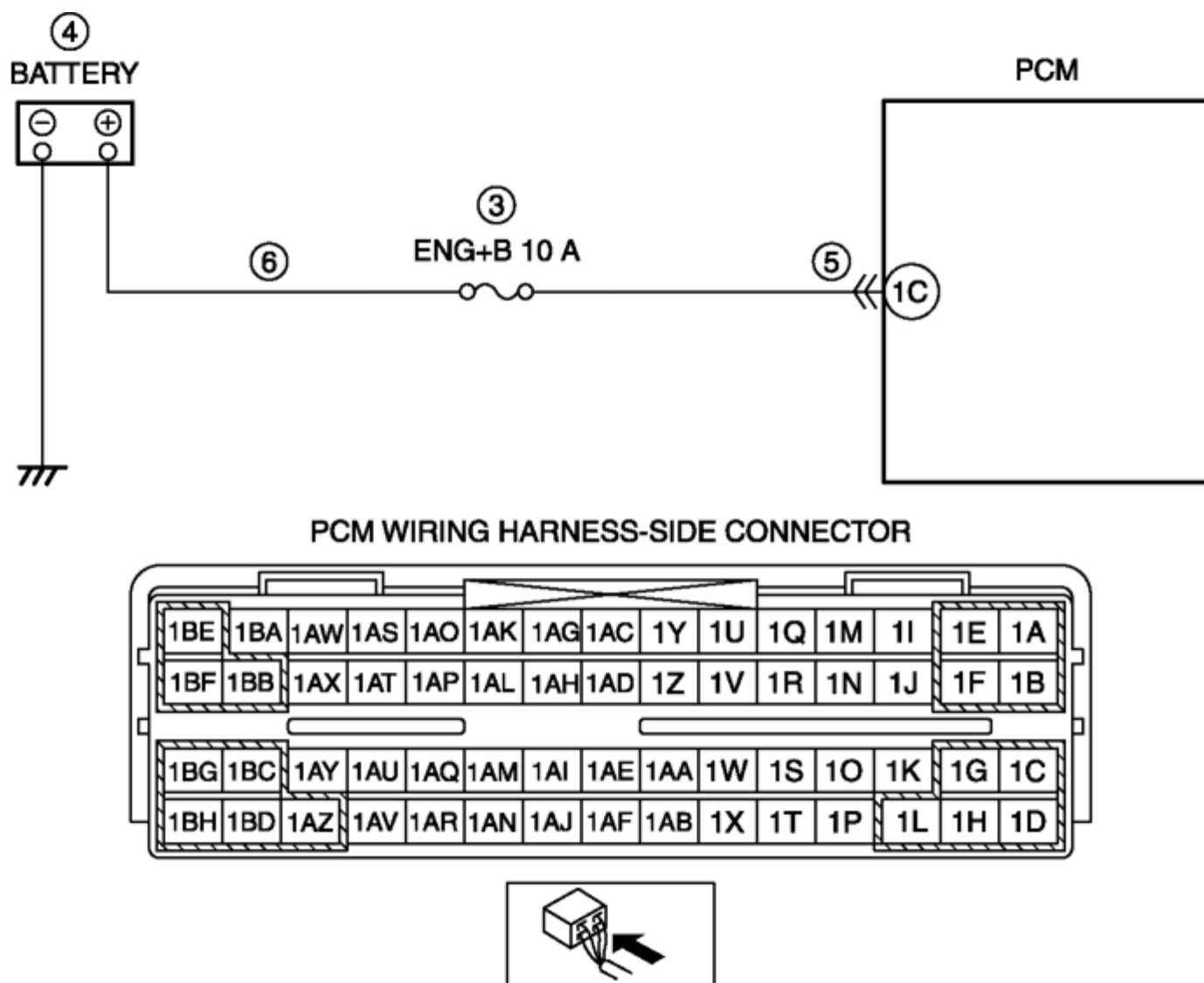


2012 - Mazda6 - Engine

DTC P2507:00 [MZR 2.5]

