DTC P0A7A/309 GENERATOR INVERTER PERFORMANCE

CIRCUIT DESCRIPTION

Refer to DTC P0A78 (INF 272) on page 05–571.

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0A7A	309	Abnormality in generator PWM circuit	• Wire harness or connector • w/ converter inverter assembly

MONITOR DESCRIPTION

The HV control ECU monitors the generator PWM circuit. If there is an error in the power transistor actuation signals which are transmitted to the inverter, the HV control ECU interprets this as a malfunction of the generator PWM circuit.
The HV control ECU illuminates the MIL and sets a DTC.

MONITOR STRATEGY

Related DTCs	P0A7A (INF 309): Generator inverter / Generator PWM malfunction
Required sensor/components	Generator inverter
Frequency of operation	Continuous
Duration	TOYOTA's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	TOYOTA's intellectual property
Other conditions belong to TOYOTA's intellectual property	–

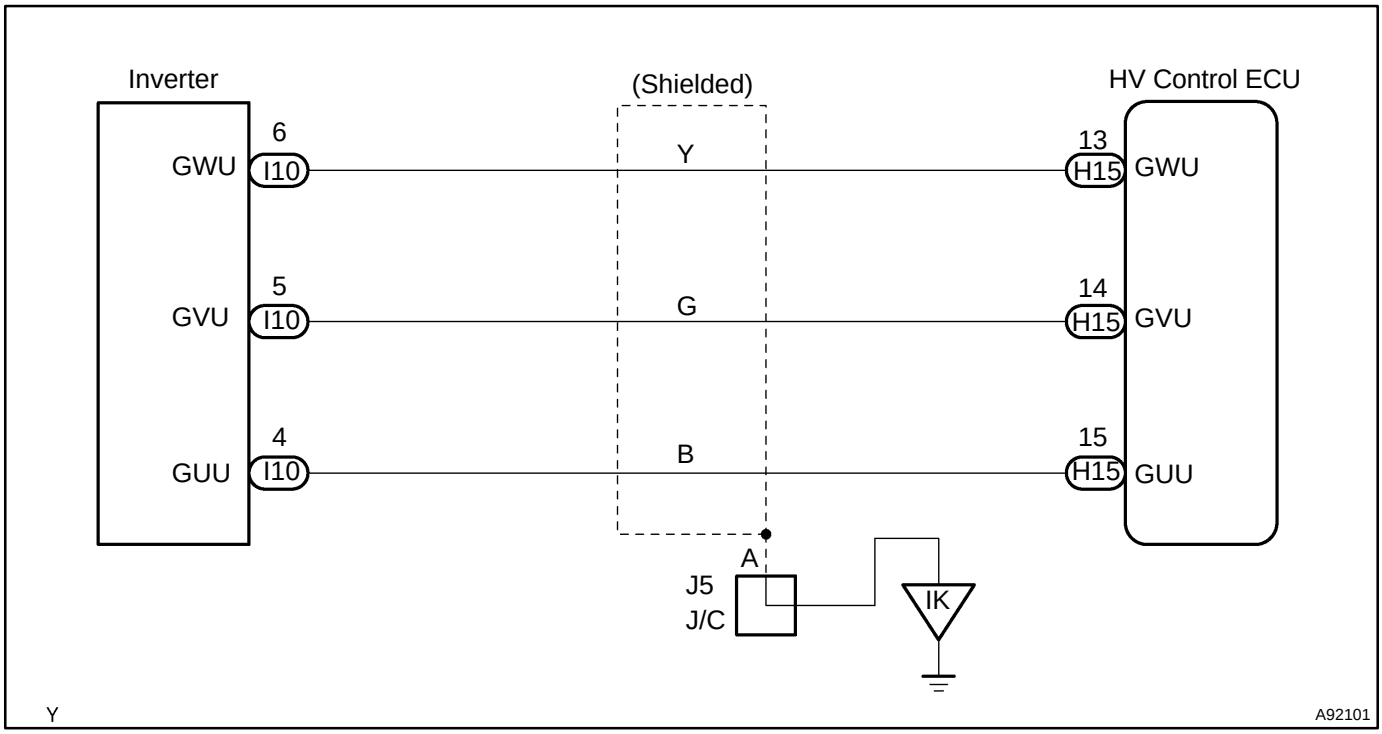
TYPICAL MALFUNCTION THRESHOLDS

Power transistor actuation signal	Abnormal

COMPONENT OPERATING RANGE

Generator inverter	DTC P0A7A (INF 309) is not detected

WIRING DIAGRAM



INSPECTION PROCEDURE

CAUTION:

