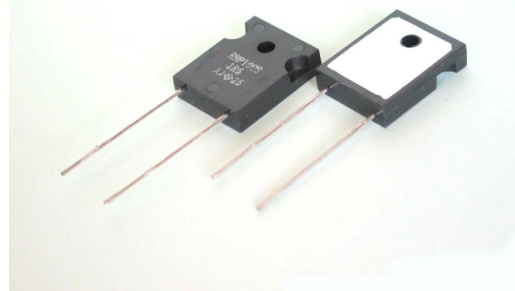


## TO247 140W HIGH POWER RESISTORS

### ▪ RNP-100S (27.5mm lead length)



#### Features and Applications

Up to 140W high power rating at 25 °C flange temperature cased in TO-247 mold package.

Only 0.9C/W thermal resistance from resistor surface to flange or metal back plate are realized.

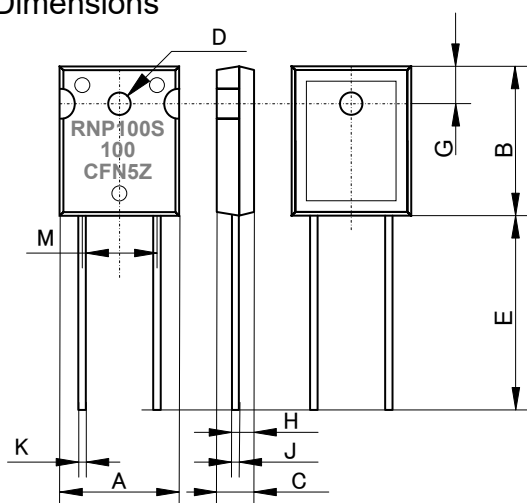
Flexible lead terminal for easy mounting, lead total length 27.5 mm. The lead length of 27.5 mm is indicated by Z00 at the end of the part number.

Insulation sheet is unnecessary, sufficient insulation between circuit and back metal is supported at internal structure.

Small size 100W power resistors and thin type fit for higher density design at power electronics.

RNP-100S will be applied to such industrial power equipments and radio frequency circuits as UPS, motor control, power amplifier, RF power amplifier, automated machine control and power supplies.

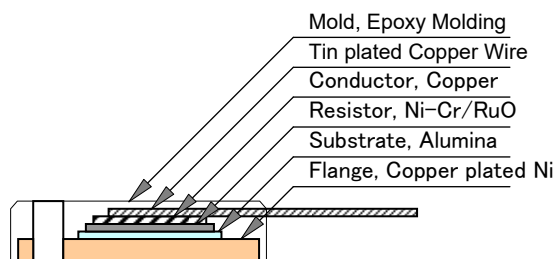
#### Dimensions



	mm	+/-mm
A	16.0	+/-0.2
B	20.0	+/-0.5
C	4.8	+/-0.2
D	3.55	+/-0.1
E	27.5	+/-1.0
F	-	-
G	5.1	+/-0.5
H	3.63	+/-0.2
J	-	-
K	0.8	+/-0.05
L	-	-
M	10.9	+/-0.1
N	-	-

(\*) Dimension D had changed to 3.55+/-0.1mm from January 2009.

#### Structure & Materials



Structure and material,  
Note: Resistor is insulated from Flange.

#### Specifications and Performances

Items	Specification			Conditions
Rating Power	140 W			At flange temperature -55 to 25 °C
Rating Power	3.0 W			Free air.
Heat Resistance	0.9 °C/W			From resistor to flange
Resistance Range	0.02-0.09Ω	0.1-510KΩ	10-51K Ω	
Nominal Resistance	+E12	+E24	+E24	Additionally 1-2-4-8-1.6 and 5.0.
TCR	250ppm/C	100 ppm/C	50 ppm/C	For -55°C to +155 °C
Tolerance	+/-5%	+/-1%	+/-1%	
Resistor Materials	Thick Film		Thin Film	
Capacitance	3.68 pF			
Inductance	12.52 nH			
Operation Temp. Range	-55 - +175 °C			
Max. Applied Voltage	Less than $750V \text{ or } \sqrt{P \cdot R}$			Max. operating current 20A
Withstanding Voltage	2500 VAC			60 seconds. 1mA
Load Life	+/- 1.0 %			25°C, 90 min. ON, 30min.OFF, 1000 hours.
Humidity	+/-1.0 %			40°C, 90-95%RH, DC0.1W, 1000hours.
Temperature Cycle	+/- 0.25 %			-55°C, 30 min., +155°C 30min., 5cycles.
Soldering Heat	+/- 0.25 %			350+/-5 °C, 3seconds,
Solder ability	Over 3/4 of round			245+/-5 °C, 3seconds.
Insulation Resistance	Over 1000 MΩ			Between terminals and metal back plate.
Vibration	+/- 0.25 %			
Flammability	UL94V-0			
Weight	6.4 grams			

