



# TNP-25, TNP-45

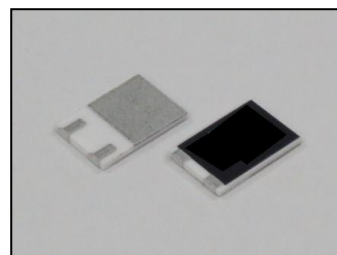
## SMD SURGE PROTECTION RESISTOR

### Features and Applications

Very small size, low profile, right weight SMD surge protection power film resistors.

Excellent rf characteristics advantage to high speed pulse operation.

Applications include power electronics, power consumption meter, electronic load equipments, battery charger, automotive and etc.



### GENERAL SPECIFICATIONS

Model	*Power Rating [W]	Resistance Range [ $\Omega$ ]	Resistance Tolerance [%]
TNP-25	25	0.1 – 51K	F [ $\pm 1$ ]
TNP-45	45		

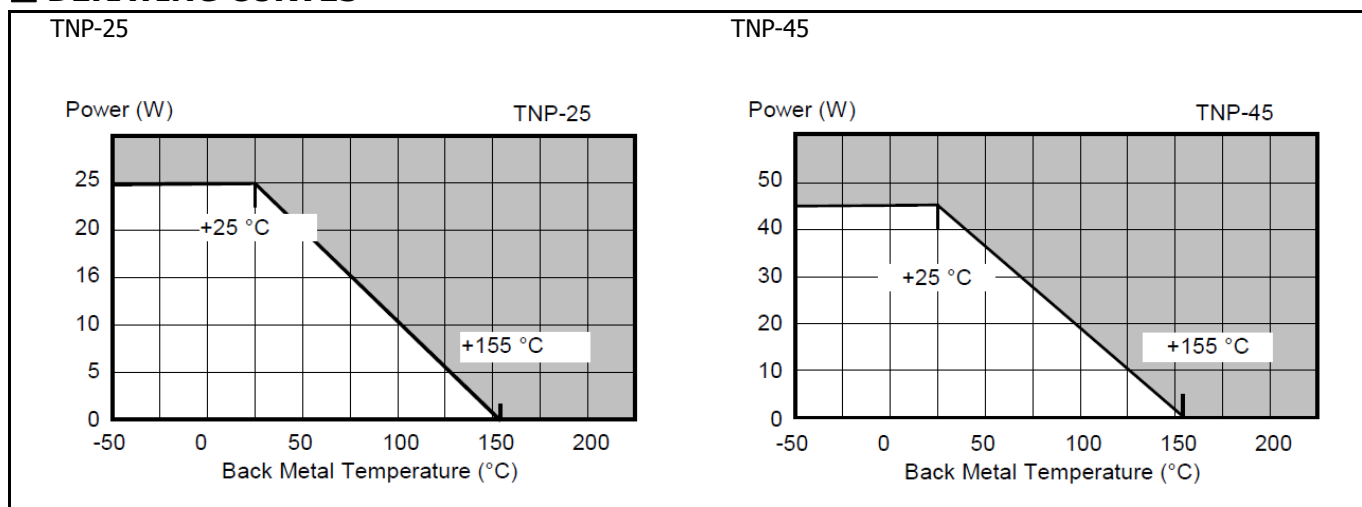
\* -55 °C to 25 °C backing metal temperature.

