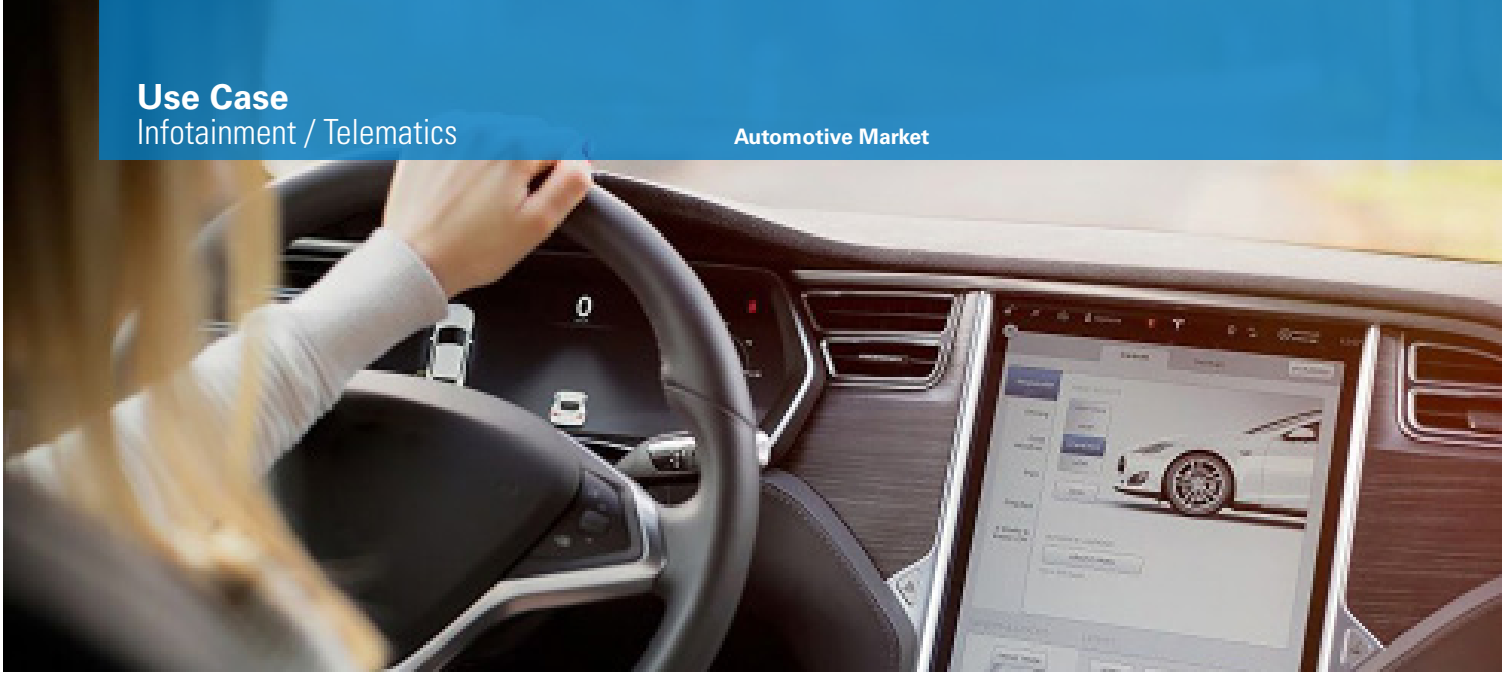
Use Case
Infotainment / Telematics

Automotive Market



Eaton Enables Efficient Power Delivery for Electronic Automotive Infotainment/Telematics Systems

Infotainment and telematics are some of the most desired features in the central interface of modern automobiles. They allow drivers to talk hands-free using Bluetooth connectivity, receive GPS route guidance, watch movies, listen to music, and get vehicle diagnostics/maintenance notifications on the go.

Infotainment/telematics interfacing with advanced driver assistance systems (ADAS) increases the number of electronics in the engine compartment. As the number of embedded electronics increases, so does the need to perform under harsher ambient conditions, including wide temperature variations, high-humidity conditions, electromagnetic interference (EMI) and strong G-forces without sacrificing reliability or durability. Modern infotainment/telematics systems contain powerful microprocessors that require more power to handle many vital functions throughout the vehicle.

Eaton's MPIAV2, HCM1A, and HCM1AV2 automotive-grade SMT inductors offer excellent thermal dissipation characteristics that are crucial when operating at higher currents and ambient temperatures.

MPIAV2 Inductors

Eaton MPIAV2 inductors feature high current-carrying capacity in a compact, standard 1008 footprint. The MPIA25V2 has inductance ratings from 0.33 µH to 4.7 µH and current ratings from 1.2 A to 7.5 A while the MPIA40V2 has inductance ratings from 0.1 uH to 22 uH and current ratings from 1.2 A to 22 A. The family is AEC-Q200 Automotive qualified and can withstand temperatures from –40 °C to a maximum of +125 °C (ambient plus self-temperature rise).

Automotive applications for MPIAV2 inductors include infotainment and cluster electronics, such as active noise cancellation (ANC), audio subsystems, head unit and trunk amplifiers, digital instrument clusters, in-vehicle infotainment (IVI) and navigation systems.

HCM1A & HCM1AV2 Inductors

For Eaton's HCM1A and HCM1AV2 product families, the low core loss performance is designed for input and output filtering applications up to self-resonant frequency (SRF) used in sophisticated digital control and direct current (DC) motors. These motors generate noise in engine compartments that could adversely affect the performance of adjacent electronic systems if left unmitigated. Filters with these inductors are designed to reduce this noise. Eaton's HCM1A inductors are AEC-Q200 Grade 1 qualified.

These pressed powder automotive inductors are small footprint components ideal for infotainment/telematics throughout a vehicle. They offer a maximum operating temperature of +155 °C (+125 °C ambient plus 30 °C full-load self-temperature rise) and are AEC-Q200 qualified.

Eaton offers inductors in a wide range of footprints. The 4020-0703 range of components is ideal for compact automotive infotainment and telematics.

Automotive applications for Eaton HCMIA/HCM1AV2 inductors include infotainment and cluster electronics such as active noise cancellation (ANC), audio subsystems, head unit and trunk amplifiers, digital instrument clusters, in-vehicle infotainment (IVI) and navigation, and port power/USB HUB for front and rear passengers.

Due to the number of EMI-sensitive electronics in many modern vehicles, Eaton's solutions offer low core losses and magnetic shielding to reduce EMI and help minimize noise intrusion.

Eaton's automotive inductors are halogen-free, lead-free, and RoHS compliant for environmental safety and AEC-Q200 qualified for automotive-grade electrical and mechanical performance.

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