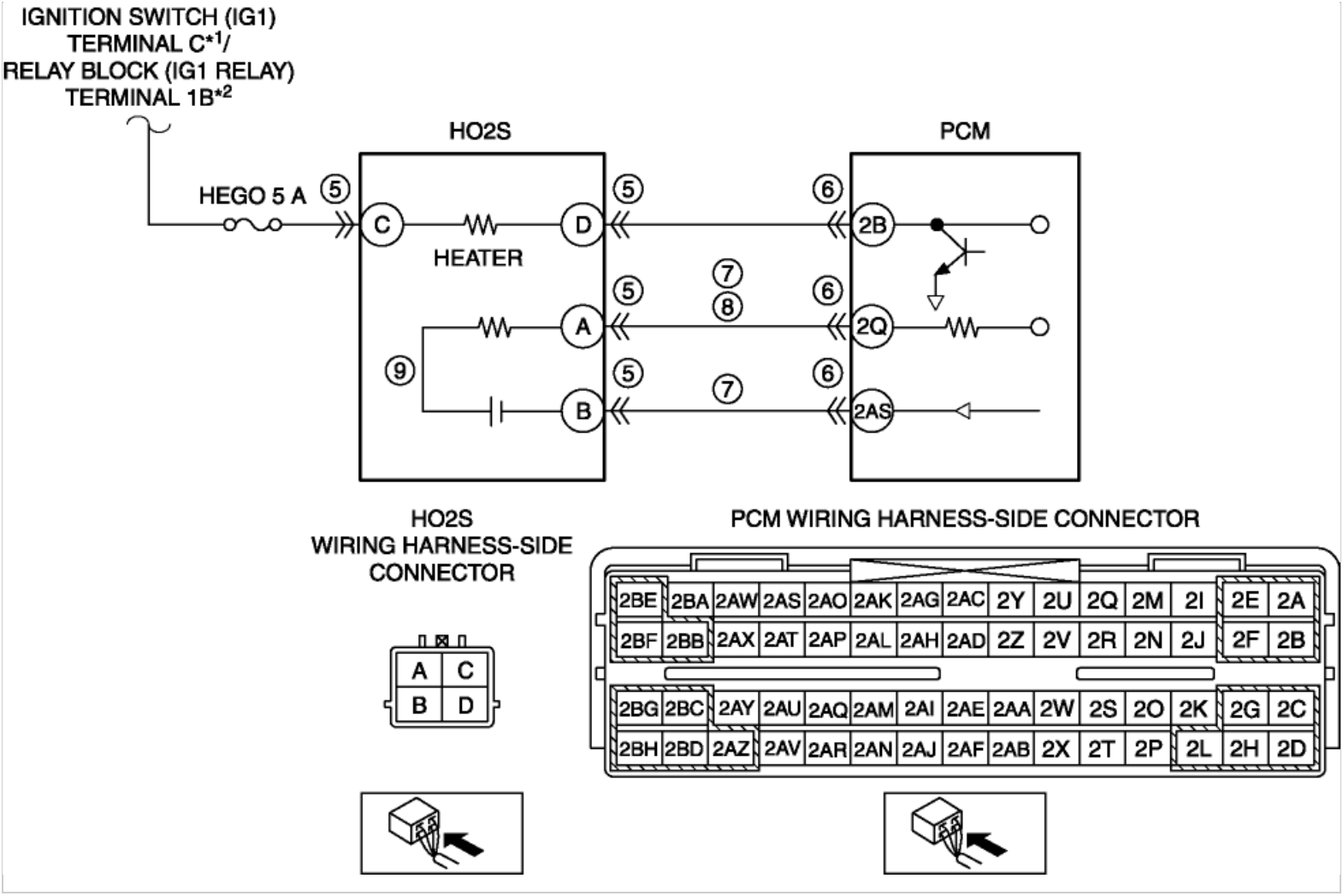
2012 - Mazda6 - Engine

DTC P0138:00 [MZR 2.5]

