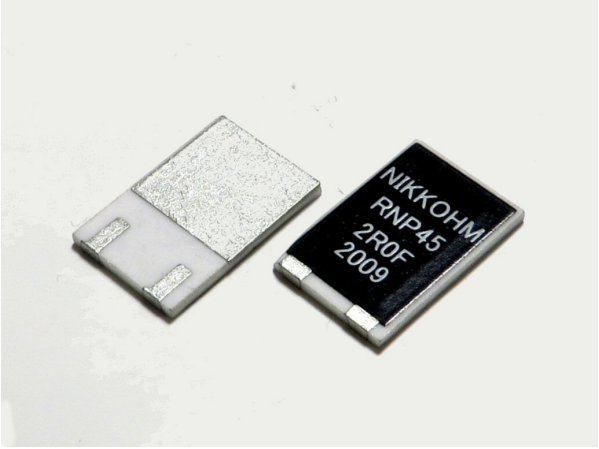
45W DPAK-TO252 STYLE
SMD SURGE PROTECTION RESISTOR

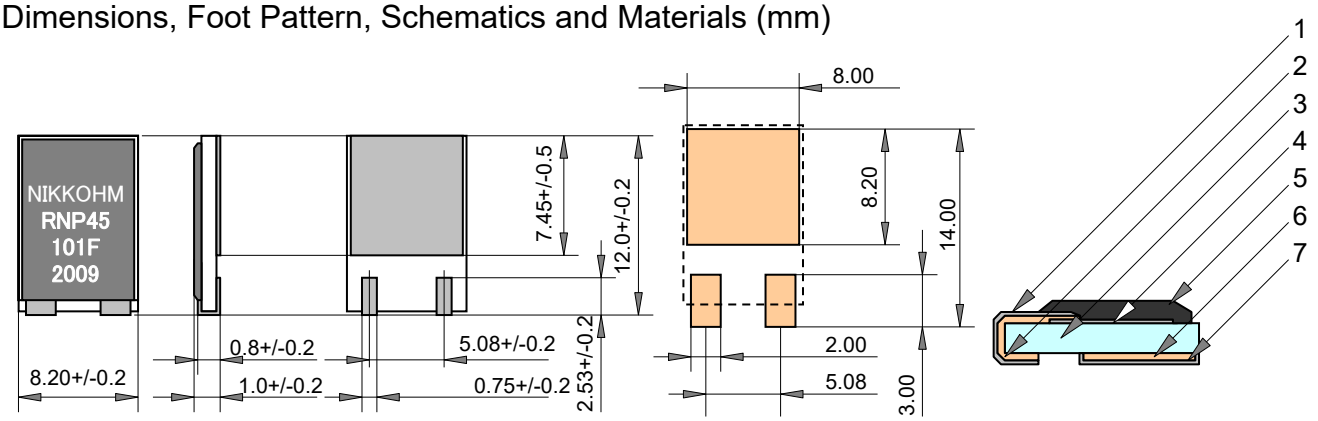
RNP-45 (AEC-Q200)

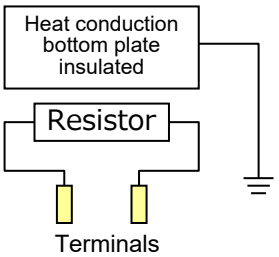


Features and Applications
nique SMD surge protection power-film resistor with the very small size, the great thinness, the light weight and TO252 package. The operation temperature range from -55°C to +175°C aids the automotive applications. Low thermal resistance, below 1.0 °C/W shows an excellent cooling performance. Easy to replace TO252 D-PAK power resistors. Excellent radio frequency characteristic that is profitable for the high speed pulse operation.

Applications; 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_2O_3 1mm thickness
4	resistor	RuO, 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	Resistance	Tolerance	Code	Remarks
RNP-45	100 Ohm	F*	Z01	
RNP-45	0.02 Ohm- 510k Ohm E24+	F(1%)*	Z01	Tape & Reel *1

*20-500pcs per reel, 254mm reel size

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.

