



Applies To: 2003–12 Accord, 2005–07 Accord Hybrid, 2006–12 Civic and Civic Hybrid, 2010–12 Crosstour, 2005–12 CR-V, 2011–12 CR-Z, 2003–11 Element, 2007–12 Fit, 2010–12 Insight, 2005–12 Odyssey, 2005–12 Pilot, 2006–12 Ridgeline, 2006–09 S2000

DTC P0685 (ECM/PCM Power Control Circuit/Internal Circuit Malfunction)

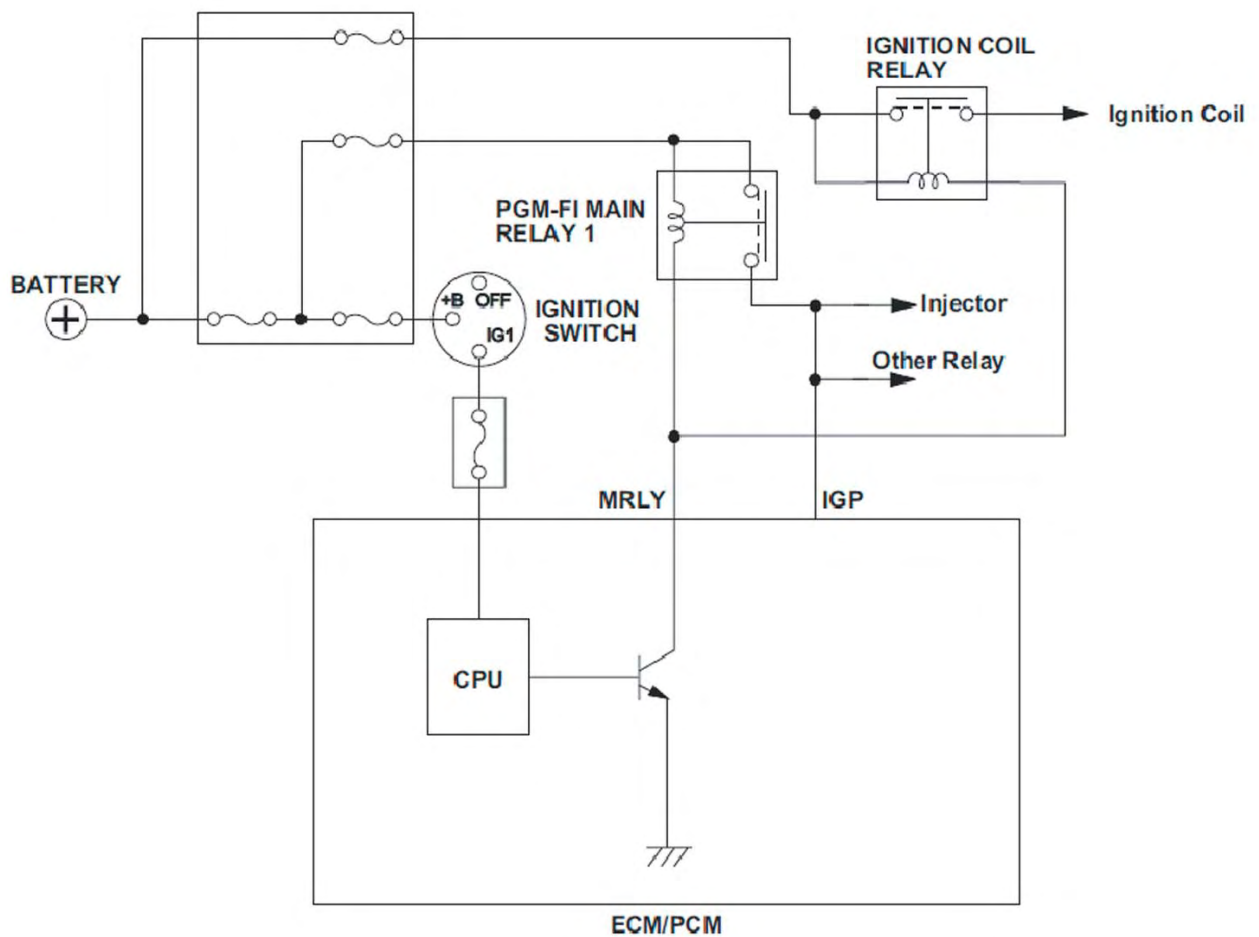
Two conditions can set DTC P0685:

- An internal ECM/PCM circuit malfunction.
- An improper ECM/PCM shut-down process. The ECM/PCM has a specific shut-down process: When the ignition signal (IG1) is turned off, the ECM/PCM stays on for a brief period, doing various diagnostic tests. After those tests (which take only milliseconds), it cuts the ground signal (MRLY) that controls PGM-FI main relay 1, turning the relay off.

When the ECM/PCM activates main relay 1 with the MRLY circuit, the relay sends battery voltage to the ECM/PCM through the IGP circuit. If that circuit going into the ECM/PCM intermittently loses voltage or the voltage intermittently drops too low while the ECM/PCM is commanding the main relay ON, the ECM/PCM shuts down, setting DTC P0685.

This job aid identifies the causes of an improper shutdown process, which are usually intermittent.

For some models, the service information may indicate the MRLY circuit as FI_MAIN_RLY_CL and the IGP as FI_MAIN_RLY_OUT.



Problem Verification:

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for **30 seconds**.
4. Turn the ignition switch to LOCK (0).
5. Turn the ignition switch to ON (II).
6. Check for pending or confirmed DTCs with the HDS.

Is DTC P0685 indicated?

Yes – The failure is duplicated. Update the ECM/PCM if it doesn't have the latest software, or substitute a known-good ECM/PCM, then do the repair verification at step 16.

No – There is an intermittent failure. Go to step 7.

Intermittent Failure Checks:

7. Check the battery condition with the GR8 battery tester, and replace the battery if needed.
8. Check the positive and negative battery cable terminal connections and the ground connections at the engine and the transmission.
9. Start the engine and let it idle. Then turn on the headlights on high beam, and turn on the A/C with the fan on high. This will warm up the battery cables and other electrical components to prepare them for hot (normal) condition testing. Let the engine idle for **30 minutes**. Then turn it off.
10. Turn the ignition switch to ON (II), and leave the headlights on and the fan on high.
11. Do a voltage drop measurement of the positive and negative battery cables. Flex the cables while monitoring the voltage drop. If the drop is more than about **0.3 volts**, replace the faulty cable.
12. Turn the ignition switch to LOCK (0) and turn the headlights off.
13. Do these checks:
 - Check for an intermittent short to ground in the positive battery cable and the B+ alternator cable.
 - Check the PGM-FI main relay 1 terminals in the under-hood fuse/relay box. If faulty, replace the under-hood fuse/relay box.
 - Check the PGM-FI main fuses and their connections.
 - Check the ground circuits between terminal G101 and the ECM/PCM. Make sure the proper thread-cutting bolt is in place at the ground terminal.
 - Check for poor or loose connections (potential opens) in the following circuits between the ECM/PCM and PGM-FI main relay 1 in the under-hood fuse/relay box.
 - MRLY (also called FI_MAIN_RLY_CL- on some models)
 - IGP (also called FI_MAIN_RLY_OUT on some models)
14. Test PGM-FI main relay 1, or substitute a known-good relay.
15. If everything checks out, then the vehicle is OK; return the vehicle to the customer.

Repair Verification:

16. Start the engine, and let it idle for **30 seconds**.
17. Turn the ignition switch to LOCK (0).
18. Turn the ignition switch to ON (II).
19. Check for pending or confirmed DTCs with the HDS.

Is DTC P0685 indicated?

Yes – If the ECM/PCM was updated, substitute a known-good ECM/PCM.

No – Troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM. If any other pending or confirmed DTCs are indicated, go to the troubleshooting for those DTC's.

NOTE: A repair verification will only confirm an ECM/PCM failure. A vehicle with an intermittent problem may still pass the repair verification.