DTC P0138:00	HO2S circuit high input
DETECTION CONDITION	• The PCM monitors input voltage from HO2S. If the input voltage from the HO2S is **above 1.2 V** or HO2S bias voltage **above 1.7 V** for **5 s**, the PCM determines that circuit input is high. **Diagnostic support note** • This is a continuous monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
POSSIBLE CAUSE	• HO2S connector or terminal malfunction • PCM connector or terminal malfunction • Short circuit in HO2S circuit each other • Short to power supply in wiring harness between HO2S terminal A and PCM terminal 2Q • HO2S malfunction • PCM malfunction



*1

Vehicles without advanced keyless entry and push button start system

*2

Vehicles with advanced keyless entry and push button start system

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0138:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See **DTC TABLE [MZR 2.5]**.)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability.	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the

	Is any related repair information available?		next step.
		No	Go to the next step.
4	**VERIFY RELATED PENDING OR STORED DTC** • Switch the ignition to off, then to the ON (engine off). • Verify pending code or stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Are any other DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	Go to the next step.
5	**INSPECT HO2S CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the HO2S connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 10.
		No	Go to the next step.
6	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 10.
		No	Go to the next step.
7	**INSPECT HO2S CIRCUIT FOR SHORT EACH OTHER** • HO2S and PCM connectors are disconnected. • Inspect for continuity between HO2S terminal A and B (wiring harness-side). • Is there continuity?	Yes	Repair or replace the malfunctioning wiring harness, then go to Step 10.
		No	Go to the next step.
8	**INSPECT HO2S SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • HO2S and PCM connectors are disconnected. • Switch the ignition to ON (engine off). • Measure the voltage between HO2S terminal A (wiring harness-side) and body ground. • Is there any voltage?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 10.
		No	Go to the next step.
9	**INSPECT HO2S** • Reconnect all disconnected connectors. • Inspect the HO2S. (See **HEATED OXYGEN SENSOR (HO2S) INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the HO2S, then go to the next step. (See **HEATED OXYGEN SENSOR (HO2S) REMOVAL/ INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
10	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.)	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZR 2.5]**.) Go to the next step.

	• Perform the KOEO or KOER self test. (See **KOEO/ KOER SELF TEST [MZR 2.5]**.) • Is the PENDING CODE for this DTC present?	No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

