

ThermoFuse varistors

Compact overvoltage protection with an integrated fuse

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TDK Corporation (TSE:6762) has extended its EPCOS ThermoFuse™ family of fuse protected varistors with the new compact NT14 and NT20 series. The new ThermoFuse components feature a footprint that fits into existing circuit board layouts. The NT14 series (disk diameter 14 mm) is designed to absorb maximum surge currents with an 8/20- μ s pulse of 6 kA at rated voltages of between 130 VRMS and 680 VRMS, while the NT20 series (disk diameter 20 mm) has a surge current capability with an 8/20- μ s pulse of 10 kA at rated voltages of between 130 VRMS and 750 VRMS. The NT14 and NT20 series offer a maximum energy absorption of up to 220 J and 480 J for 2 ms, respectively. Both series are available in 2-leaded and 3-leaded types, with the third lead used to monitor whether the fuse has been activated.

ThermoFuse varistors are uniquely designed disk varistors that are connected in series with a thermally coupled fuse and are therefore intrinsically safe. If the varistor overheats, the patented thermal fuse trips and isolates the varistor from the grid with unrivalled dependability. This prevents any potential damage on the PCB or to components located near the varistor and increases the reliability of the equipment to be protected. Thanks to their thermal resistance and flame-retardant design of the epoxy coating, the ThermoFuse NT series meet UL 94 V-0 requirements, and are also listed as Type 4CA in UL 1449, 4th edition.

With their compact dimensions and excellent surge current capability over a broad range of voltages, the NT types are suitable for use in a wide range of applications, such as ballasts for lighting, home appliances, power supplies, inverters for solar installations, frequency converters for drives, and smart meters. They can also be used for the general protection of electrical wiring and installations.

Main applications

- Ballasts for lighting, home appliances, power supplies, inverters for solar installations, frequency converters for drives, smart meters
- General protection of electrical wiring and installations

Main features and benefits

- Compact size
- Wide range of voltages from 130 V_{RMS} to 750 V_{RMS}
- High surge current capability of up to 10 kA
- UL 1449 listed

Key data

Series	Ordering code	Disk diameter [mm]	Operating voltage [V _{RMS}]	Surge current capability [kA]	Max. energy absorption [J]
NT14, 2 leads	B72214R*	14	130 to 680	6	50 to 220
NT14, 3 leads	B72214W*				
NT20, 2 leads	B72220R*	20	130 to 750	10	100 to 480
NT20, 3 leads	B72220W*				

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 comprehensive portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in the areas of information and communication technology and automotive, industrial and consumer 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 2018, TDK posted total sales of USD 12 billion and employed about 103,000 people worldwide.

You can download this text and associated images from www.tdk-electronics.tdk.com/181016.

Further information on the products can be found under

www.tdk-electronics.tdk.com/varistors_thermofuse.

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