### CHARACTERISTICS

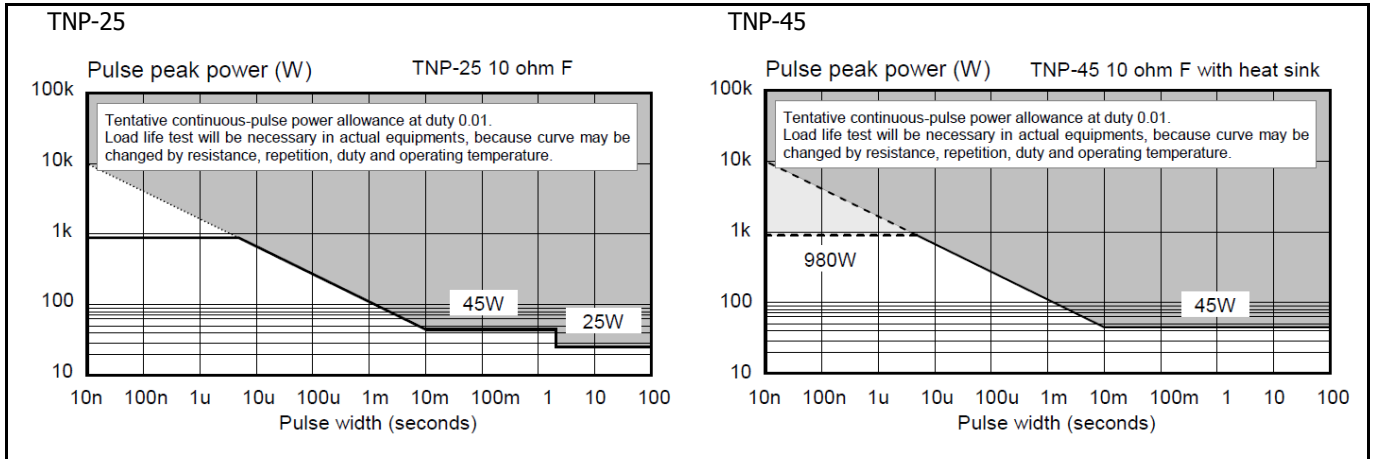
Values in [ ] mean changed in  $\Omega$  after test

Operation Temperature Range		-55 °C ~ +155 °C
Insulation Resistance		1000M $\Omega$ minimum
Dielectric Withstanding Voltage		AC 1500V for 1minute; Maximum leakage current : 1mA
Temperature Coefficient		$\pm 100$ ppm/°C maximum
Short Time Overload	TNP-25 : 50W TNP-45 : 50W	2.0XPower rating, 5seconds at 25 °C
Temperature cycle	$\pm [0.25\% \pm 0.05\Omega]$	-55 °C, 30min, +155 °C 30min, 5cycles
Humidity	$\pm [1.0\% \pm 0.05\Omega]$	40 °C, 90-95% RH, DC 0.1W, 1000hours
Vibration	$\pm [0.25\% \pm 0.05\Omega]$	IEC 60068-2-6
Load Life	$\pm [1.0\% \pm 0.05\Omega]$	25 °C, 90 min. ON, 30 min. OFF, 1000h
Soldering Heat	$\pm [0.1\% \pm 0.05\Omega]$	350+/-5 °C, 3seconds,

