

ThermoFuse varistors

Intrinsically safe overvoltage protection with high surge current capability

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TDK Corporation presents the new T series of EPCOS ThermoFuse™ varistors for intrinsically safe overvoltage protection. These components are based on disk varistors with diameters of 14 mm (T14 series) and 20 mm (T20 series) that are connected in series with a thermally coupled fuse. The T14 series (B72214T*) covers the voltage range from 130 V_{RMS} through 420 V_{RMS}. Its surge current capability is 6000 A for a pulse of 8/20 μs in accordance with IEC-61000-4-5, while the permissible power dissipation is 0.6 W. The dimensions are 17 mm x 21.6 mm x 13 mm.

The T20 components are suitable for voltages between 130 V_{RMS} and 1000 V_{RMS}. Their surge current capability is up to 10,000 A (8/20 μs) and their power dissipation is 1.0 W. Depending on the voltage, the dimensions range from 22 mm x 26 mm x 12 mm to 27.5 mm x 27.5 mm x 18.5 mm.

If the varistor of a ThermoFuse overheats, the fuse trips and isolates the varistor from the grid. This prevents fires on the printed circuit board or damage to components located near the varistor. Fuse and varistor are housed together in a plastic enclosure that, like the coating of the varistor, is made from flame-retardant material. The components have three connections: Two for the power cable and one as a monitor output, which enables the display of the status of the component with an LED, for example.

The main applications for ThermoFuse varistors are home appliances, power supplies, photovoltaic inverters, frequency converters, ballasts for lighting systems, surge voltage protectors and electronic meters.

Main applications

- Domestic appliances, power supply units, photovoltaic inverters, frequency converters, and ballasts for lighting systems, surge voltage protectors and electronic meters

Main features and benefits

- Wide range of voltages from 130 V_{RMS} to 1000 V_{RMS}
- High surge current capability of up to 10,000 A
- Use of flame-retardant materials

Key data

Series	Ordering code	Diameter [mm]	Voltage [V _{RMS}]	Surge current capability [A]	Max. power dissipation [W]
T14	B72214T*	14	130 to 420	6000	0.6
T20	B72220T*	20	130 to 1000	up to 10,000	1.0

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2015, TDK posted total sales of USD 9.0 billion and employed about 88,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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