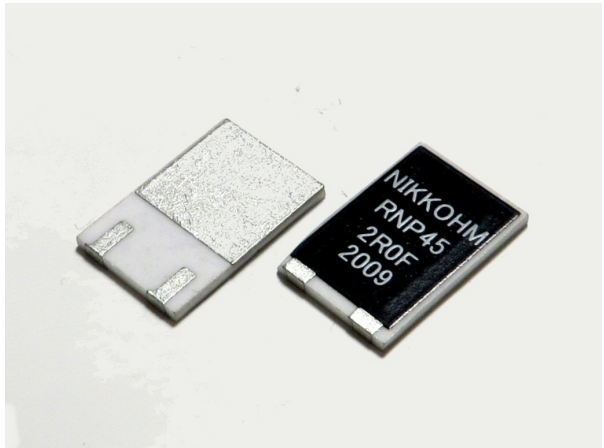


45W DPAK-TO252 STYLE  
SMD SURGE PROTECTION RESISTOR

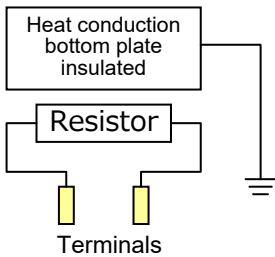
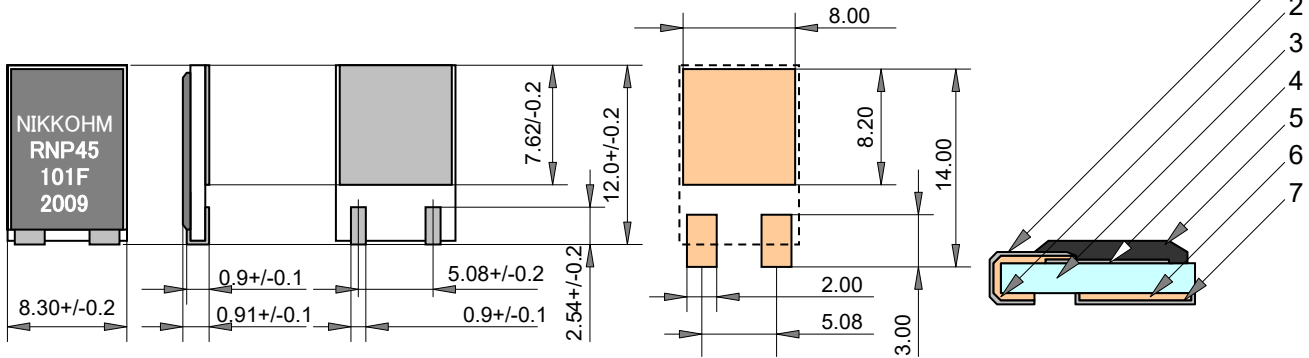
RNP-45 (AEC-Q200)



Features and Applications

- Very small size, low profile, right weight, TO252 style, SMD surge protection power film resistors.
- 55°C to +175°C temperature range provides for automotive applications.
- Low thermal resistance under 1.0 °C/W shows excellent cooling performance.
- Easy to replace TO252 D-PAK power resistor.
- Excellent rf characteristics advantage to high speed pulse operation.
- Applications include snubber, gate control, bleeder, filter, rush current protection, braking resistors of automotive, rail traction, wind turbine, PV, UPS and motor control inverters.

Dimensions, Foot Pattern, Schematics and Materials (mm)



	substance	material
1	terminals	Pd-Ag film, Ni plating & Tin plating
2	terminals	Copper, Ni plating & Tin plating
3	substrate	AL <sub>2</sub> O <sub>3</sub> 1mm thickness
4	resistor	Ni-Cr alloy
5	molding	Epoxy resin, UL-94 V-0
6	heat sink	Pd-Ag film, Ni plating & Tin plating
7	heat sink	Pd-Ag film, Ni plating & Tin plating

Note: When soldering this resistor, please use SAC solder containing 3% silver. If you use low silver solder, copper diffusion may occur and the terminals happen to break.

Ordering Information

Type	blank	Resistance	Tolerance	Code	Remarks
RNP-45	-	100 Ohm	F*	Z01	Tape & reel *1 *1-500pcs per reel, 254mm reel size
RNP-45	-	0.02 Ohm- 510k Ohm E24+	F(1%)*	Z01	

Recommend resistance E24+

1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.5	2.7	3.0	3.3
3.6	3.9	4.0	4.3	4.7	5.0	5.1	5.6	6.2	6.8	7.5	8.0	8.2	9.1

(\*) Tolerance of 0.02ohm to 0.091ohm are +/-5% only.