DTC P2507:00	PCM battery voltage low
DETECTI ON CONDI TI ON	• The PCM monitors the voltage of back-up battery positive terminal. If the PCM detects battery positive terminal voltage below 6 Vfor 5 s when the battery voltage is more than 8 V, the PCM determines that the backup voltage circuit has a malfunction. Diagnostic support note • This is a continuous monitor (CCM). • The MIL illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot is available. • The DTC is stored in PCM memory.
POSSI BLE CAUSE	• ENG+B 10 A fuse malfunction • Battery malfunction • PCM connector or terminal malfunction • Short to ground in wiring harness between battery positive terminal and PCM terminal 1C • Open circuit in wiring harness between battery positive terminal and PCM terminal 1C • PCM malfunction



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED	Yes Go to the next step.
	Has the FREEZE FRAME DATA (Mode 2)/snapshot data been recorded?	No Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY	Yes Perform repair or diagnosis according to the available repair information.
	- Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	If the vehicle is not repaired, go to the next step. No Go to the next step.
	INSPECT FUSE	

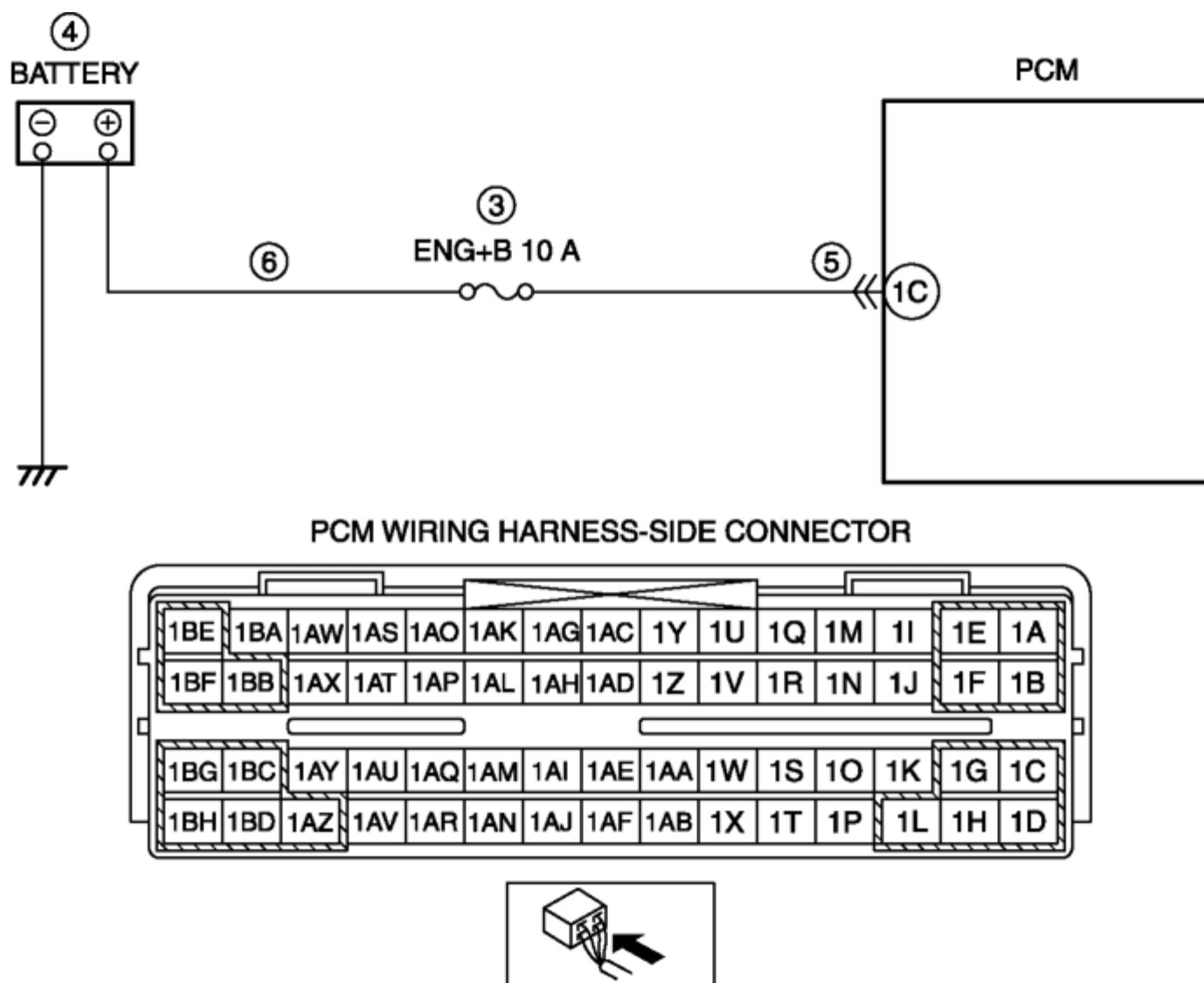
3	• Switch the ignition to off. • Disconnect the negative battery cable. • Remove the ENG+B 10 A fuse. • Inspect the ENG+B 10 A fuse. • Is there any malfunction?	Yes	Replace the ENG+B 10 A fuse, then go to Step 7.
		No	Go to the next step.
4	INSPECT BATTERY • Inspect the battery. (See BATTERY INSPECTION [MZR 2.5].) • Is there any malfunction?	Yes	Recharge or replace the battery, then go to Step 7. (See BATTERY RECHARGING [MZR 2.5] .) (See BATTERY REMOVAL/ INSTALLATION [MZR 2.5] .)
		No	Go to the next step.
5	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 7.
		No	Go to the next step.
6	INSPECT PCM MONITOR CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT • PCM connector is disconnected. • Install the ENG+B 10 A fuse. • Reconnect the negative battery cable. • Switch the ignition to ON (engine off). • Measure the voltage between PCM terminal 1C (wiring harness-side) and body ground. • Is the voltage B+ ?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to ground or open circuit, then go to the next step.
7	VERIFY DTC TROUBLESHOOTING COMPLETED • Make sure to reconnect all disconnected connectors. • Install the ENG+B 10 A fuse. • Reconnect the negative battery	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5].)

