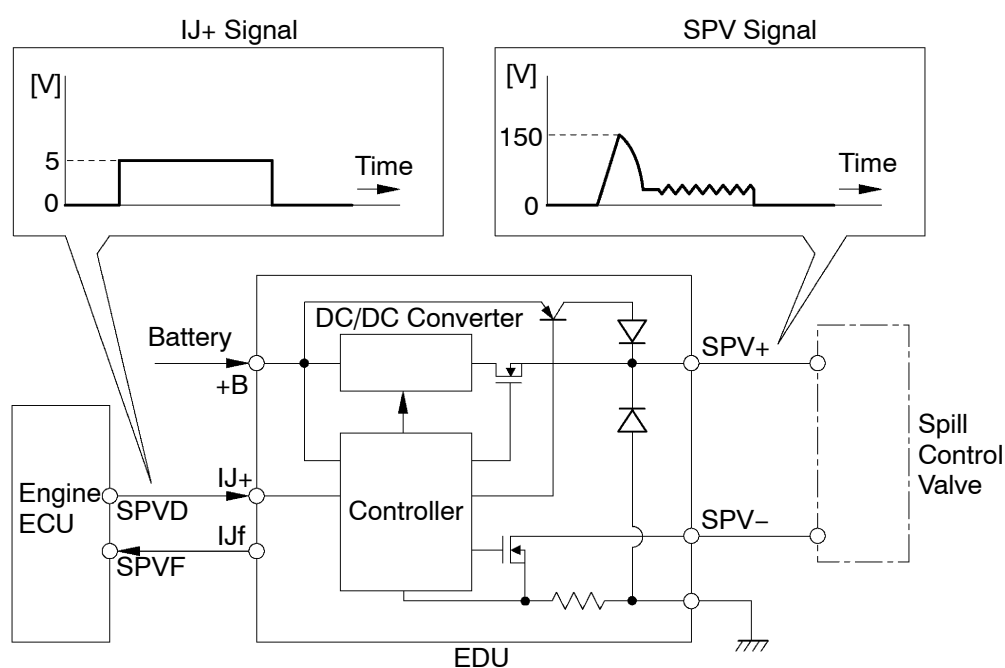


DTC**97****EDU Circuit Malfunction****CIRCUIT DESCRIPTION**

The EDU has been adopted to drive the spill control valve at high speeds. The EDU has realized high-speed driving under high fuel pressure conditions through the use of a DC/DC converter that provides a high-voltage, quick-charging system.

The engine ECU constantly monitors the EDU and stops the engine in case an abnormal condition is detected.