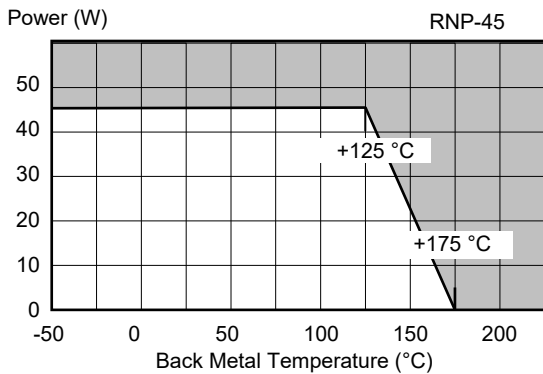
45W SMD POWER CHIP RESISTOR, RNP-45

Specifications

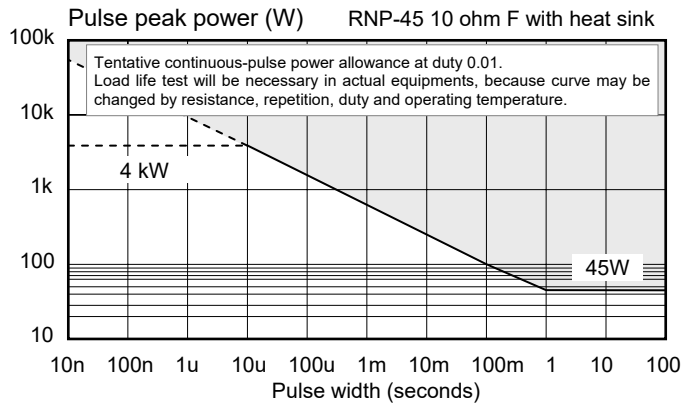
	RNP-45	Test Conditions
Rating Power	45 Watts	-55 °C to 25 °C backing metal temperature
Rating Power	1.0 Watts	Attached on simple foot print, no heat sink.
Short Time Overload	90 W – 5 sec.	Rated power X 2.0 and 5 second at 25°C with heat-sink
Heat Resistance	1.0 °C/W	Resistor to back metal
Resistance Range	0.02 Ohm – 510k Ohm	0.02ohm-0.91ohm are available at 5% tolerance only.
Nominal	E24 +	Include 2.5, 4.0, 5.0, 8.0 and 16
TCR	100 ppm/°C	10ohm to 51kohm, around 100 ppm /°C under 9.1ohm
Tolerance	+/-1% (F)	
Resistor Material	Thick Film	
Capacitance	2.65 pF	Equivalent parallel capacitance, typical
Inductance	14.65 nH	Equivalent series inductance, typical
Operation Temp.	-55 °C to +175 °C	
Max. Operating Current	10A	
Max. Operating Volt.	less than 500V or $\sqrt{P \cdot R}$	P is rating power and R resistance
Withstanding Volt.	1500 VAC	Terminal and back metal, 60 seconds. 1mA
Load Life	+/- 1.0 %	25 °C, 90 min. ON, 30 min. OFF, 1000h.
Humidity	+/- 1.0 %	40 °C, 90-95%RH, DC 0.1W, 1000 hours.
Temp. Cycle	+/- 0.25 %	-55 °C,30 min., +155 °C, 30 min., 5cycle
Soldering Heat	+/- 0.1 %	350+/-5 °C, 3seconds,
Lead Solder ability	Over 95% of surface	245+/-5 °C, 3seconds.
Insulation Resistance	Over 1,000 Meg ohm	Between terminals and back metal.
Vibration	+/- 0.25 %	IEC60068-2-6, see note
MSL	Level 1	
Weight	0.324 grams	

Note: Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s<sup>2</sup>, 90minutes. direction x-y z, Amplitude 0.75mm will be applied under break point Frequency (about 60Hz) and 100m/ s<sup>2</sup> over break point

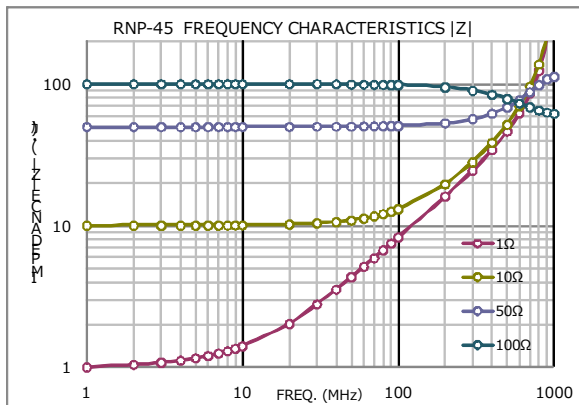
Power Derating



Pulse Energy Durability



Frequency Characteristics



Temperature Rise