	cable. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Perform the KOEO or KOER self test. (See KOEO/ KOER SELF TEST [MZR 2.5].) • Is the same DTC present?		Go to the next step.
		No	Go to the next step.
8	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.

2012 - Mazda6 - Engine

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DTC P2507:00	PCM battery voltage low
DETECTI ON CONDI TI ON	• The PCM monitors the voltage of back-up battery positive terminal. If the PCM detects battery positive terminal voltage below 6 Vfor 5 s when the battery voltage is more than 8 V, the PCM determines that the backup voltage circuit has a malfunction. Diagnostic support note • This is a continuous monitor (CCM). • The MIL illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot is available. • The DTC is stored in PCM memory.
POSSI BLE CAUSE	• ENG+B 10 A fuse malfunction • Battery malfunction • PCM connector or terminal malfunction • Short to ground in wiring harness between battery positive terminal and PCM terminal 1C • Open circuit in wiring harness between battery positive terminal and PCM terminal 1C • PCM malfunction



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED	Yes Go to the next step.
	Has the FREEZE FRAME DATA (Mode 2)/snapshot data been recorded?	No Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY	Yes Perform repair or diagnosis according to the available repair information.
	- Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	If the vehicle is not repaired, go to the next step. No Go to the next step.
	INSPECT FUSE	

3	• Switch the ignition to off. • Disconnect the negative battery cable. • Remove the ENG+B 10 A fuse. • Inspect the ENG+B 10 A fuse. • Is there any malfunction?	Yes	Replace the ENG+B 10 A fuse, then go to Step 7.
		No	Go to the next step.
4	INSPECT BATTERY • Inspect the battery. (See BATTERY INSPECTION [MZR 2.5].) • Is there any malfunction?	Yes	Recharge or replace the battery, then go to Step 7. (See BATTERY RECHARGING [MZR 2.5] .) (See BATTERY REMOVAL/ INSTALLATION [MZR 2.5] .)
		No	Go to the next step.
5	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 7.
		No	Go to the next step.
6	INSPECT PCM MONITOR CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT • PCM connector is disconnected. • Install the ENG+B 10 A fuse. • Reconnect the negative battery cable. • Switch the ignition to ON (engine off). • Measure the voltage between PCM terminal 1C (wiring harness-side) and body ground. • Is the voltage B+ ?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to ground or open circuit, then go to the next step.
7	VERIFY DTC TROUBLESHOOTING COMPLETED • Make sure to reconnect all disconnected connectors. • Install the ENG+B 10 A fuse. • Reconnect the negative battery	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5].)

	cable. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Perform the KOEO or KOER self test. (See KOEO/ KOER SELF TEST [MZR 2.5].) • Is the same DTC present?		Go to the next step.
		No	Go to the next step.
8	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.