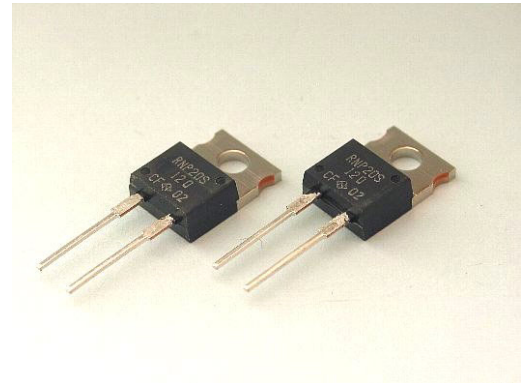


TO220 35W HIGH POWER RESISTORS
RNP20S



Features and Applications

35W high power resistors in TO220 style molded package for through-hole (30W) and surface mount (30W).

Non-inductive design suits high frequency applications and high-speed pulse circuits.

Low, 3.3 C/W heat resistance from resistor hot spot to flange presented by thin film metallization technology.

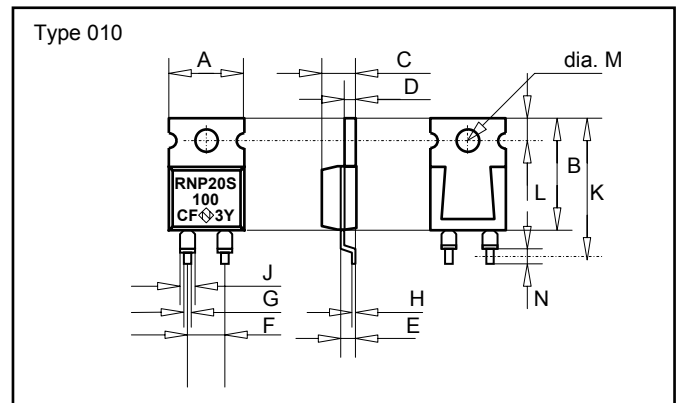
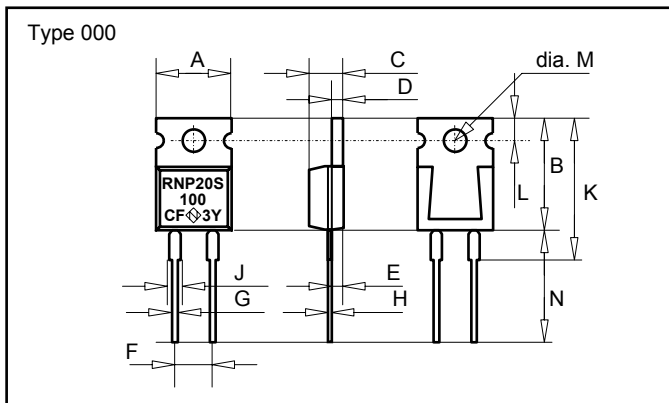
Wide, 100 m Ohm to 220 Ohm resistance range, non-inductive impedance characteristic and heat venting through insulated metal tab aids circuit designers.

Small size and thin profile suits high-density compact installations.

Complete thermal conduction, heat dissipation design and vibration durable design to be available.

Application in SW PS, power unit of machines, motor control, drive circuits, automobiles, measurements, and industrial computers.

Dimensional Specifications (mm)



Type	A	B	C	D	E	F	G	H	J	K	L	M	N
000	10.6	15.0	4.5	1.5	2.7	5.08	0.75	0.5	1.5	19.0	2.7	3.6	15.0
010	10.6	15.0	4.5	1.5	2.7	5.08	0.75	0.5	1.5	14.0	2.7	3.6	2.0

Ordering Information

Designation	Type	TC	Resistance	Tolerance	Lead forming
RNP20SC221F000	RNP20S	C(50ppm)	220ohm	F(1%)	000 (through-hole)
RNP20SC101F010	RNP20S	C(50ppm)	100ohm	F(1%)	010 (smd)
RNP20SAR1J000	RNP20S	A(100ppm)	0.1ohm	J(5%)	000 (through-hole)
RNP20SC500F000	RNP20S	C(50ppm)	50ohm	F(1%)	010 (smd)

Note: (1) When ordering, additional ohmic resistance notation recommended.