# TO247 140W HIGH POWER RESISTORS RNP-100S (27.5mm lead length)

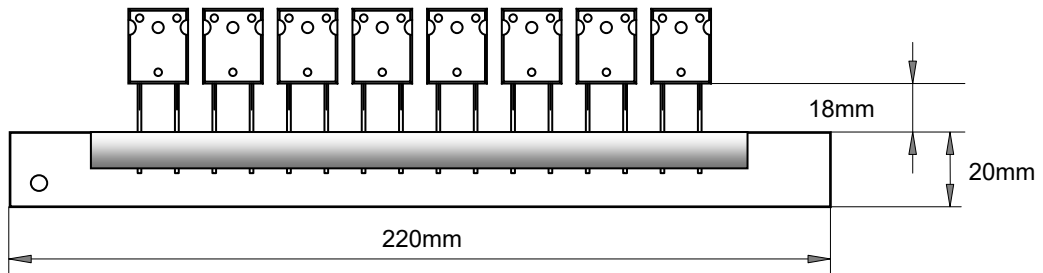
## Ordering Information

RNP-100S	C	10R0 (*)	F	Z00	Note
RNP-100S	H(250ppm) A(100ppm) C(50ppm)	R02 - R09 (+E6) R10 - 510K (+E24) 10R - 51K (+E24)	J(5%) F(1%) F(1%)	Z00	RoHS2 Tape/8pcs Z00 shows 27.5mm lead

Resistance value (\*) is available following modified E24, +E24.

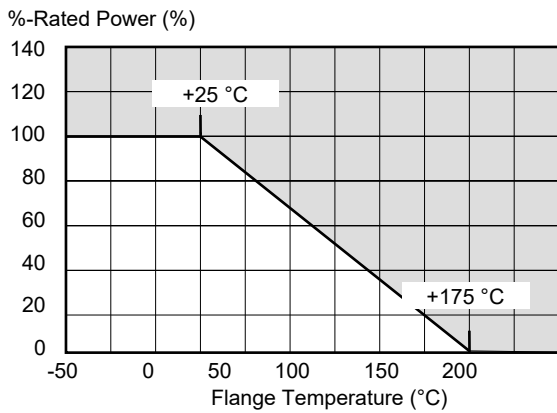
1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.5	2.7	3.0	3.3
3.6	3.9	4.0	4.3	4.7	5.0	5.1	5.6	6.2	6.8	7.5	8.0	8.2	9.1

## Packaging

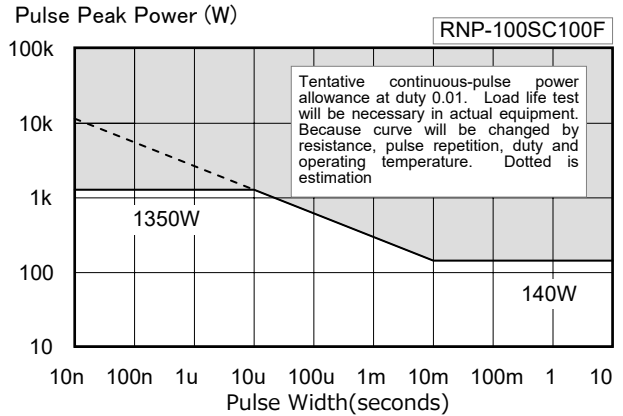


Up to 8 pieces are attached to the mount paper with adhesive paper tape with a width of 10 mm to prevent the leads from bending.

## Derating Curve



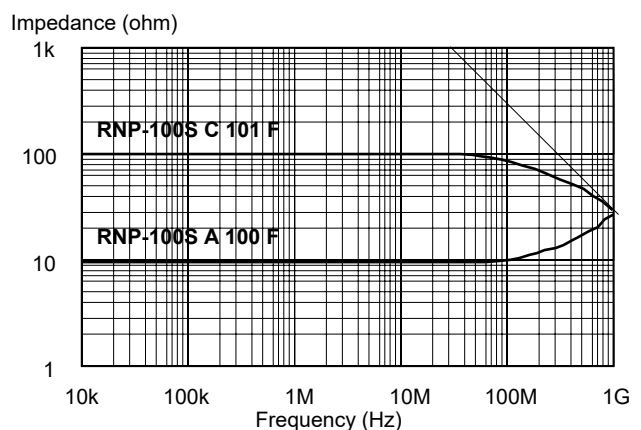
## Pulse Energy Durability



## Recommendation

- (1) Flat surface heat sink, thermal compound and sufficient mount screw torque (0.5Nm-0.6Nm) will be necessary for well heat transfer.
- (2) In rush current protection application as charge current limitation resistor, sufficient power derating will be necessary.
- (3) Flammability is UL94V-0,
- (4) Recommended screw torque is 0.5-0.6Nm.

## Frequency Characteristics



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