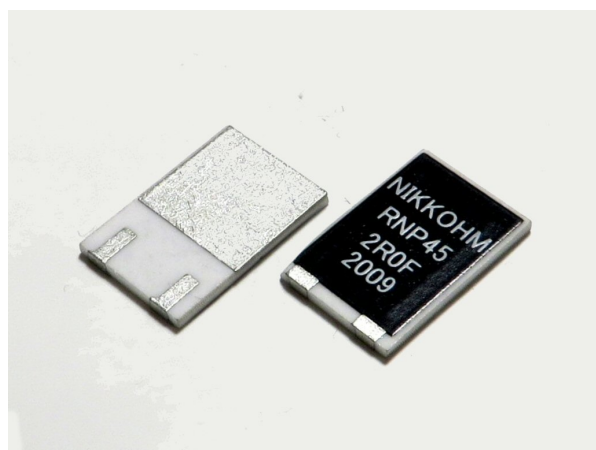


45W DPAK-TO252 STYLE SMD SURGE PROTECTION RESISTOR

RNP-45 (AEC-Q200)

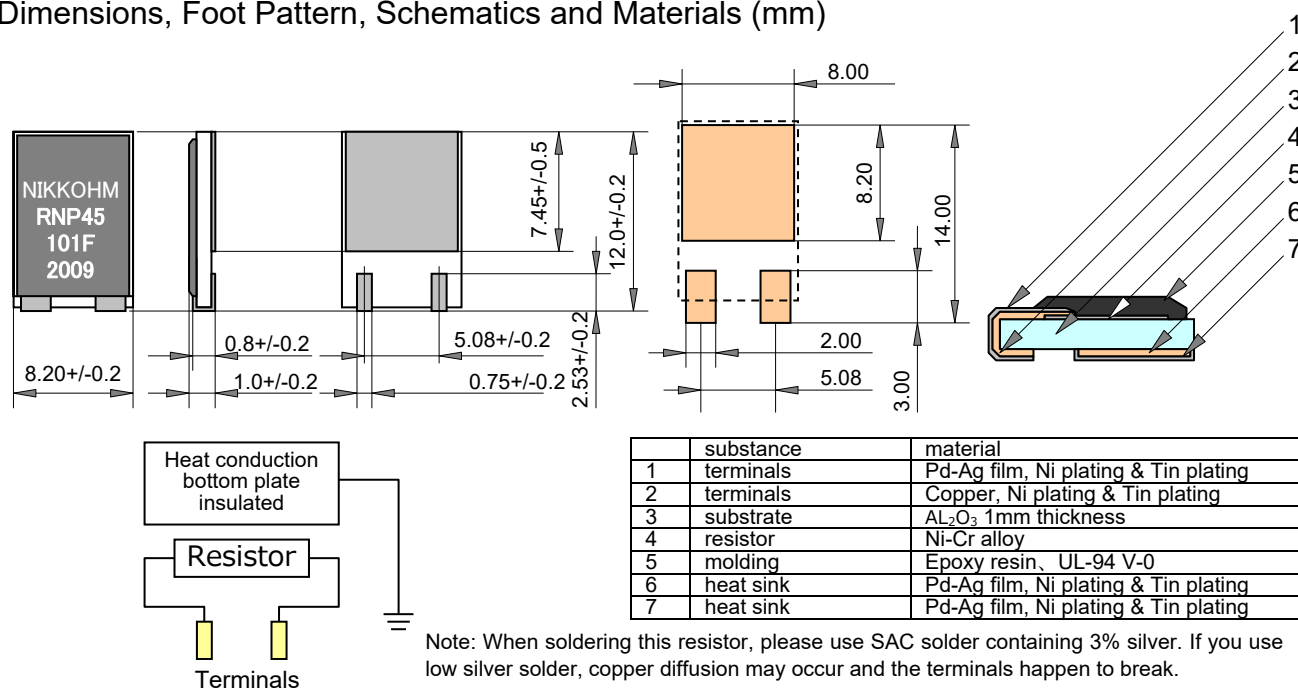


Features and Applications

Unique 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)



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.

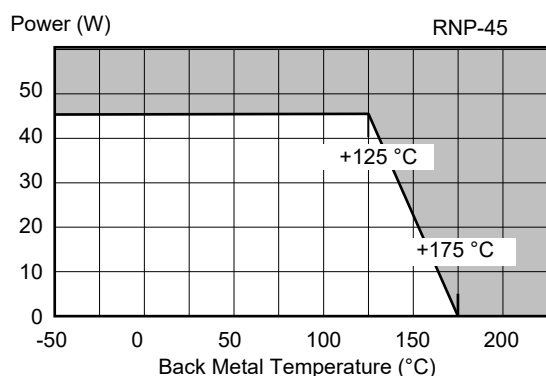
45W SMD POWER CHIP RESISTOR, RNP-45

Specifications

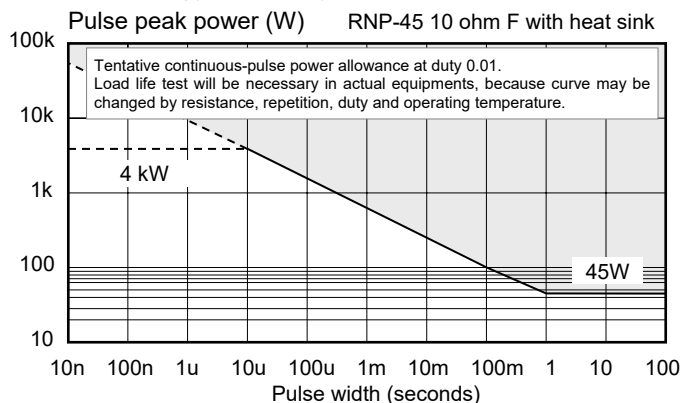
	RNP-45	Test Conditions
Rating Power	45 Watts	-55 °C to 25 °C backing metal temperature
Rating Power	1.0 Watts	Attached on simple foot print, no heat sink.
Short Time Overload	90 W – 5 sec.	Rated power X 2.0 and 5 second at 25°C with heat-sink
Heat Resistance	1.0 °C/W	Resistor to back metal
Resistance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

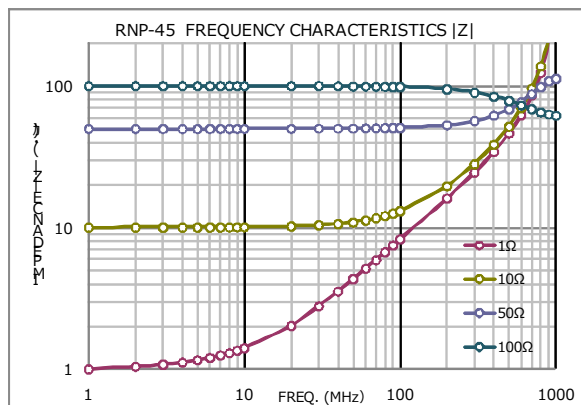
Power Derating



Pulse Energy Durability



Frequency Characteristics



Temperature Rise