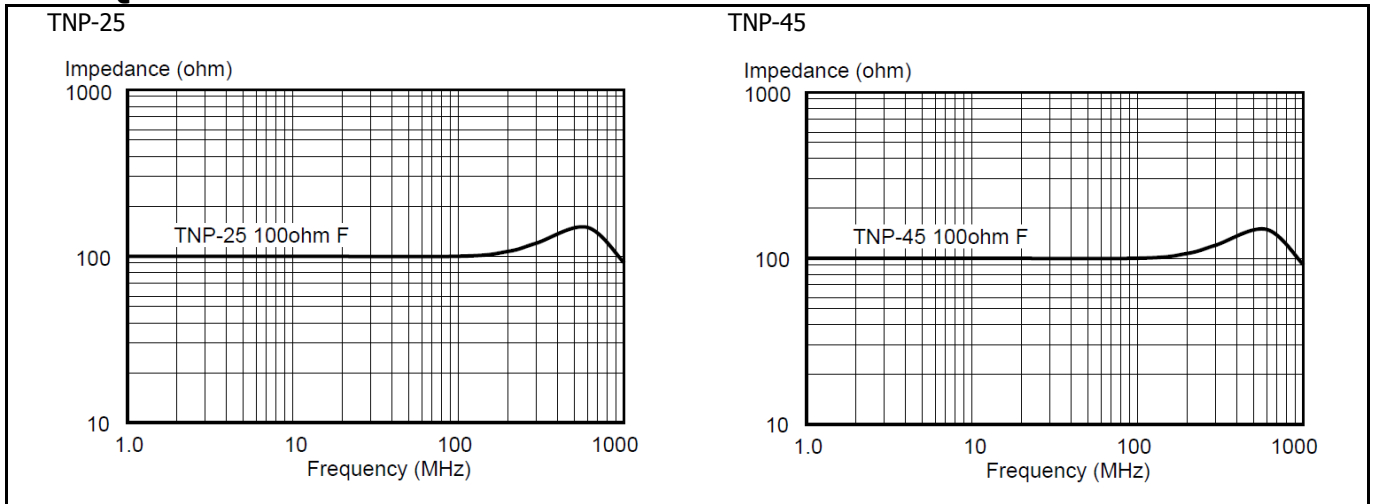
### DERATING CURVES



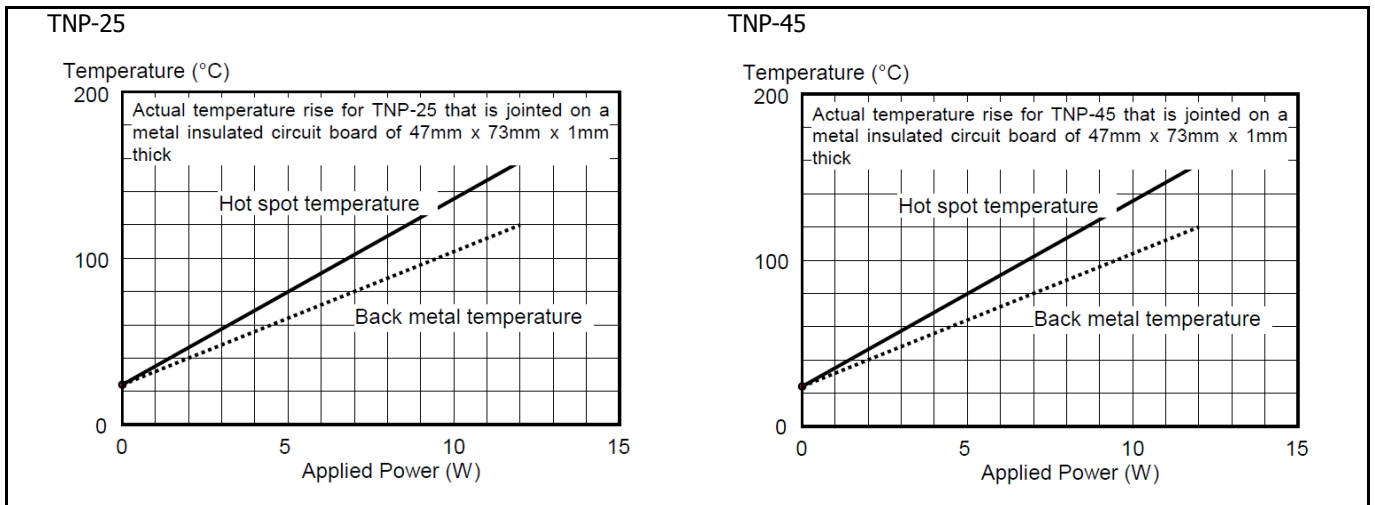
### PULS ENERGY DURABILITY



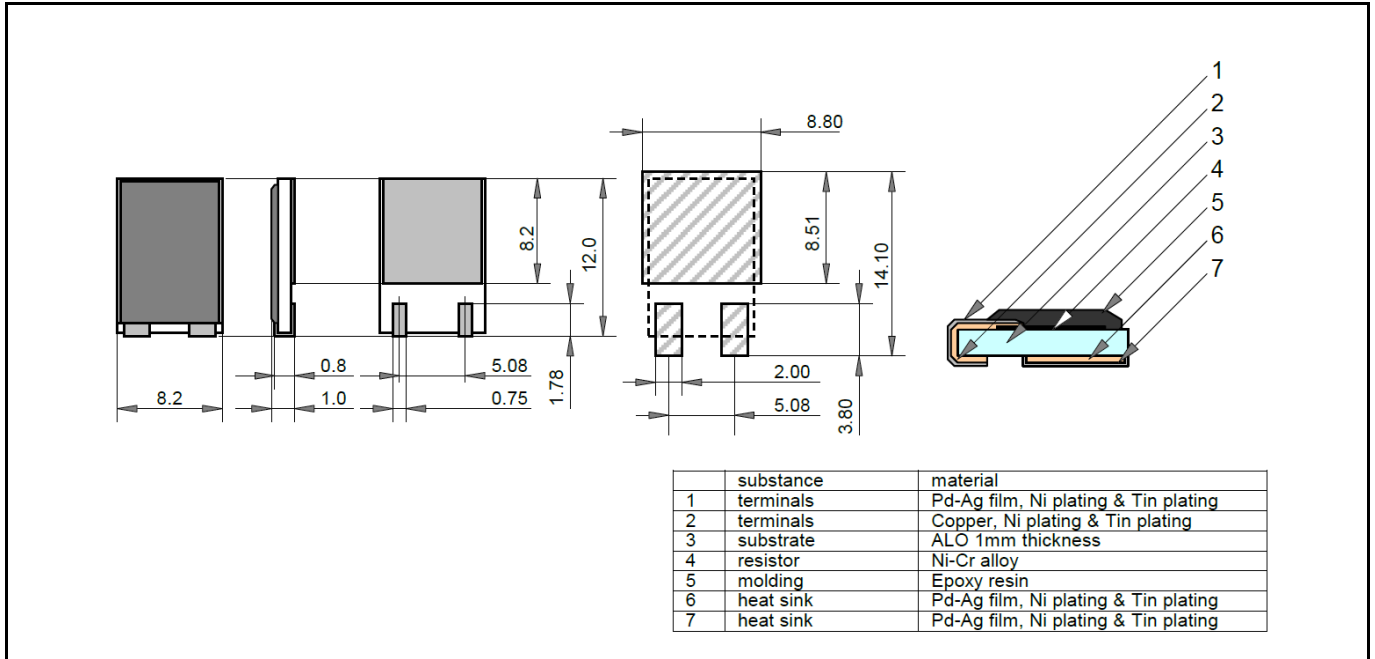
