



Preliminary Information

PIC6397E Battery Draw - Unable to Turn The Engine Off - Diagnostic Tips

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Camaro	2016 - 2023	All	All	All	All

Involved Region or Country	North America, Republic of Korea
Condition	Some customers may comment on a dead battery when they attempt to start the vehicle. Others may notice a CEL illuminated and a tech may find that the vehicle is setting a P2535 among other DTCs. Depending on when this issue may occur, the customer may be unable to turn the engine off. He or she may press the Ignition Mode Switch (IMS) but the engine continues to run. Technicians may also find a parasitic battery draw.
Cause	This concern may be caused by unwanted voltage that is present on the bus of ignition fuses that are normally powered up by the Ignition Main Relay (KR73) in the Underhood Fuse Block (X50A). These fuses should have 0v present when the ignition is turned off. If there is any voltage present at all, this may keep the Ignition Main Relay (KR73) powered up and the customer / tech may be unable to turn the engine off. The servicing technician will have to check for the presence of voltage on this bus using a Digital Multimeter (DMM). A test lamp will not work to diagnose this concern. As little as 2-3 volts on this bus may be enough to keep this relay powered up.

Correction:

To diagnose this potential concern, first remove each individual fuse, one at a time, on this ignition bus and verify that the concern has been resolved. This will narrow the concern down to one specific fused circuit so diagnosis can be continued. While it is possible that this unwanted backfed voltage may originate from any of these fused branches, two common issues have been seen in the field. The first issue that has been identified has been the use of aftermarket accessories that are powered up by any of the fuses on this bus. If anything aftermarket is found on the vehicle, simply disconnect it and reevaluate the concern. The second common area of concern is related to the F40UA fused branch. This particular fuse powers the Seat Heating Control Module. This module may short out, causing unwanted voltage on circuit 639. This backfed voltage will typically keep the Ignition Main Relay (KR73) energized. As a quick check to diagnose this concern, remove the F40UA fuse. This is a yellow 20 amp fuse located in the Underhood Fuse Block (X50A). Once this fuse is removed, check to see if the engine is able to be turned off. Circuit 639 also branches out to the Rear Body Fuse Block (X53A). If this fuse is removed and the concern is resolved, continue diagnosis by unplugging the Seat Heating Control Module to verify that this is the root cause of the concern.

Important: Always check the wiring at the module connector to verify that no circuits are shorted together, grounded, etc. before replacing a module.

Note: If no issues have been found at that point, technicians are encouraged to inspect G106 which is located at the RH strut tower, near the EBCM. A poor ground connection at G106 may result in erratic Ignition Main Relay operation. Other secondary symptoms may be seen with the operation of the windshield washer pump, the turn signal housed within the passenger outside mirror, DRL's, and it may even cause a loss of communication with the EBCM.

Version History

Version	6
Modified	01/21/2020 - Created on 10/27/2020 Updated model years 11/30/2020 - Updated to add P2535 reference. 01/11/2021- Updated to add the additional diagnostic note regarding G106. 6/15/2021 - Updated to add Korea to Regions 07/05/2022 - Updated to add the 2022 and 2023 model year.



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