PTC Thermistors, Overload Protection For Instrumentation



FEATURES AND BENEFITS

- Fast response time for rapid protection
- Automatic resetting once overload is removed
- No contacts to burn out
- No thermal runaway
- Operates on DC or AC voltage
- Small size and rugged construction; see Component Outline drawing.

DESCRIPTION

Test and measuring instruments, such as oscilloscopes and digital multimeters, can be easily damaged if excessive voltages are applied across their input terminals.

Simple and effective overload protection can be provided by connecting a high-voltage PTC thermistor in series with the instrument; see Typical connection of the PTC thermistor for digital multimeter protection drawing. Under normal conditions, the resistance of the PTC thermistor is low, so the test voltage will be measured by the instrument. Under an overload condition, the PTC thermistor will switch to its high-resistance state, absorbing the overload current and protecting the instrument. When the overload is removed, the PTC thermistor will return to its low-resistance state, ready to resume its protective function.

ELECTRICAL DATA AND ORDERING INFORMATION

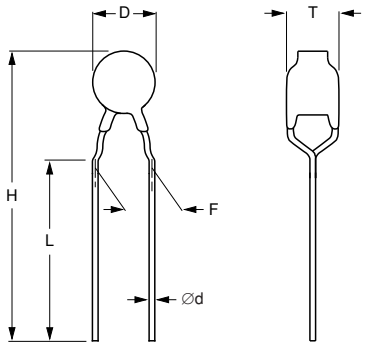
NON-TRIP CURRENT (RMS VALUE) at 25 °C (mA)	TRIP CURRENT (RMS VALUE) at 25 °C (mA)	NOMINAL RESISTANCE at 25 °C (Ω)	MAXIMUM[1] VOLTAGE (V)	INSULATION VOLTAGE (V)	CATALOG NUMBER
10	20	1600 ±300	600	–	2322 660 93034
10	50	400 ±100	600	>1000	2322 661 93113

Note

1. These PTCs can handle maximum voltage without series resistance.

MECHANICAL DATA in millimeters

Component outline.

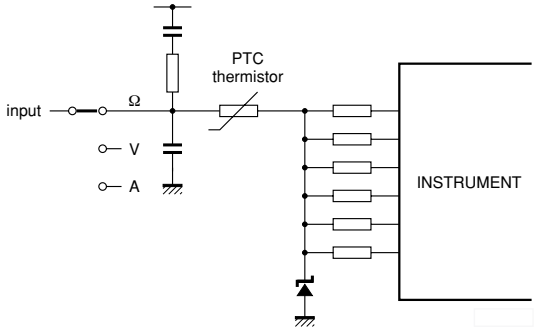


For dimensions, see Physical dimensions table.

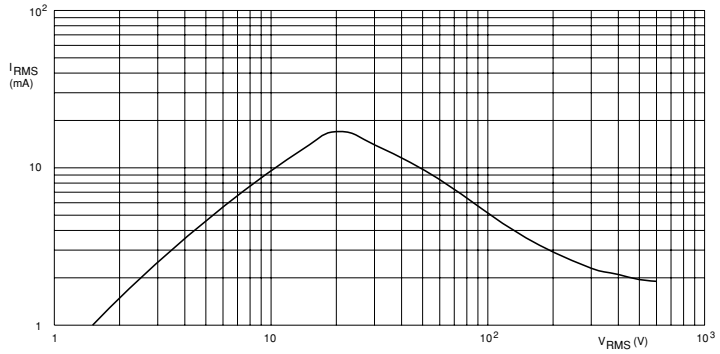
PHYSICAL DIMENSIONS in millimeters

H	L	D MAX.	T MAX.	F	d	MASS (g)	SPQ	PQ	CATALOG NUMBER
30 ±3	20 ±3	5	4.5	5.08	0.6	≈0.47	500	10000	2322 660 93034
15.5 ±1.5	3.1 ±0.5	10	6.5	8.12	0.8	≈1.82	500	10000	2322 661 93113

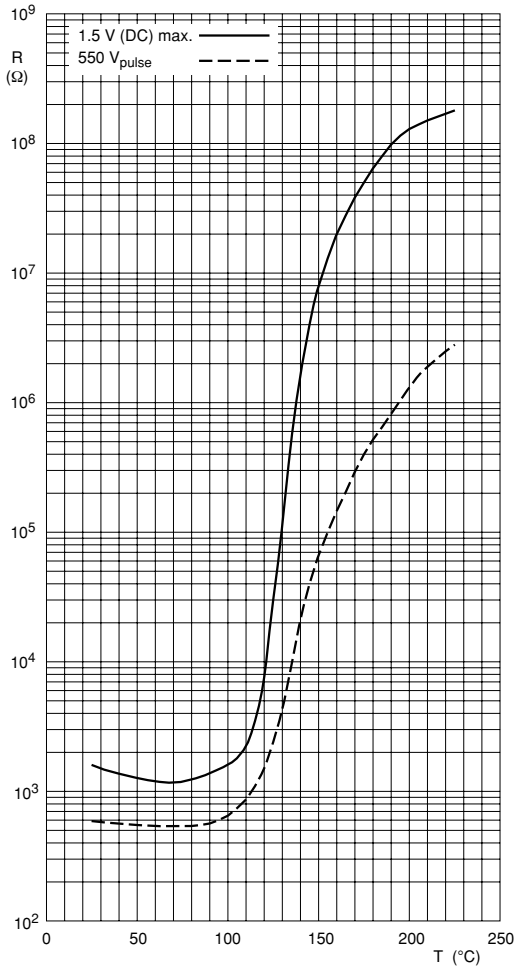
TYPICAL CONNECTION OF THE PTC THERMISTOR FOR DIGITAL MULTIMETER PROTECTION.



TYPICAL CURRENT/VOLTAGE CHARACTERISTIC for 2322 660 93034.



TYPICAL RESISTANCE/TEMPERATURE CHARACTERISTIC for 2322 660 93034.



TYPICAL RESISTANCE/TEMPERATURE CHARACTERISTIC for 2322 661 93113.