### FREQUENCY CHARACTERISTICS



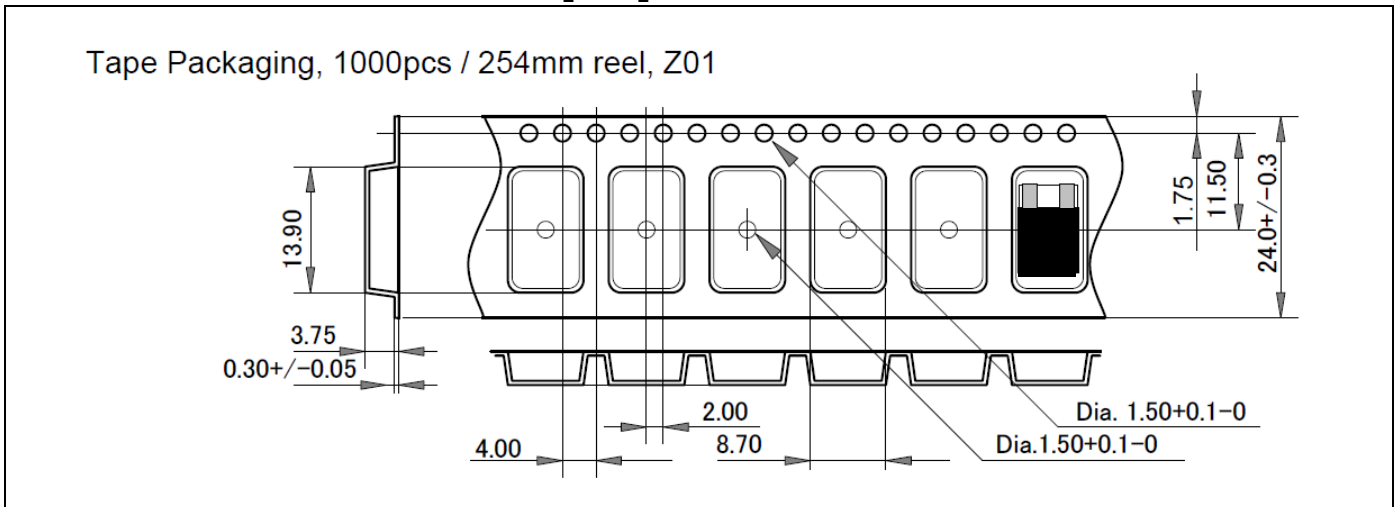
### TEMPERATURE RISE



**■ DIMENSIONS[mm] AND MATERIALS**



**■ TAPE PACKAGING DIMENSION [mm]**



**■ ORDERING PROCEDURE EXAMPLE**

