



Combined components

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Sample kit for combined ESD and RFI protection

TDK-EPC, a group company of the TDK Corporation, presents a sample kit with the SHCV series (super high capacitance varistors) of components from EPCOS for protection from overvoltage (ESD) and attenuation of radio frequency interference (RFI).

The SHCV series was developed especially for automotive electronics and is qualified to AEC-Q200 Rev-C. In addition to protecting automobile electrical systems in stress conditions such as load dump and jump start, the CTVS components are suitable for the interference suppression of brushed DC motors, relays and electromagnetic actuators.

The leaded components contained in the sample kit cover the operating voltage range from 16 to 45 V DC and are designed for current surges of between 100 and 1200 A at a standard pulse of 8/20 μ s. Depending on the type, a maximum energy of 12 J per pulse can be absorbed for at least 10 pulses. The capacitances range between 0.47 and 4.7 μ F. Up to a temperature of 125 °C, no temperature derating is required.

Data sheets, application examples and additional information are available on the enclosed CD-ROM.

Glossary

- Varistor: a voltage-dependent resistor (VDR) that changes over from a non-conducting to a conducting state at a defined voltage.
- Load dump: the interruption of the electrical connection between the generator or battery and the automobile electrical system, which can lead to a temporary rise in the vehicle voltage.
- Jump start: a method of starting motor vehicles via external battery systems with a significantly higher voltage than that of the built-in battery. It is usually used after shipping new vehicles to start them at the destination port.
- ESD: electrostatic discharge that can damage or destroy sensitive electronics.
- RFI: radio frequency interference, which affects other equipment or systems.
- AEC: the Automotive Electronics Council has defined test criteria for electronic components in automotive applications since 1992. AEC-Q200 applies to passive components.

Main applications

- Overvoltage protection and suppression of radio frequency interference in automotive and industrial electronics.

Main features and benefits

- High surge-current capability up to 1200 A
- Bidirectional overvoltage protection
- Saves space by combining the function of a varistor and a capacitor in a single component
- Qualification to AEC-Q200 Rev-C