

POWER SOLUTION – DBL

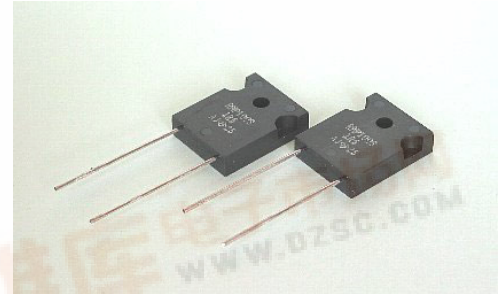
Lead Free

TO247 140W HIGH POWER RESISTORS

RNP100S

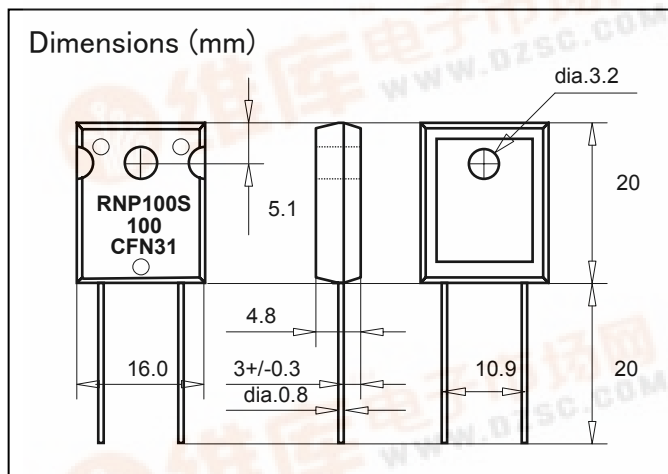


DB LECTRO
COMPOSANTS ÉLECTRONIQUES
ELECTRONIC COMPONENTS

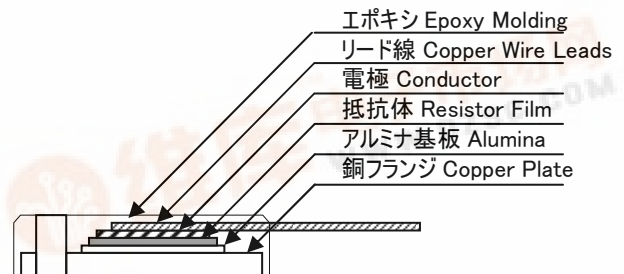


Features and Applications

- Up to 140W high power rating at 25C flange temperature cased in TO-247 mold package.
- Just 0.9C/W thermal resistance from resistor surface to flange or metal back plate realized.
- Complete thermal conduction and heat transfer design available.
- Linear temperature raise/applied power characteristics realized.
- Exposed high thermal conduction metal useful in excellent heat transfer to outer heat sink.
- Insulation sheet unnecessary, sufficient insulation between circuit and back metal supported in internal structure.
- Non-inductive design effective in wide frequency range.
- Small size 100W power resistors and thin type fit for higher density design of power electronics.
- RNP100S will be applicable in such industrial power equipment and radio frequency circuits as UPS, motor control, power amplifiers, RF power amplifiers, automated machine controls and power supplies.



Structure and Material



Specifications and Performances

Items	性能仕様 Specification		試験条件 Conditions
Rating Power	140 Watts		
Rating Power	5.0 Watts		Free air.
Resistance Range	0.1-9.1 ohm	10-200 ohm	More than 200 ohm resistance are available
Nominal Resistance	E12	E24	Additional 2.0 and 5.0.
TCR	100 ppm/C	50 ppm/C	For -55 to +155C
Tolerance	+/- 5% and +/- 1%		
Operation Temp. Range	-55 - +155 C		
Max. Applied Voltage	$\sqrt{P \cdot R}$		
Withstanding Voltage	2500 Volt		60 seconds.
Load Life	+/- (1.0 % + 0.05 ohm)		25C, 90 min. ON, 30min.OFF, 1000hours.
Humidity	+/- (1.0 % + 0.05 ohm)		40C, 90-95%RH, DC0.1W, 1000hours.
Temperature Cycle	+/- (0.25 % + 0.05 ohm)		-55C, 30 min., +155C 30min., 5cycles.
Soldering Heat	+/- (0.25 % + 0.05 ohm)		350+/-5C, 3seconds,
Solder ability	Over 3/4 of round		230+/-5C, 3seconds.
Insulation Resistance	Over 1000 Meg ohm		Between terminals and metal back plate.
Vibration	+/- (0.25 % + 0.05 ohm)		