30W HIGH POWER RESISTORS

RNP20S

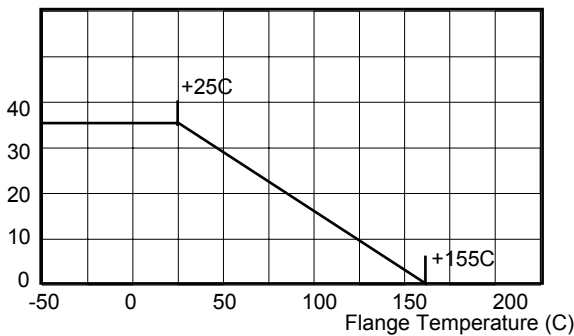
Specifications

Items	Specification-Performance			Test Conditions
Rating Power	30 Watt			-55 to 25 C flange temperature
Rating Power	1 Watt			Free air.
Heat Resistance	3.3 C/W			Hot spot to flange
Resistance Range	0.01-0.91ohm	0.1-9.1ohm	10-220ohm	220-51k ohm are available, see Note
Nominal Resistance	E6	E24	E24	Include 2.5 and 5.0
TCR(ppm/K)	250(H)	100 (A)	50 (C)	-55 to +155 C
Tolerance	5%(J)	1% (F) 5% (J)	+/-1% (F)	
Operation Temp.	-55C to+155C			
Max. Operating Volt.	500V or $\sqrt{P \cdot R}$			
Withstanding Volt.	DC2000 Volt			60 seconds. Actual 2000VAC
Load Life	+/- (1.0 % + 0.05 ohm)			25C, 90 min.ON, 30 min.OFF, 1000 hours.
Humidity	+/- (1.0 % + 0.05 ohm)			40C, 90-95%RH, DC 0.1W, 1000 hours.
Temp. Cycle	+/- (0.25 % + 0.05 ohm)			-55 C, 30 min., +155 C, 30 min., 5cycles
Soldering Heat	+/- (0.1 % + 0.05 ohm)			350+/-5 C, 3seconds,
Solder ability	Over 95% of surface			230+/-5 C, 3seconds.
Insulation Resistance	Over 1,000 Meg ohm			Between terminals and tab.
Vibration	+/- (0.25 % + 0.05 ohm)			

Note: At resistance from 220 to 51kohms rating power shall be restricted in 20W.

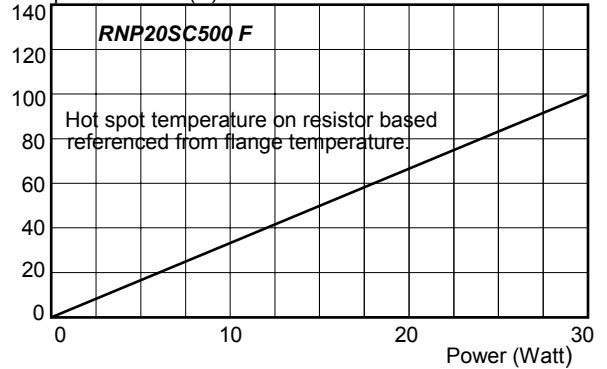
Derating

Rating Power (W)



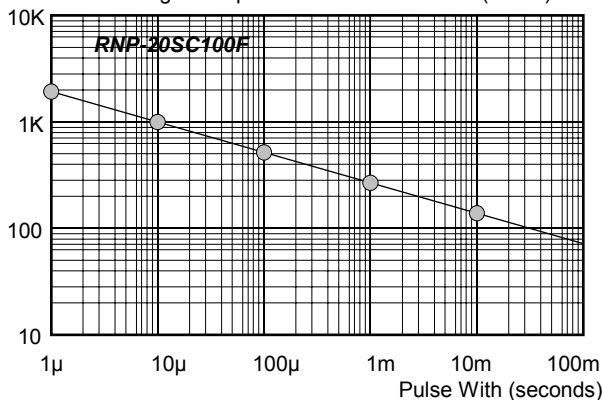
Temperature Rise

Temperature Rise (C)



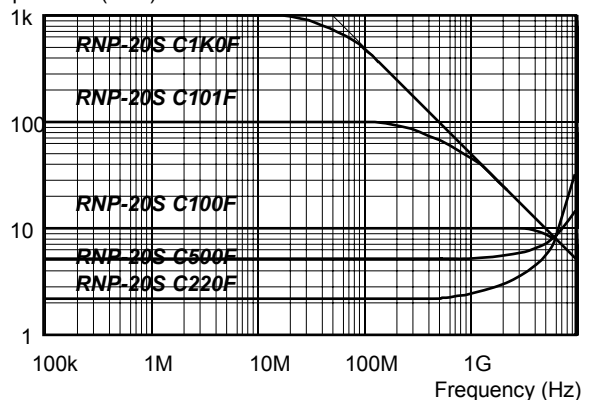
Pulse Energy Durability

One time rectangular impulse. Pulse Peak Watt (Watts)



Frequency Characteristics

Impedance (ohm)



Note:

- (1) Insulating material is unnecessary between flange and resistors, flange and resistor is separated by alumina substrate.
- (2) At surface mount soldering, temperature profile in Flange shall not exceed 220C.
- (3) Using heat conduction grease on surface of flange is recommended.
- (4) Heat resistance between resistor and flange is 3.3 C/W. Heat design will be done, as resistor temperature shall be under 155C in operation.
- (5) 0.1% tolerance resistors and over 220ohm resistance are available, please call factory.