- **Before inspecting the high–voltage system, take safety precautions to prevent electrical shocks, such as wearing insulated gloves and removing the service plug grip. After removing the service plug grip, put it in your pocket to prevent other technicians from reconnecting it while you are servicing the high–voltage system.**
- **After disconnecting the service plug grip, wait at least for 5 minutes before touching any of the high–voltage connectors or terminals.**

HINT:

At least 5 minutes is required to discharge the high–voltage condenser inside the inverter.

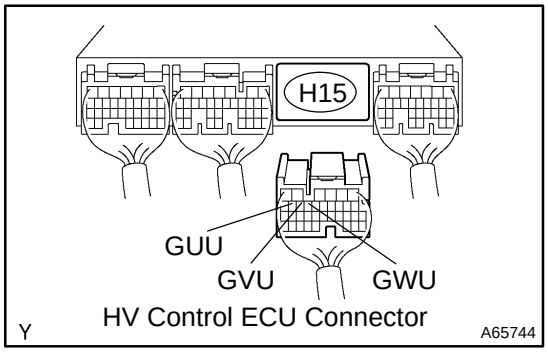
1	READ OUTPUT DTC(HV ECU)

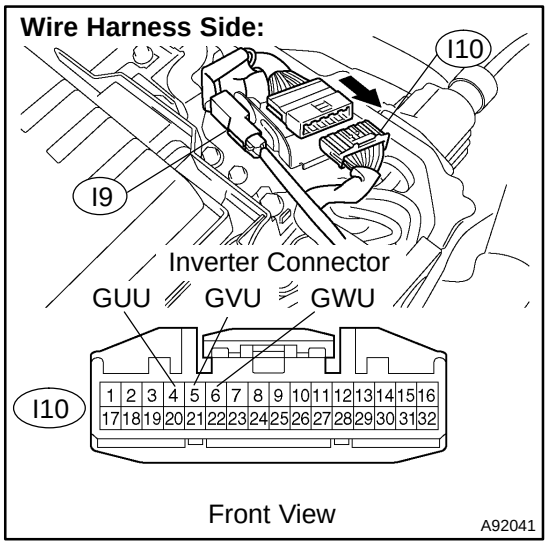
(a) Connect the hand–held tester to the DLC3.
(b) Turn the power switch ON (IG).
(c) Turn the hand–held tester ON.
(d) On the hand–held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / HV ECU / DTC INFO / TROUBLE CODES.
(e) Read DTCs.
Result: DTC P0A1D is output

YES → **GO TO RELEVANT DTC CHART (See page 05–440)**

NO

2	CHECK HARNESS AND CONNECTOR(HYBRID VEHICLE CONTROL ECU – INVERTER)





CAUTION:
Wear insulated gloves before performing the following operation.

(a) Turn the power switch OFF.
(b) Remove the service plug grip (see page 21–116).

NOTICE:
Turning the power switch ON (READY) with the service plug grip removed could cause malfunction. Therefore, never turn the power switch ON (READY) in this state.

(c) Remove the inverter cover (see page 21–23).
(d) Disconnect the H15 HV control ECU connector.
(e) Disconnect the I10 inverter connector.
(f) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
GUU (H15–15) – GUU (I10–4)	Below 1 Ω
GVU (H15–14) – GVU (I10–5)	Below 1 Ω
GWU (H15–13) – GWU (I10–6)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
GUU (H15–15) or GUU (I10–4) – Body ground	10 kΩ or higher
GVU (H15–14) or GVU (I10–5) – Body ground	10 kΩ or higher
GWU (H15–13) or GWU (I10–6) – Body ground	10 kΩ or higher

(g) Reconnect the inverter connector.
(h) Reconnect the HV control ECU connector.
(i) Reinstall the inverter cover (see page 21–23).
(j) Reinstall the service plug grip (see page 21–116).

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE W/CONVERTER INVERTER ASSY (See page 21–23)