



Providing the highest power density for automotive future



LEDs have replaced incandescents, the power train and power steering are controlled electronically and hydraulics as a whole are disappearing so much so that modern vehicles are fast becoming “fly-by-wire” devices. While relatively few automobiles are fully powered by electricity, they are increasingly controlled and animated by electronics.

The basic 12 volts supplied by the battery and generator almost always need to be stepped up or stepped down to accommodate vehicles’ displays, controllers, and safety devices. These voltage conversions are accomplished through devices such as buck and boost converters, and the most critical parts of these voltage conversion devices are inductors.

The high-power [MPIAV2 Inductors](#) make it possible to efficiently provide power for

these diverse applications, while adding almost nothing to vehicle weight and space constraints.

Space is at a premium in automobiles, and designers need small inductors that can stand up to the heat, handle high currents, and thrive even at switching speeds on the order of one MHz or more. That is where high-current, low-profile, miniature power automotive inductors like the MPIA25V2 and the MPIA40V2 from Eaton come in.

The MPIAV2 utilizes an advanced molded construction design for high current handling capabilities, better thermal dissipation characteristics and superior mechanical strength.

Additionally, the MPIAV2 is AEC-Q200 Automotive Grade 3 qualified with a maximum operating temperature of 125 degrees Celsius (ambient plus self-temperature rise).

Eaton’s MPIAV2 offers high current carrying capacity, high power density, low core losses and magnetic shielding to reduce EMI effects to other devices.

MPIA25V2 family consists of a 2.7 mm x 2.2 mm footprint surface mount package in 1.05 mm and 1.25 mm heights. Current range is from 1.2 A to 7.5 A. Inductance range is from 0.33 uH to 4.7 uH.

The MPIA40V2 family consists of a 4.75 mm x 4.45 mm footprint surface mount package in 1.2 mm, 1.5 mm and 2.0 mm heights. Current range is from 1.2 A to 22 A. Inductance range is from 0.1 uH to 22 uH.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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