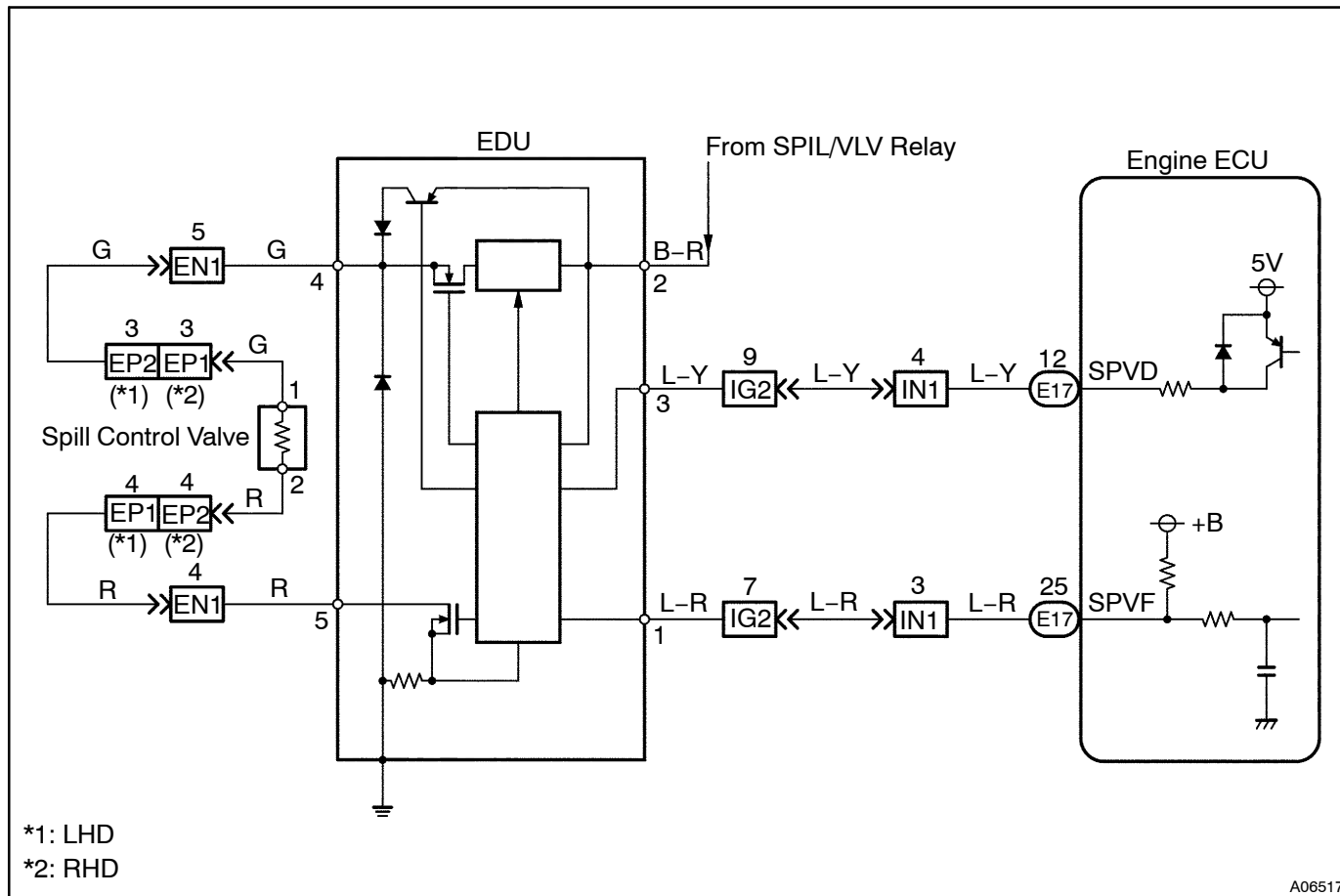
The battery voltage is increased by the DC/DC converter. A voltage of approximately 150 V is applied to the spill control valve in accordance with the IJ+ signal received from the engine ECU. Also at this time, the injection verification signal (IJf) is sent to the engine ECU.



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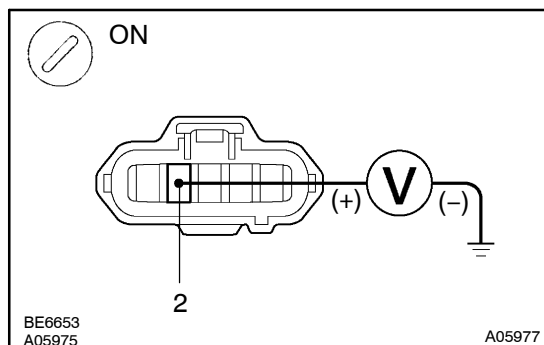
DTC No.	DTC Detecting condition	Trouble Area
97	Although the SPVD is output to EDU with the engine speed at 500 rpm or more, the SPVF is not input continuously 5 times or more	• Open or short in EDU circuit • EDU • Spill control valve

WIRING DIAGRAM



INSPECTION PROCEDURE

- | | |
|---|---|
| 1 | Check voltage between terminal 2 of wire harness side connector and body ground. |
|---|---|

**PREPARATION:**

- (a) Disconnect the EDU connector.
- (b) Turn the ignition switch ON.

CHECK:

Measure voltage between terminal 2 of wire harness side connector and body ground.

OK:

Voltage: 10 – 14 V

NG

**Check ECU power source circuit
(See page DI-76).**

OK

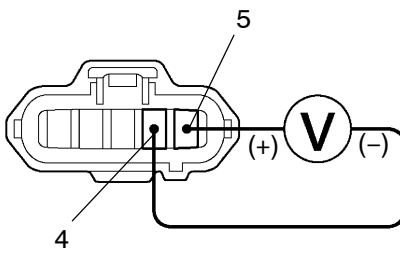
2 Check continuity EDU ground bolt and body ground.

NG

Tighten EDU ground bolt.

OK

3 Check resistance between terminals 4 and 5 of wire harness side connector.



CHECK:

Measure resistance between terminals 4 and 5 of wire harness side connector.