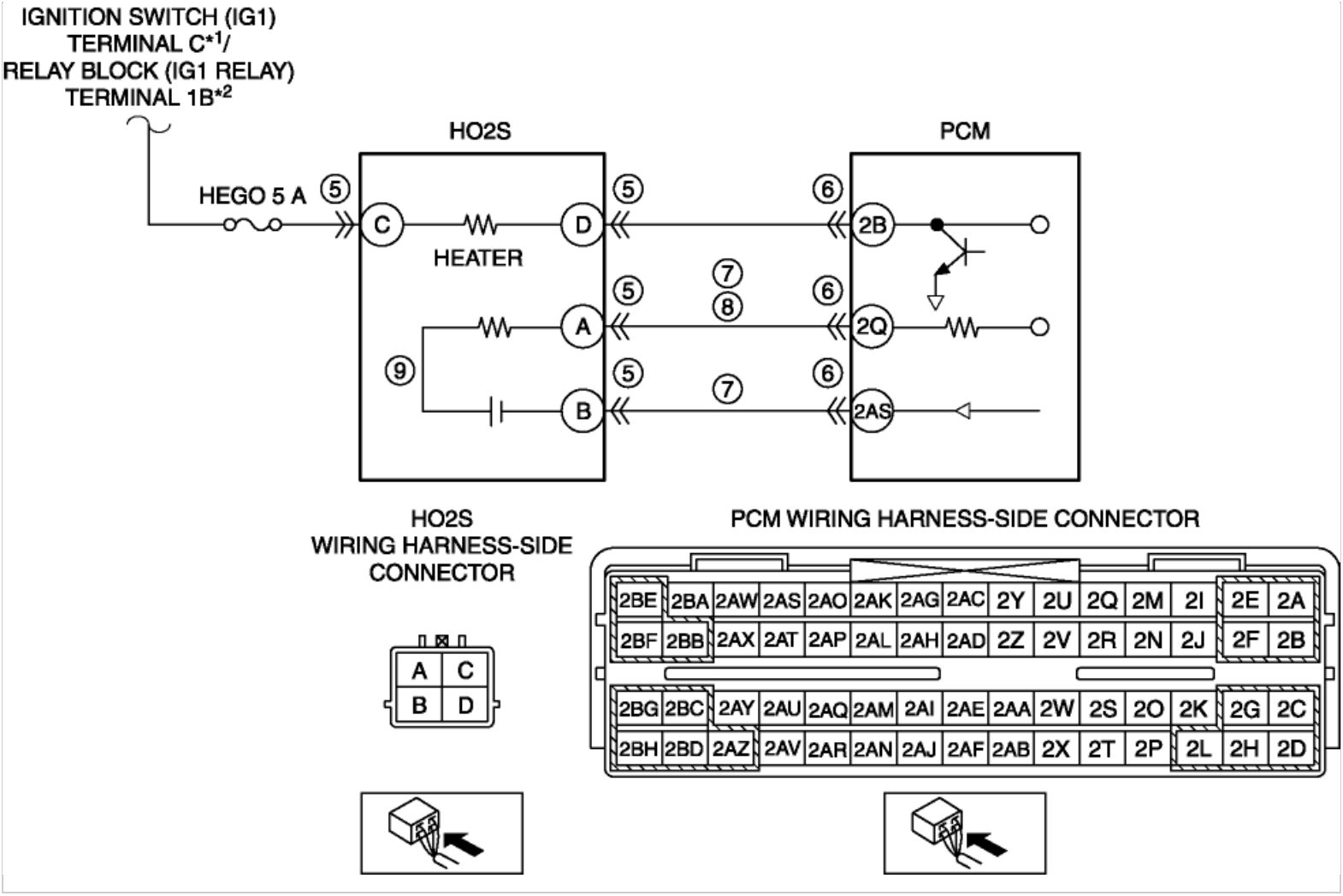
< Previous **Next >**

Back to Top

2012 - Mazda6 - Engine

DTC P0138:00 [MZR 2.5]

DTC P0138:00	HO2S circuit high input
DETECTION CONDITION	• The PCM monitors input voltage from HO2S. If the input voltage from the HO2S is **above 1.2 V** or HO2S bias voltage **above 1.7 V** for **5 s**, the PCM determines that circuit input is high. **Diagnostic support note** • This is a continuous monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
POSSIBLE CAUSE	• HO2S connector or terminal malfunction • PCM connector or terminal malfunction • Short circuit in HO2S circuit each other • Short to power supply in wiring harness between HO2S terminal A and PCM terminal 2Q • HO2S malfunction • PCM malfunction



*1

Vehicles without advanced keyless entry and push button start system

*2

Vehicles with advanced keyless entry and push button start system

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0138:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See **DTC TABLE [MZR 2.5]**.)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability.	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the

	Is any related repair information available?		next step.
		No	Go to the next step.
4	**VERIFY RELATED PENDING OR STORED DTC** • Switch the ignition to off, then to the ON (engine off). • Verify pending code or stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Are any other DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	Go to the next step.
5	**INSPECT HO2S CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the HO2S connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 10.
		No	Go to the next step.
6	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 10.
		No	Go to the next step.
7	**INSPECT HO2S CIRCUIT FOR SHORT EACH OTHER** • HO2S and PCM connectors are disconnected. • Inspect for continuity between HO2S terminal A and B (wiring harness-side). • Is there continuity?	Yes	Repair or replace the malfunctioning wiring harness, then go to Step 10.
		No	Go to the next step.
8	**INSPECT HO2S SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • HO2S and PCM connectors are disconnected. • Switch the ignition to ON (engine off). • Measure the voltage between HO2S terminal A (wiring harness-side) and body ground. • Is there any voltage?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 10.
		No	Go to the next step.
9	**INSPECT HO2S** • Reconnect all disconnected connectors. • Inspect the HO2S. (See **HEATED OXYGEN SENSOR (HO2S) INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the HO2S, then go to the next step. (See **HEATED OXYGEN SENSOR (HO2S) REMOVAL/ INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
10	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.)	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZR 2.5]**.) Go to the next step.

	• Perform the KOEO or KOER self test. (See **KOEO/ KOER SELF TEST [MZR 2.5]**.) • Is the PENDING CODE for this DTC present?	No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

< Previous **Next >**

Back to Top