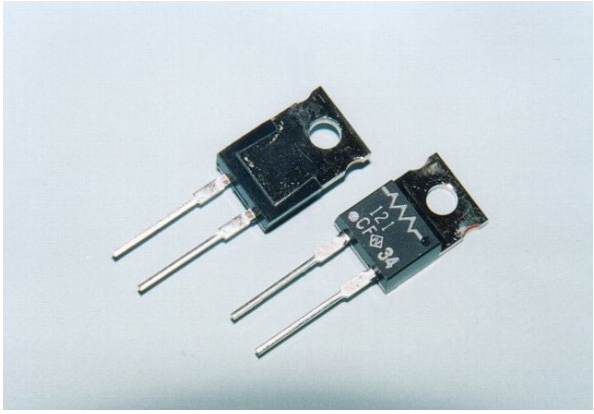
TO220 20W HIGH POWER RESISTORS
RNP-10

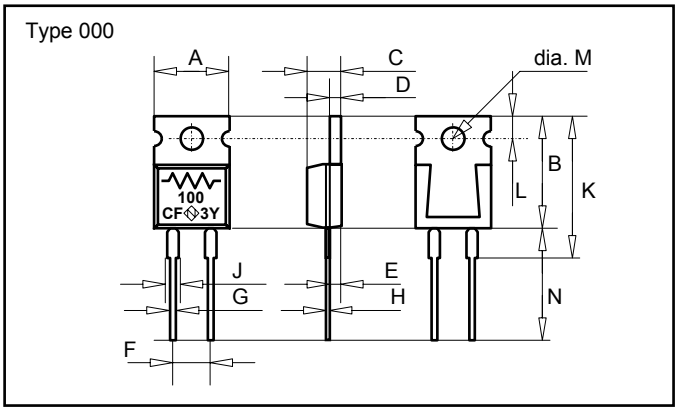
DB LECTRO INC
COMPOSANTS ÉLECTRONIQUES
ELECTRONIC COMPONENTS

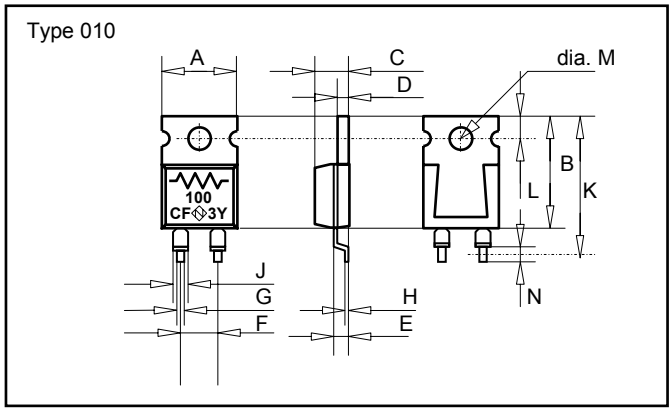


Features and Applications

20W high power resistors in TO220 style molded package for through-hole (20W) and surface mount (10W).
Non-inductive design suits high frequency applications and high-speed pulse circuits.
Low, 5.9 C/W heat resistance from resistor hot spot to flange is presented by thin film metallization technology.
Wide 100 mOhm to 220 Ohm resistance range, non-inductive impedance characteristic and heat venting through the insulated metal tab aid circuit designers.
Small size and thin profile suit high-density compact installations.
Complete thermal conduction, heat dissipation design and vibration durable design also available.
Applications for SW PS, power unit of machines, motor control, drive circuits, automotive, measurements, and industrial computers.

Dimensions (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(1)	Tolerance	Code
RNP-10C221F000	RNP-10	C(50ppm)	220 ohm	F(1%)	000 (through-hole)
RNP-10C221F000	RNP-10	C(50ppm)	220 ohm	F(1%)	Z00 (Lead-free, through-hole)
RNP-10C101F010	RNP-10	C(50ppm)	100 ohm	F(1%)	010 (smd)
RNP-10C101F010	RNP-10	C(50ppm)	100 ohm	F(1%)	Z10 (Lead-free, smd)
RNP-10AR1J000	RNP-10	A(100ppm)	0.1 ohm	J(5%)	000 (through-hole)
RNP-10C500F000	RNP-10	C(50ppm)	50 ohm	F(1%)	010 (smd)

