC+ (S1 - 8) TRC- (S1 - 22)	BR - P	ECM signal	Ignition switch ON	Pulse generation (*2)
STPO (S1 - 16) - GND1 (S1 - 32)	G - W-B	Stop light signal	Ignition switch ON	10 to 14 V (*1)