OK:

Resistance: Approx. 1.7 Ω

OK

Go to step 6.

NG

4 Check spill control valve ([See page FU-113](#)).

NG

Check and replace injection pump ([See page FU-113](#)).

OK

5 Check for open and short in harness and connector between spill control valve and EDU. ([See page IN-19](#)).

NG

Repair or replace harness or connector.

OK

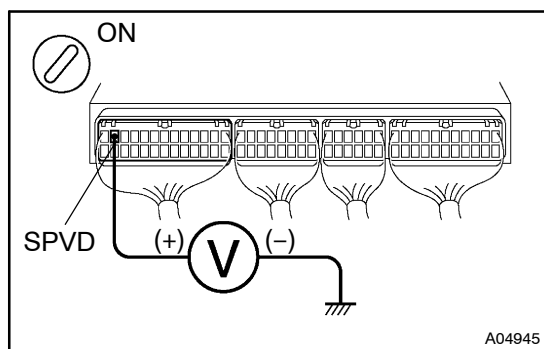
- 6 Check for open and short in harness and connector between engine ECU and EDU (See page IN-19).**

NG

Repair or replace harness or connector.

OK

- 7 Check voltage between terminal SPVD of engine ECU connector and body ground.**

**PREPARATION:**

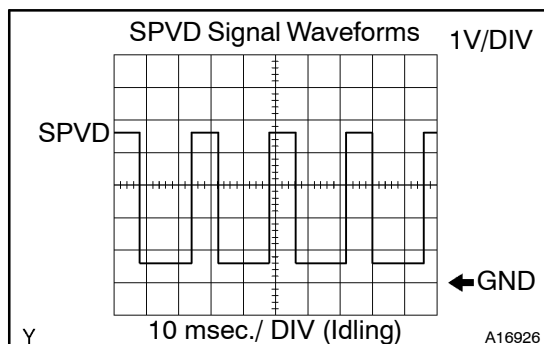
- (a) Remove the glove compartment door.
- (b) Turn the ignition switch ON.

CHECK:

Measure voltage between terminal SPVD of engine ECU connector and body ground.

OK:

Voltage: Approx. 0 V

**Reference: INSPECTION USING OSCILLOSCOPE**

During idling, check waveform between terminals SPVD and E1 of engine ECU.

HINT:

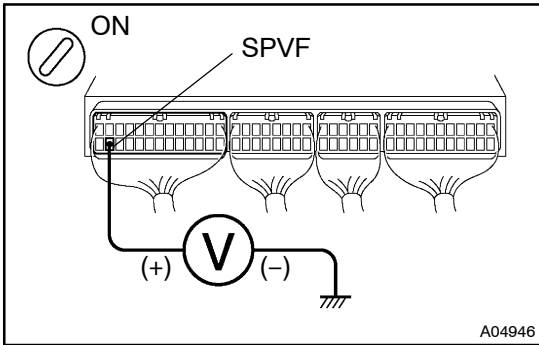
The correct waveform is as shown.

NG

Check and replace engine ECU (See page IN-19).

OK

8 Check voltage between terminal SPVF of engine ECU and body ground.



PREPARATION:

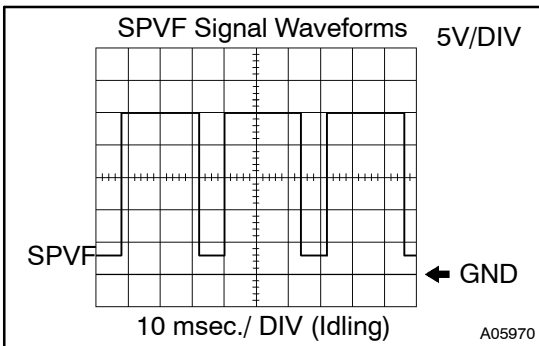
- Remove the glove compartment door.
- Turn the ignition switch ON.

CHECK:

Measure voltage between terminals SPVF of engine ECU and body ground.

OK:

Voltage: 9 –14 V



Reference: INSPECTION USING OSCILLOSCOPE

During idling, check waveform between terminals SPVF and E1 of engine ECU.

HINT:

The correct waveform is as shown.

NG

Check and replace engine ECU
(See page [IN-19](#)).

OK

Check and replace EDU (See page [ED-15](#)).