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

20W HIGH POWER RESISTORS

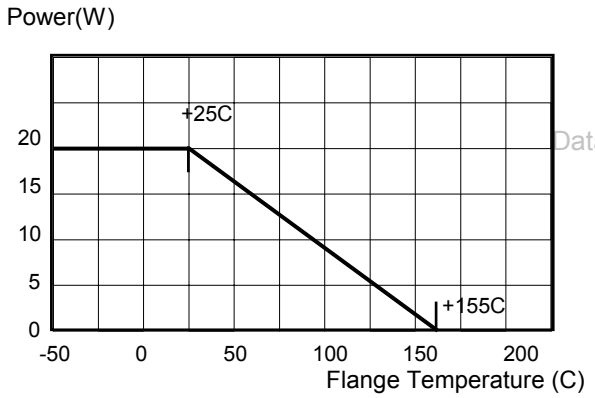
RNP-10

Specifications

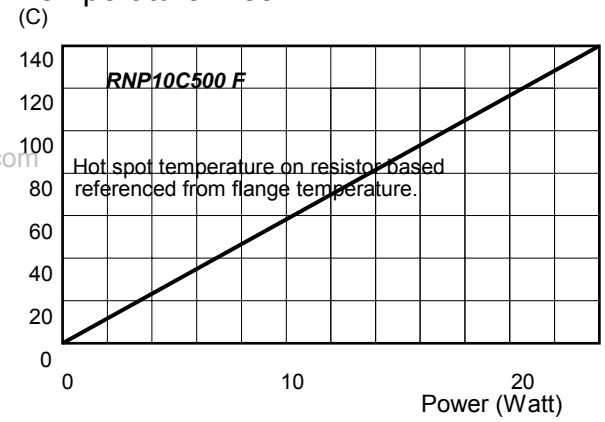
Items	Specification-Performance			Test Conditions
Rating Power	20 Watt			-55 to 25 C flange temperature
Rating Power	1 Watt			Free air.
Heat Resistance	5.9 C/W			Hot spot to flange
Resistance Range	0.01-0.91ohm	0.1-9.1ohm	10-220ohm	220-51k ohm are available, see Note
Nominal Resistance	E6	E24	E24	Include 2.5 and 5.0
TCR (ppm/□)	250(H)	100 (A)	50 (C)	-55 to +155 C
Tolerance	5%(J)	5% (J)	+/-1% (F)	
Operation Temp. Range	-55□ to+155□			
Max. Operating Volt.	500V or $\sqrt{P \cdot R}$			
Withstanding Volt.	DC2000 Volt			60 seconds. Actually 2000VAC
Load Life	+/-(1.0 %+0.05 ohm)			25C, 90min .ON,30min .OFF,1000hours.
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 10W.

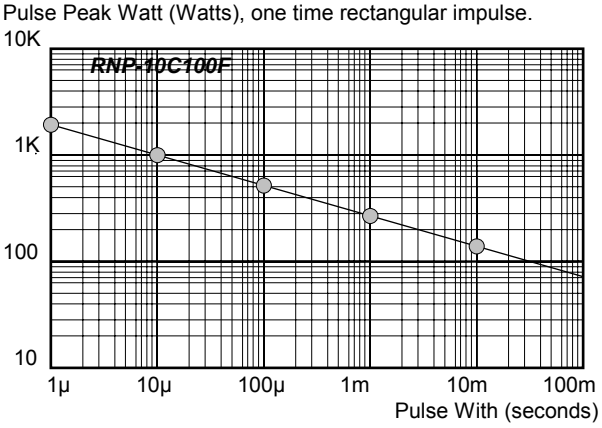
Derating



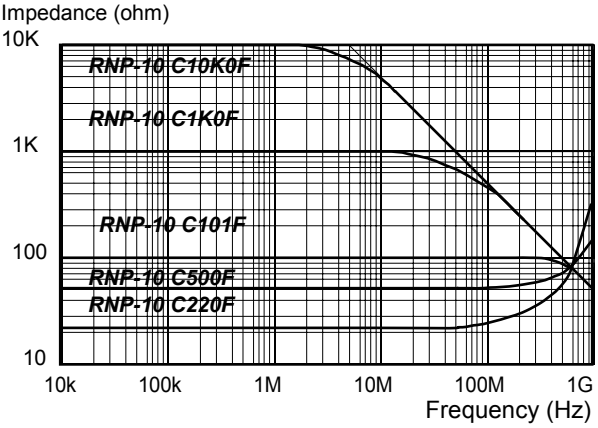
Temperature Rise



Pulse Energy Durability



Frequency Characteristics



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 5.9 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.

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