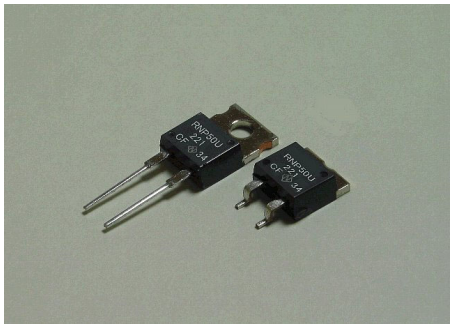
50W TO220 HIGH POWER RESISTORS

RNP50U

DB LECTRO INC
COMPOSANTS ÉLECTRONIQUES
ELECTRONIC COMPONENTS

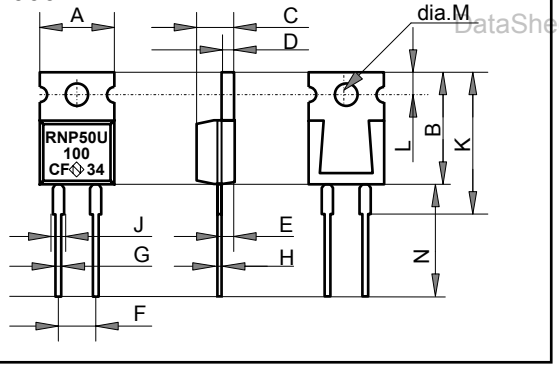


Features and Applications

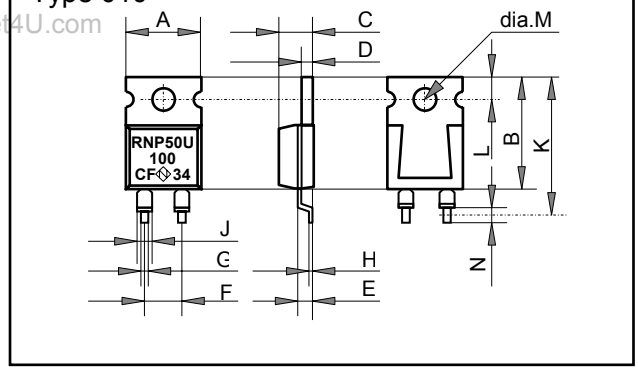
50W high power resistors in TO220 molded package, through-hole and surface mount.
Non-inductive design suits for high frequency applications and high-speed pulse circuits.
Low, 2.3 C/W heat resistance from resistor hot spot to flange is presented through thin film metalization technology.
Wide, 100mohm to 220ohm resistance range, non-inductive impedance characteristic and heat venting through insulated metal flange aids circuit designers. Small size and thin profile suits for high-density compact installations. Complete thermal conduction, heat dissipation design and vibration durable design to be available.
Applications in SW PS, power units of machines, motor controls, drive circuits, automotive, measurements, and industrial computers.

Dimensional Specifications (mm)

Type 000



Type 010



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

P/N	Type	TC	Resistance	Tolerance	Code
RNP50UC221F000	RNP50U	C(50ppm)	220ohm	F(1%)	000 (through-hole)
RNP50UC221FZ00	RNP50U	C(50ppm)	220ohm	F(1%)	Z00 (Lead-free, through-hole)
RNP50UC101F010	RNP50U	C(50ppm)	100ohm	F(1%)	010 (smd)
RNP50UA0R1J000	RNP50U	A(100ppm)	0.1ohm	J(5%)	000 (through-hole)
RNP50UA0R1JZ00	RNP50U	A(100ppm)	0.1ohm	J(5%)	Z00 (Lead-free, through-hole)
RNP50UC500F000	RNP50U	C(50ppm)	50ohm	F(1%)	010 (smd)

Note:

(1) Insulating material is not necessary between flange and resistors , flange and resistor is separated by alumina substrate.
(2) At surface mount soldering, temperature profile in tab shall not exceed 220C.
(3) Using heat conduction grease on surface of flange is recommended.
(4) Heat resistance between resistor and tab is 2.3 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.

