

DTC P1300 Igniter Circuit Malfunction

CIRCUIT DESCRIPTION

The ECM determines the ignition timing, turns on Tr1 at a predetermined angle ($^{\circ}$ CA) before the desired ignition timing and outputs an ignition signal (IGT) "1" to the igniter.

Since the width of the IGT signal is constant, the dwell angle control circuit in the igniter determines the time the control circuit starts primary current flow to the ignition coil based on the engine rpm and ignition timing one revolution ago, that is, the time the Tr2 turns on.

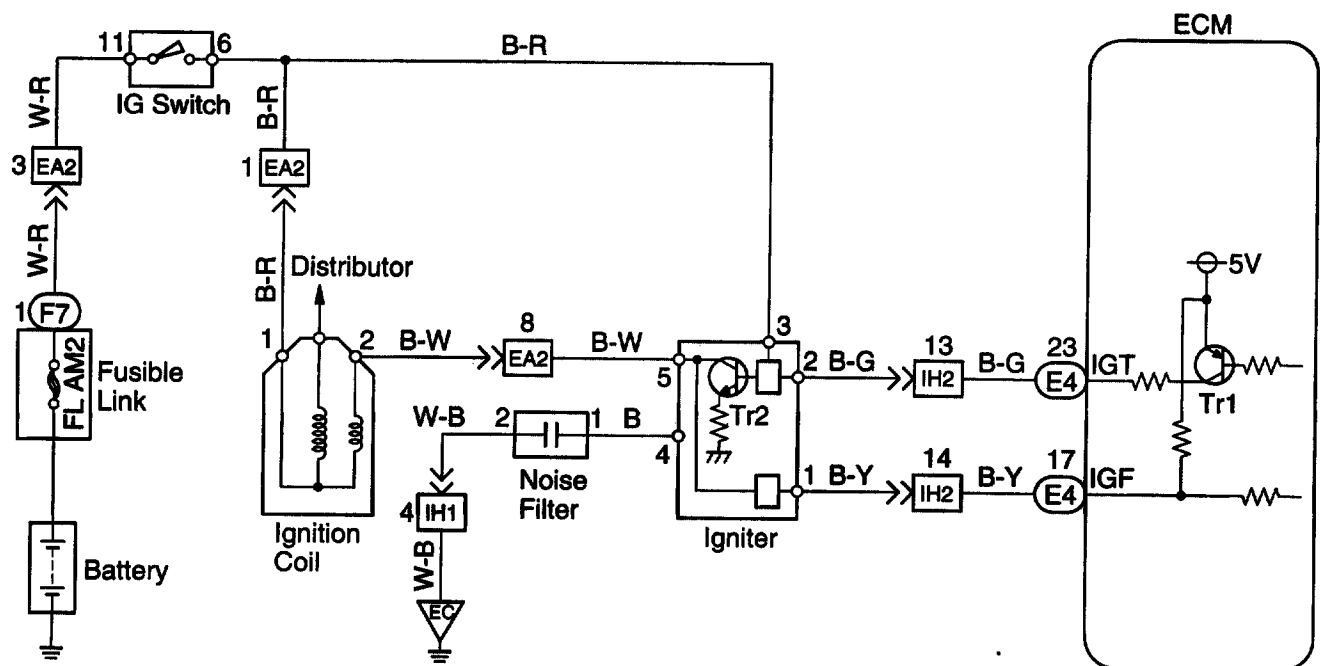
When it reaches the ignition timing, the ECM turns Tr1 off and outputs the IGT signal "0".

This turns Tr2 off, interrupting the primary current flow and generating a high voltage in the secondary coil which causes the spark plug to spark. Also, by the counter electromotive force generated when the primary current is interrupted, the igniter sends an ignition confirmation signal (IGF) to the ECM.

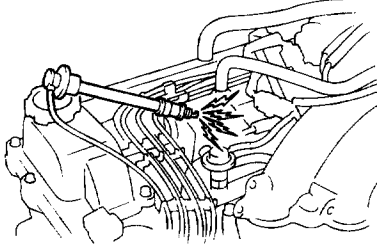
The ECM stops fuel injection as a fail safe function when the IGF signal is not input to the ECM.

DTC No.	Diagnostic Trouble Code Detecting Condition	Trouble Area
P1300	No IGF signal to ECM for 6 consecutive IGT signals during engine running.	- Open or short in IGF or IGT circuit from igniter to ECM. - Igniter - ECM

WIRING DIAGRAM



1 Check for spark.



- P**
- (1) Remove No. 2 and No. 3 cylinder head cover.
 - (2) Disconnect the high-tension cord from spark plug.
 - (3) Remove spark plug.
 - (4) Install spark plug to high-tension cord.
 - (5) Disconnect injector connector.
 - (6) Ground the spark plug.

C Check if spark occurs while engine is being cranked.

NOTICE: To prevent excess fuel being injected from the injectors during this test, do not crank the engine for more than 5 ~ 10 seconds at a time.

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OK

OK Spark jumps across electrode gap.

NG

Go to step **4** .

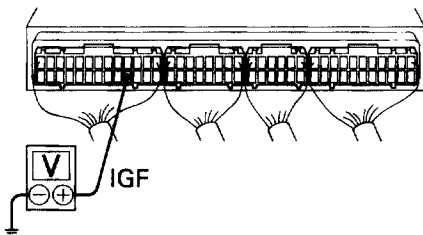
2 Check for open and short in harness and connector in IGF signal circuit between ECM and igniter (See page [IN-26](#)).

OK

NG

Repair or replace harness or connector.

