## DTC Troubleshooting (cont'd)

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see page 11-213), or substitute a known-good ECM/PCM (see page 11-7).
20. Check for Pending or Confirmed DTCs with the HDS.

    *Is DTC P0112 indicated?*

    **YES**–Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    **NO**–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-215). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

### **DTC P0113:** IAT Sensor Circuit High Voltage

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- Information marked with an asterisk (*1) applies to '09-10 models and '11-12 models (M/T).
- Information marked with an asterisk (*2) applies to '11-12 models (A/T).

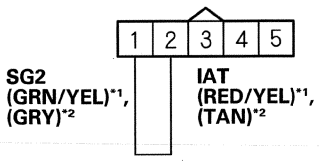
1. Turn the ignition switch to ON (II).
2. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

   *Is about −40 °F (−40 °C) or less, or 4.90 V or higher indicated?*

   **YES**–Go to step 3.

   **NO**–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Connect MAF sensor/IAT sensor 5P connector terminals No. 1 and No. 2 with a jumper wire.

**MAF SENSOR/IAT SENSOR 5P CONNECTOR**




**JUMPER WIRE**

Wire side of female terminals

6. Turn the ignition switch to ON (II).
7. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

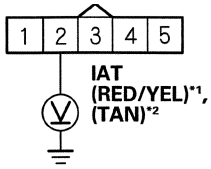
   *Is about −40 °F (−40 °C) or less, or 4.90 V or higher indicated?*

   **YES**–Go to step 8.

   **NO**–Go to step 20.
8. Turn the ignition switch to LOCK (0).

9. Remove the jumper wire from the MAF sensor/IAT sensor 5P connector.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between MAF sensor/IAT sensor 5P connector terminal No. 2 and body ground.

**MAF SENSOR/IAT SENSOR 5P CONNECTOR**




Wire side of female terminals

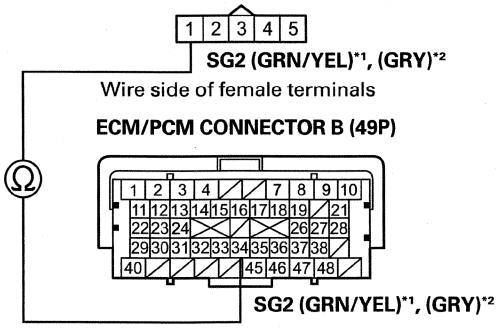
*Is there about 5 V?*

**YES**–Go to step 12.

**NO**–Go to step 16.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (49P).
15. Check for continuity between ECM/PCM connector terminal B34 and MAF sensor/IAT sensor 5P connector terminal No. 1.

**MAF SENSOR/IAT SENSOR 5P CONNECTOR**




Terminal side of female terminals

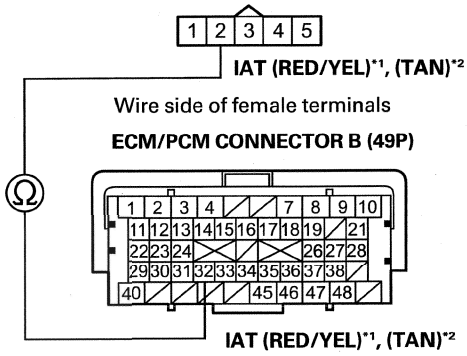
*Is there continuity?*

**YES**–Go to step 27.

**NO**–Repair an open in the wire between the ECM/PCM (B34) and the IAT sensor, then go to step 22.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector B (49P).
19. Check for continuity between ECM/PCM connector terminal B32 and MAF sensor/IAT sensor 5P connector terminal No. 2.

**MAF SENSOR/IAT SENSOR 5P CONNECTOR**




Terminal side of female terminals

*Is there continuity?*

**YES**–Go to step 27.

**NO**–Repair an open in the wire between the ECM/PCM (B32) and the IAT sensor, then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace the MAF sensor/IAT sensor (see page 11-211).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-268).
26. Check for Pending or Confirmed DTCs with the HDS.

*Is DTC P0113 indicated?*

**YES**–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

**NO**–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

## DTC Troubleshooting (cont'd)

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-213), or substitute a known-good ECM/PCM (see page 11-7).
29. Check for Pending or Confirmed DTCs with the HDS.

    *Is DTC P0113 indicated?*

    **YES**–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    **NO**–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-215). If any Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

### **DTC P0116:** ECT Sensor 1 Range/Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   *Is about 176 °F (80 °C) or more, or 0.78 V or less indicated?*

   **YES**–Go to step 6.

   **NO**–Go to step 3.
3. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   *Does ECT SENSOR 1 change 18 °F (10 °C) or more?*

   **YES**–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■

   **NO**–Go to step 11.
6. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
7. Turn the ignition switch to LOCK (0).
8. Open the hood, and let the engine cool for 3 hours.
9. Turn the ignition switch to ON (II).
10. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    *Did ECT SENSOR 1 change 18 °F (10 °C) or more from the value in step 6 ?*

    **YES**–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■

    **NO**–Go to step 11.