140W HIGH POWER RESISTORS

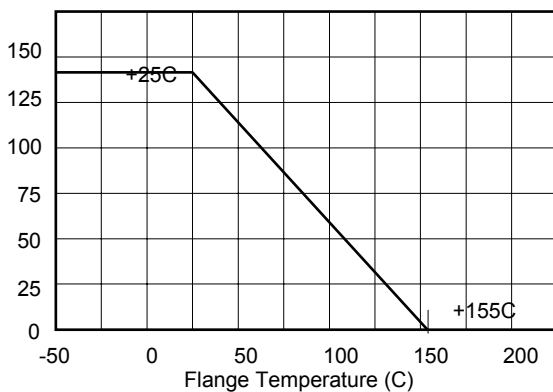
RNP100S

Ordering Information

P/N	Type	TCR	Resistance	Tolerance	Code/Notes
RNP100SA1R2F000	RNP100S	A(100ppm/C)	1R2	F(1%)	(1.2ohm, 100ppm, 1%)
RNP100SA1R2FZ00	RNP100S	A(100ppm/C)	1R2	F(1%)	(1.2ohm, 1%, Lead-free)
RNP100SC100F000	RNP100S	C(50ppm/C)	100	F(1%)	(10ohm, 100ppm, 1%)
RNP100SC100FZ00	RNP100S	C(50ppm/C)	100	F(1%)	(10ohm, 1%, Lead-free)

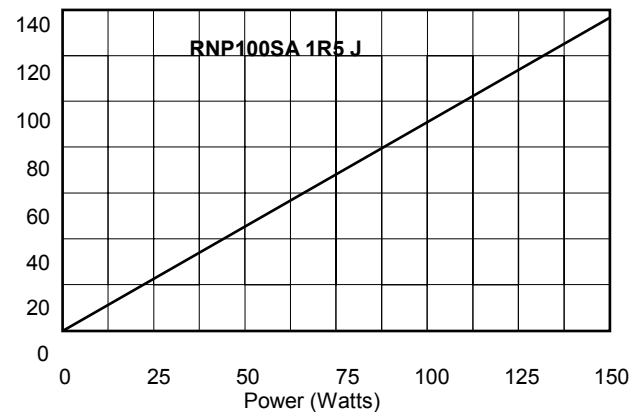
Derating Curve

Rating Power(W)



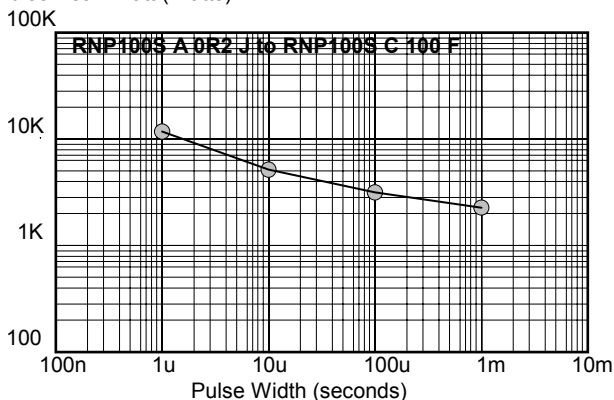
Temperature Rise

Resistor surface temperature rise based on flange (C)



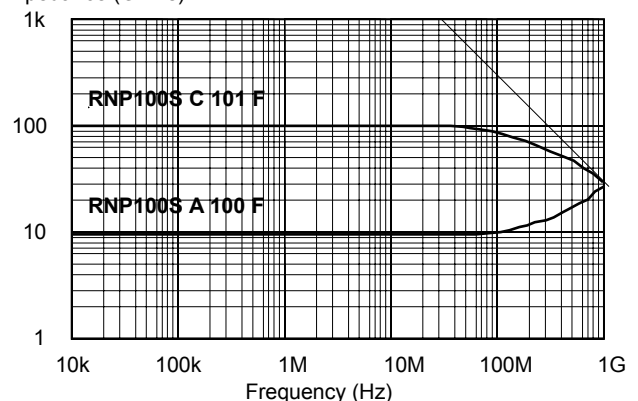
Pulse Energy Durability

Pulse Peak Watt (Watts)



Frequency Characteristics

Impedance (Ohms)



Recommendation

- (1) Flat surface heat sink, thermal compound and sufficient mount screw torque will be necessary for well heat transfer.
- (2) In rush current protection application as charge current limitation resistor, sufficient power derating will be necessary.

Design for heat release

