

D6E140BT7025

1	Fuel injector check
2	Injector No.1
3	Injector No.2
4	Injector No.3
5	Injector No.4
6	Injector driver relay
7	Ignition switch
8	Battery

9	Injector driver module
10	Input circuit
11	Booster circuit
12	Output circuit
13	Fuel injector
14	Hold transistor
15	Valve open transistor
16	GND transistor

Boost Circuit

- The battery positive voltage input via the injector driver relay is boosted up to **100 V**.

Output Circuit

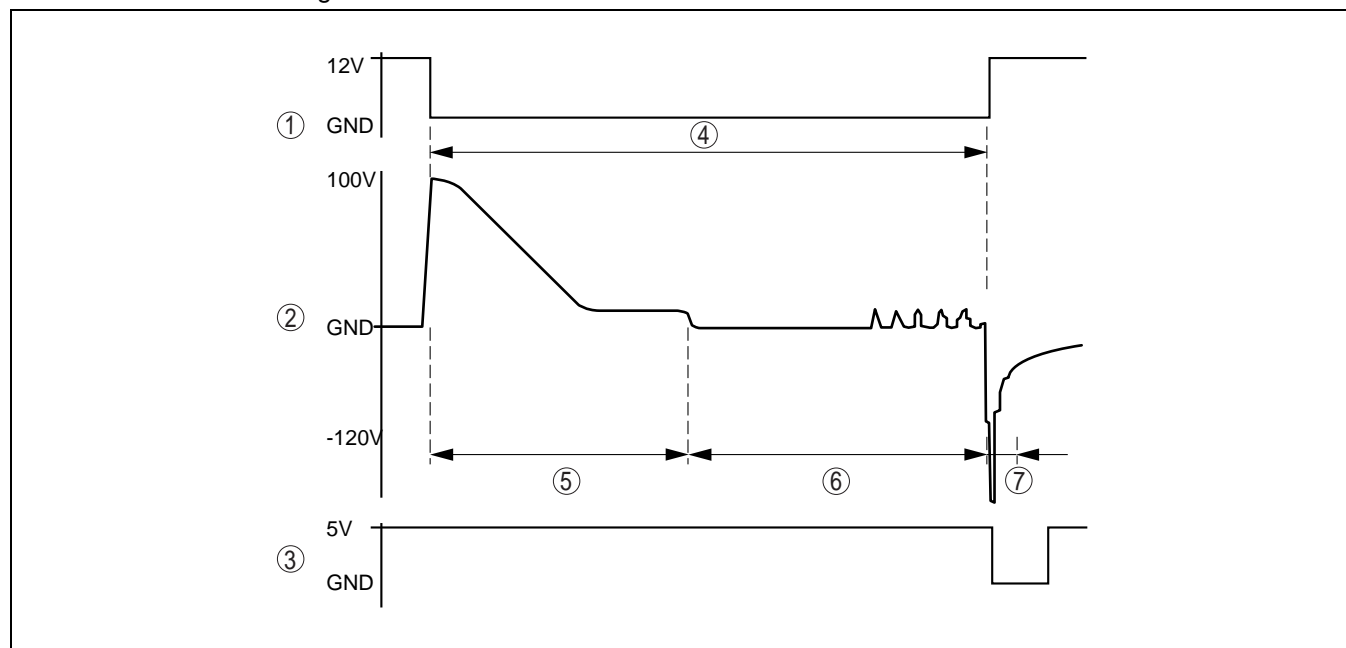
- To improve fuel injection response, the plunger pulling force is strengthened by providing high current (over excitation current) when the fuel injector is open.
- To reduce fuel injector heat generation, the opening of the fuel injector is kept opened using low current after it opens.

Fuel injector status	Injector driver module operation
Opening starts	<ol style="list-style-type: none"> Provides 100 V, boosted by the boost circuit, to the opening transistor (100 V output). When the voltage is provided to the fuel injector and turns on the GND transistor, the fuel injector opens. After the fuel injector is opened, the opening transistor is turned off.
Opening held	<ul style="list-style-type: none"> Controls the on/off of the holding transistor (12 V output) so that the hold current of the fuel injector is constant.

Fuel injector status	Injector driver module operation
Closing	<ul style="list-style-type: none"> Turns off the holding and GND transistors at the same time the fuel injection signal from the PCM is stopped, and cuts the current.

Fuel Injection Verification Circuit

- The fuel injection verification circuit detects the breaking current (surge voltage) generated during the opening, and outputs the injection verification signal to the PCM. The PCM detects a malfunction in the fuel injector circuit based on this signal.



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1	Fuel injector signal input
2	Fuel injector signal output
3	Fuel injector check signal
4	Fuel injector operation period

5	Excess exciting current
6	Hold current
7	Close current

- The fuel injector signal output shown in the figure indicates the waveform when both ends of the fuel injector are measured.