

Automotive fuel economy standards

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With the goal of creating a sustainable society, automotive fuel economy standards have become more stringent year after year in order to reduce CO₂ emissions. The overall market share observed by electric vehicles (EVs) and hybrid electric vehicles (HEVs) is expected to grow significantly by 2020. HEVs have been marketed in a variety of formats. Hitachi relies on its strength in the field of power electronics to supply transformers that meet the diverse requirements of customers. There has been a demand in recent years to increase production and reduce the size of inverters so they can access the limited space available in cars. In response, Hitachi has developed new power modules with direct double-sided cooling, achieving much higher power density than previous models. Hitachi has also developed a standard power electronics platform for the installation of these power units and has marketed them as a standard reflector.

Auto inverters speed up or slow the car by converting DC power from batteries to AC at the desired speed of the car and controlling the other system to control the speed of the electric motor and torque in the engine and power. For better acting requirements of these electric leading systems are for small HEVs and EVs (important to guarantee that the system can be installed in the car, high efficiency for EV expansion, high output to provide proper acceleration performance, and reliability of operation in the harsh environment inside the vehicle. By utilizing its techniques in beam structure. From the power units to the evolution of direct water cooling system, Hitachi was successful in submitting compact size and high performance. It is also making its reflectors smaller by adopting a dual cooling method with direct water cooling and a completely submerged cooling.

Features of high-power reflector The requirements of auto reflectors include control performance ranging from low to high engine speeds, toughness to withstand harsh environment (heat and vibration), and electromagnetic compatibility (EMC) to reduce electromagnetic noise radiation due to the current heavy switch, easy installation (small size and light weight)), Safe functions in case of malfunction, long life with respect to heat fatigue, excellent water and dust proof nano, insulation performance at high altitudes. Transformers also need to meet these demanding requirements at low cost. Vehicle reflectors include a variety of components, including IGBT power devices, power units, high voltage DC line capacitors, main circuit bars, power drive circuit board, engine control panel, Three phase current sensors, and current fixed voltage connectors. The high performance expected in the past required the use of special purpose components. The components used in high voltage and high voltage power sections of the inverter require high insulation and high voltage tolerance.