3 Disconnect igniter connector and check voltage between terminal IGF of ECM connector and body ground.



- P**
- (1) Disconnect igniter connector.
 - (2) Remove instrument panel speaker No. 1 panel (See page [EG-173](#)).
 - (3) Turn ignition switch ON.

C Measure voltage between terminal IGF of ECM connector and body ground.

OK Voltage: 4.5 ~ 5.5 V

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NG

OK

Replace igniter.

Check and replace ECM (See page [IN-31](#)).

4 Check voltage between terminal IGT of ECM connector and body ground.

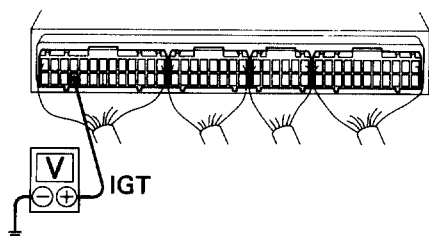


START

P Remove instrument panel speaker No. 1 panel (See page [EG-173](#)).

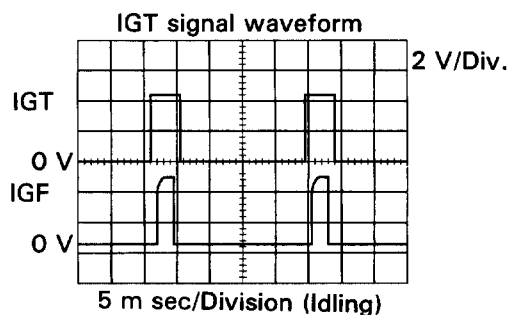
C Measure voltage between terminal IGT of ECM connector and body ground when engine is cranked.

OK Voltage: 0.5 ~ 1.0 V (Neither 0 V nor 5 V)



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Reference INSPECTION USING OSCILLOSCOPE



- During cranking or idling, check waveforms between terminal IGT and E1 of engine control module.

HINT: The correct rectangular waveforms are as shown.

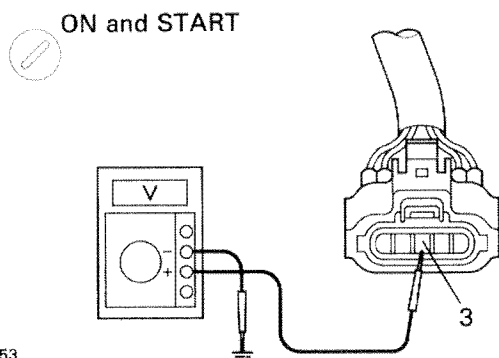
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OK

NG

Go to step **8** .

5 Check voltage between terminal 3 of igniter connector and body ground.

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OK

P Disconnect igniter connector.

C Measure voltage between terminal 3 of igniter connector and body ground, when ignition switch is turned "ON" and "START" position.

OK Voltage: 9 ~ 14 V

NG

Check and repair igniter power source circuit.

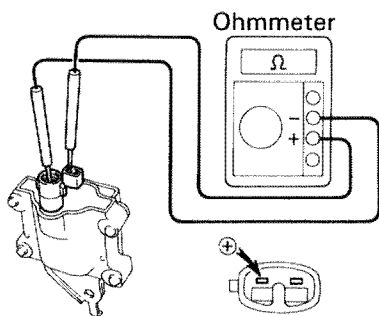
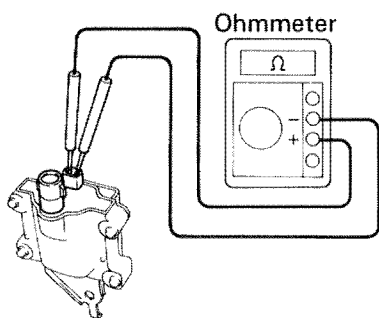
6 Check for open and short in harness and connector between ignition switch and ignition coil, ignition coil and igniter (See page IN-26).

OK

NG

Repair or replace harness or connector.

7 Check ignition coil.

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P08341

OK

- P** (1) Disconnect igniter coil connector.
(2) Disconnect high-tension cord from ignition coil.

- C** (1) Check primary coil.
Measure resistance between the positive (+) and negative (-) terminals.
(2) Check secondary coil.
Measure resistance between the positive (+) and high-tension terminals.

OK

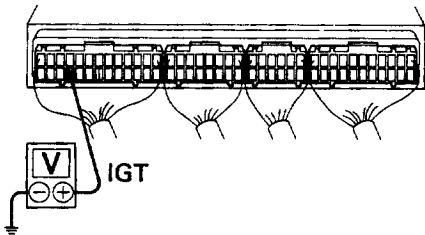
		Resistance
Primary Coil	Cold	0.36 ~ 0.55 Ω
	Hot	0.45 ~ 0.65 Ω
Secondary Coil	Cold	9.0 ~ 15.4 k Ω
	Hot	11.4 ~ 18.1 k Ω

"Cold" is from 10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).

NG

Replace ignition coil.

Replace ignition.

8 Disconnect igniter connector and check voltage between terminal IGT of ECM connector and body ground.

- P** (1) Disconnect igniter connector.
(2) Remove instrument panel speaker No. 1 panel (See page [EG-173](#)).
- C** Measure voltage between terminal IGT of ECM connector and body ground when engine is cranked.
- OK** Voltage: 0.5 ~ 1.0 V (Neither 0 V nor 5 V)

BE6653
P22173**NG****OK**

Replace igniter.

9 Check for open and short in harness and connector in IGT signal circuit between ECM and igniter (See page [IN-26](#)).**OK****NG**

Repair or replace harness or connector.

Check and replace ECM (See page [IN-31](#)).