Your Car, The Fire Hazard

According to the US Fire Administration statistics from 2008, a quarter of all vehicle fires are electrical in nature. U.S. automobile organizations are paying attention to these hazards and are also looking ahead to the next generation of electric vehicles.

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As automobile electronics become more sophisticated, so does the vehicle's electric system. Today's passenger compartments have a great many more electrical sources in the dashboard, seats, doors, headliner, and floorboard than are found in older vehicles. Furthermore, the firewall between the engine bay and the cockpit now includes more openings to allow the flow of cables, wires, and control modules. One can easily imagine that this introduces more ignition sources into the passenger compartment and can allow fire to spread quickly throughout the vehicle.

The ever-increasing electronic content in the engine bay and passenger compartment places greater demands on electronic control units and embedded printed circuits, resulting in potential reliability issues. Indeed, according to the US Fire Administration [2] statistics from 2008, a quarter of all vehicle fires are electrical in nature.

U.S. automobile organizations are paying attention to these hazards and are also looking ahead to the next generation of electric vehicles. In April 2009, the National Fire Protection Association (NFPA) and SAE International teamed up to announce [3] their co-sponsorship of the U.S. National Electric Vehicles Safety Standards Summit in October. According to NFPA, the summit's goal is "to ensure that fire and electrical safety standards impacting electric vehicles are aligned for the rapid deployment that's underway."

The Fires in Vehicles [4] conference being held at the end of the summer in Sweden will explore fire hazard challenges to cars, trains, buses and trucks, with the goal of finding solutions to potential issues. In addition to vehicle manufacturers, national road and rail authorities, insurance companies and other interested parties, component manufactures are encouraged to attend.

In power electronic designs such as ABS, cooling fan or power steering controls, the use of power electronic components (power FETs, power ICs, power capacitors) can induce the risk of thermal events in the case of component failure. In fact, power components can fail in a resistive way rather than with a dead short, creating a hazard of localized overheating through I2R and thermal runaway. Look for more on this topic in the months to come, as Tyco Electronics is currently working on new circuit protection solutions that address this issue.

What kind of electronics do you have in your vehicle? Concerned about the potential of a fire in your car? You can weigh in on this topic below.

For more information and news and views on circuit protection technology, check out around the circuit *[5].*

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