Aluminum Electrolytic Capacitor Design Boosts Efficiency in Automotive Applications

TDK-EPC offers a new design for EPCOS-brand aluminum electrolytic capacitors, which helps to boost energy efficiency in automotive electronics applications. These capacitors are distinguished by a particularly rugged mechanical design allowing them to withstand even harsh conditions in motor vehicles. They offer a vibration resistance of up to 40 g, can be operated within a broad temperature range from -55° to +150° C and have an operating life of 10 000 hours at 125° C. They also have very low ESR and ESL values. The new aluminum electrolytic capacitors are available as 3-pin single-ended and solder-star versions in various designs for increased mechanical stresses to IEC 60068-2-6. They require no additional mounting parts on the circuit board, thus simplifying the production process for customers and saving costs. Thanks to their low ESR values, the axial types, for example with a diameter of 21 mm, offer a very high ripple current capability. This means that fewer parallel-connected capacitors are needed for extreme requirements, thus contributing to lower costs and increased reliability. As a result, a single axial type can replace up to three single-ended types of the same electrical performance. This solution requires only 40 percent of the original volume for the same ripple current capability. Applications of these rugged and reliable capacitors are engine management and electronic fuel-injection systems, gearbox controllers and steering aids, as well as motors for fans, windshield wipers, or oil and water pumps.

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