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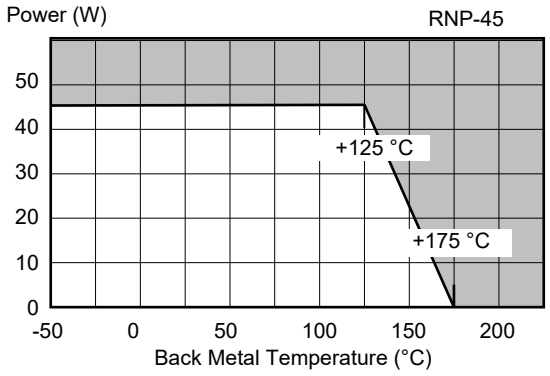
45W SMD POWER CHIP RESISTOR, RNP-45

Specifications

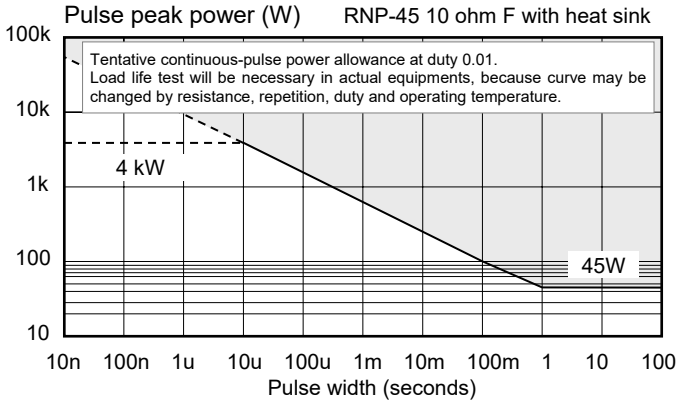
	RNP-45	Test Conditions
Rating Power	45 Watts	-55 °C to 25 °C backing metal temperature
Rating Power	1.0 Watts	Attached on simple foot print, no heat sink.
Short Time Overload	90 W – 5 sec.	Rated power X 2.0 and 5 second at 25°C with heat-sink
Heat Resistance	1.0 °C/W	Resistor to back metal
Resistance 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	1.44 pF	Equivalent parallel capacitance, typical
Inductance	8.38 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	0.3 grams	

Note: Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s2, 90minutes. direction x-y z, Amplitude 0.75mm will be applied under break point Frequency (about 60Hz) and 100m/ s2 over break point

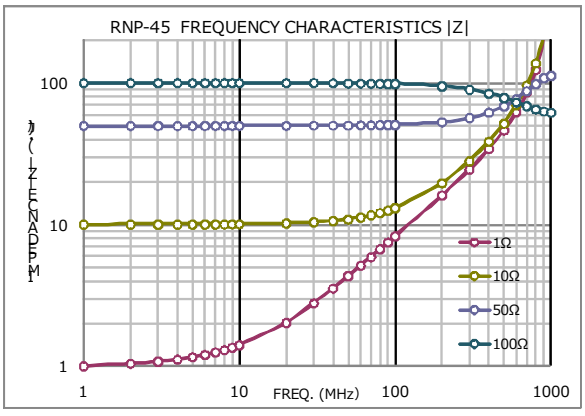
Power Derating



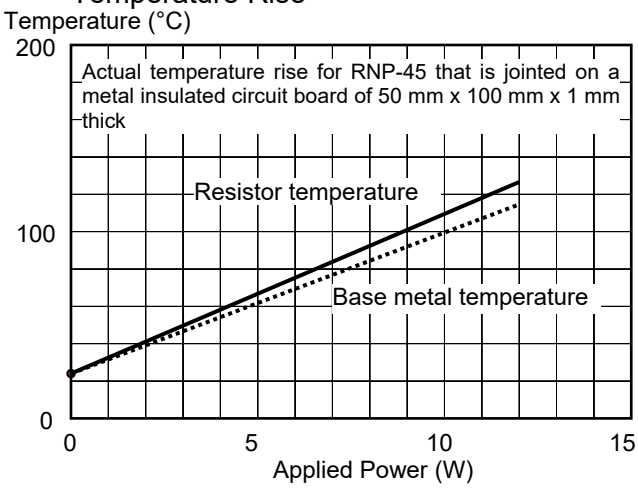
Pulse Energy Durability



Frequency Characteristics



Temperature Rise



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