POWER SOLUTION - DBL

Lead Free

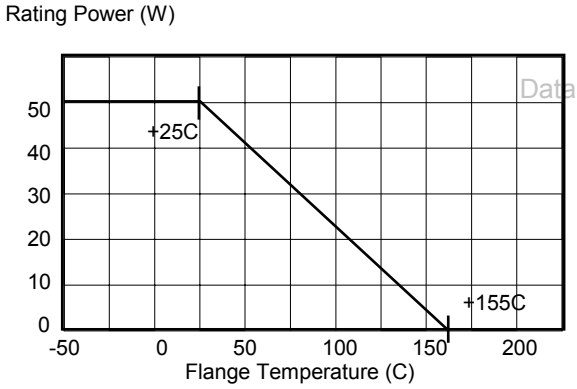
50W TO220 HIGH POWER RESISTORS RNP50U

Specifications

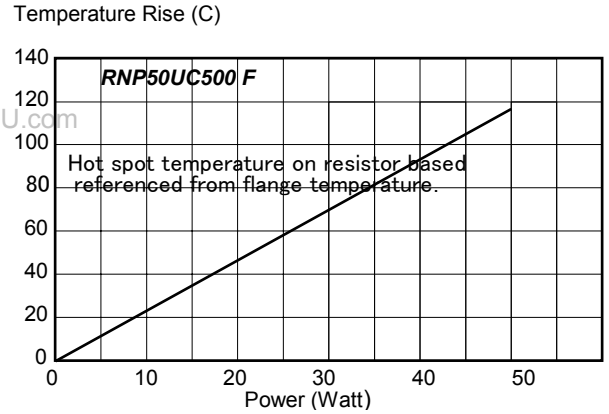
	Specifications		Test Conditions
Rated Power	50 Watt		-55 to 25 C flange temperature
Rating Power	1 Watt		Free air.
Heat Resistance	2.3 C/W		Hot spot to flange
Resistance Range	0.1-9.1ohm	10-220ohm	220-51k ohm are available, see Note
Nominal Resistance	E24	E24	Include 2.5 and 5.0
TCR	100ppm/C (A)	50ppm/C (C)	-55 to +155 C
Tolerance	1% (F) and 5% (J)	+/-1% (F)	
Operation Temp. Range	-55C to+155C		
Max. Operating Volt.	500V or sqrt (PR)		
Withstanding Voltage	DC2000 Volt		60 seconds.
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 30W.

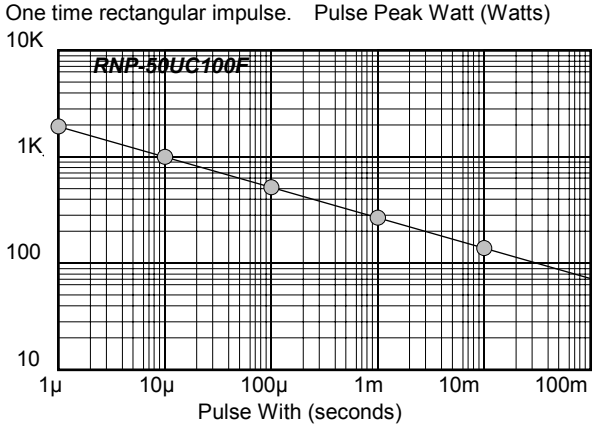
Derating



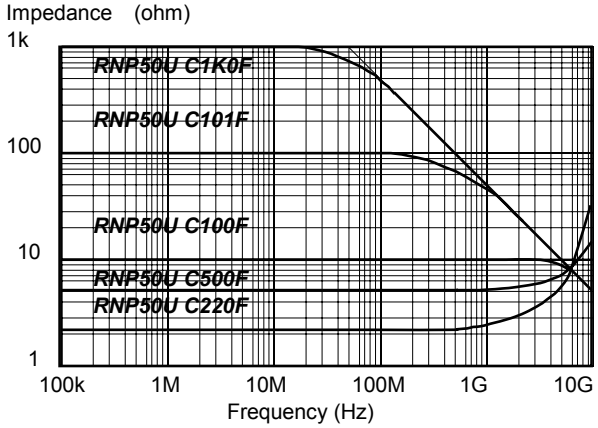
Temperature Rise



Pulse Energy Durability



Frequency Characteristics



20050126