

## Coolant Temperature Sensor – 2009-2016 3.5L Chevrolet Impala

### Required Tools

- Socket Wrench
- 8 mm Socket
- Pliers or Vice Grips
- 19 mm Ratcheting Wrench
- Pan
- Coolant
- Funnel
- Tarp

### General Repair Steps

1. Remove Coolant Fill Cap.
2. Place pan underneath Radiator to collect coolant.
3. Loosen Petcock on the Radiator, and allow coolant to drain.
4. Remove the Oil Filler Cap.
5. Remove the Engine Cover and replace the Oil Filler Cap.
6. Disconnect the Air Flow Sensor Connector.
7. Loosen the clamps on the Intake boot using a 8 mm socket.
8. Remove the PCV Line from the Intake Boot.
9. Disconnect the Throttle Body connector.
10. Remove the Intake Boot.
11. Remove the Filter Cover.
12. Loosen hose clamps on Heater Hoses.
13. Remove hoses from Heater Pipe.
14. Remove 10 mm bolts from Heater Pipe.

*Disclaimer: The above list is meant to aid you during your repair, and is meant to be used in conjunction with the corresponding Fear No Fix repair video.*

15. Move Heater Pipe to the side.
16. Disconnect the Coolant Temperature Sensor Connector.
17. Using a 19 mm Ratcheting Wrench, remove the Coolant Temperature Sensor.
18. Screw in the new Coolant Temperature Sensor (ensure all surfaces are clean and the new sensor came with a washer installed).
19. Plug in the Coolant Temperature Sensor Connector.
20. Put the Heater Pipe back in place.
21. Secure the Heater Pipe with the two 10 mm bolts, and torque to 89 inch pounds.
22. Put the Heater Hoses back in place, and tighten with hose clamps.
23. Reinstall the Filter Cover.
24. Put the Intake Boot back in place, and tighten the hose clamps.
25. Reconnect the PCV Line, Air Flow Sensor, and Throttle Body connectors.
26. Insert a funnel into the Coolant Filler and pour coolant in until it reaches the top of the filler opening.
27. Squeeze the Coolant Hose to allow some air out of the system, and then top up the coolant.
28. Remove the Oil Filler Cap, replace the Engine Cover, and replace the Oil Filler Cap.
29. Put the Coolant Filler Cap on just enough to engage the threads (this is to avoid building up too much pressure which can result in spraying hot coolant when opening the Filler Cap in later steps).
30. Start the engine and run at 2500 rpm for 40 seconds.
31. Carefully remove the Coolant Filler Cap and top up the coolant.
32. Replace the Coolant Filler Cap just enough to engage the threads.
33. Start the engine and run at 2500 rpm for 30 seconds.

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- 34.** Carefully remove the Coolant Filler Cap and top up the coolant.
- 35.** Replace the Coolant Filler Cap just enough to engage the threads.
- 36.** Start the engine and run at 2500 rpm for 20 seconds.
- 37.** Carefully remove the Coolant Filler Cap and top up the coolant.
- 38.** Fill the Coolant Bottle with 400 ml of coolant.
- 39.** Replace the Coolant Filler Cap and tighten completely.
- 40.** Start the engine and run at 2500rpm until engine is heated.
- 41.** Bring engine up to 3000 rpm for 4 seconds, then let it drop to idle for 4 seconds (do this three times).
- 42.** Shut off the engine at let it cool.
- 43.** When the engine is cool, top up the coolant in the Coolant Bottle.