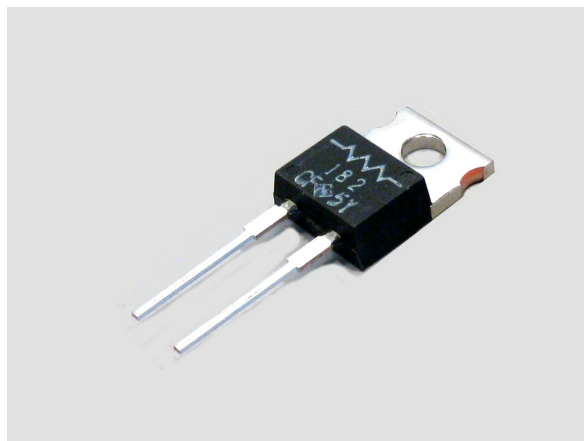


TO220 20W 高電力抵抗器

TO220 20W HIGH POWER RESISTORS

RNP-10



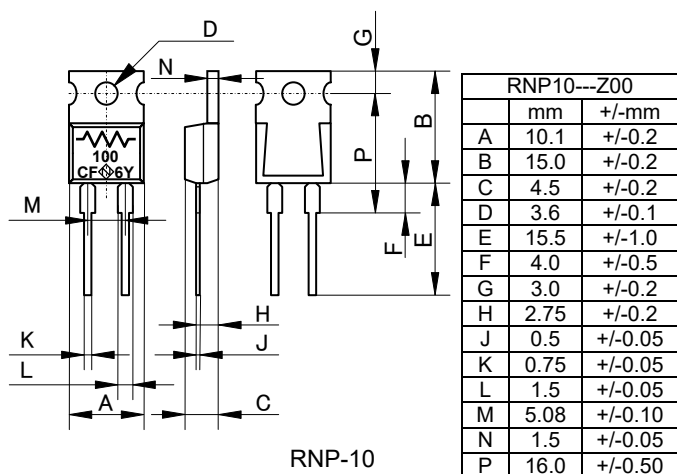
特長 用途

1985 年に世界で始めて開発し市場に供給し、いまなお安定供給を継続している TO220 形の定格電力 20W 高電力抵抗器。  
 D C から数 100MHz にて誘導性、容量性ともにきわめて少ない特長があり、50Ω から 100Ω では 1GHz 付近まで平坦な特性を示し、高周波回路、高速パルス回路に最適な抵抗器。  
 独創的内部構造によって、最高使用温度 155℃ の抵抗体とフランジ間の熱抵抗を 5.9℃/W まで減少させ、優秀な熱放散特性。  
 フランジは、内部の抵抗器回路と耐圧 2KV で絶縁。  
 小型、高耐振性、完璧な熱設計の高密度実装が可能。  
 車載電装機器、インバータ、UPS、モータ制御、精密プログラム電源、定電流電源、電子負荷、高周波電源、高周波増幅器、50Ω ターミネーション。  
 許容差 0.1% は、RNP-20P のデータシートを参照。

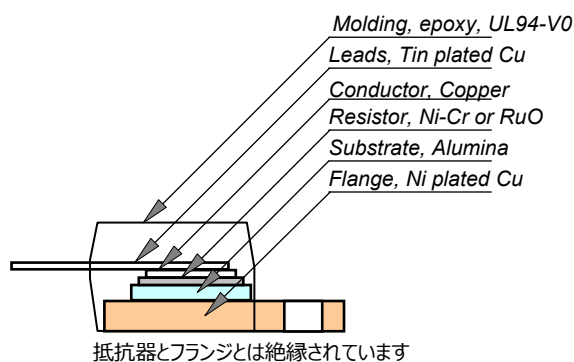
Features and Applications

20W high power resistors in TO220 style molded package for through-hole (20W).  
 Non-inductive design fits for high frequency applications and high-speed pulse circuits.  
 Low, 5.9 deg C/W heat resistance from resistor hot spot to flange is presented by thin film metal cover technology.  
 Wide, 100mΩ to 51kΩ resistance range, non-inductive impedance characteristic and pulling heat out through insulated metal tab help circuit designers.  
 Complete thermal conduction, heat dissipation design and vibration durable design will be available.  
 Applications for power control, SW PS, power unit of machine, motor control, drive circuit, automotive, measurements and industrial computer.

寸法 Dimensional Specifications (mm)



構造・材料、Structure and Material



品目番号 Ordering Information

RNP-10	C	10R0 (*)	F	Z03	Note
RNP-10	H(250ppm)	R02-R091 (+E6)	J(5%)	Z03	Tube / 50pcs
	A(100ppm)	R10-9R1 (+E24)	F(1%), J(5%)	Z05	Tray / 100pcs
	C(50ppm)	10R-51K (+E24)	F(1%)		

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

Note\*: When ordering, additional ohm resistance notation is recommended for keeping out of misunderstanding.

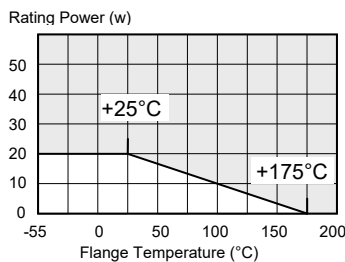
TO220 20W 高電力抵抗器 20W HIGH POWER RESISTORS RNP-10

性能仕様 Specifications

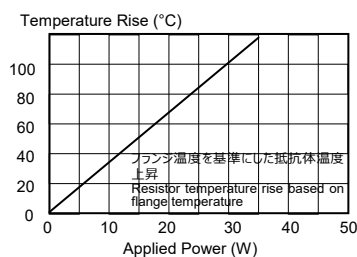
定格電力	Rating Power	20 W			-55 to 25°C flange temperature
定格電力	Rating Power	1 W			Free air.
熱抵抗	Heat Resistance	5.9 °C/W			Resistor to flange
抵抗値範囲	Resistance Range	0.02-0.091Ω	0.10-9.1Ω	10-51kΩ	
抵抗値	Nominal Resistance	E6	E24	E24	Includes 2.5, 4.0, 5.0, 8.0 and 16
抵抗温度係数	TCR (ppm/°C)	250(H)	100 (A)	50 (C)	-55 to +155°C
抵抗値許容差	Tolerance	5%(J)	5% (J)	+/-1% (F)	1% tolerance at 0.01-0.091 Ω are option
等価並列容量	Capacitance	1.15 pF			Equivalent parallel capacitance.
インダクタンス	Inductance	8.38 nH			Equivalent series inductance
動作温度範囲	Operation Temp. Range	-55 °C to +155 °C			
最高使用電圧	Max. Operating Volt.	Small value either 500V or $\sqrt{P \cdot R}$			P: rating power, R: resistance
絶縁耐電圧	Withstanding Volt.	2000 VAC			60 seconds, 1mA
負荷寿命	Load Life	+/- 1.0 %			25 °C, 90 min .ON, 30 min .OFF, 1000 h
耐湿性	Humidity	+/- 1.0 %			40 °C, 90-95%RH, DC 0.1W, 1000 hours.
温度サイクル	Temp. Cycle	+/- 0.25 %			-55 °C,30 min.,+155 deg C,30 min., 5cycl
はんだ耐熱性	Soldering Heat	+/- 0.1 %			350+/-5 °C, 3 seconds,
はんだ付性	Solder ability	Over 95% of surface			230+/-5 °C, 3 seconds.
絶縁抵抗	Insulation Resistance	Over 1,000 Meg Ω			Between terminals and flange.
耐振性	Vibration	+/- 0.25 %			IEC60068-2-6, see note 1
重量	Weight	2.1 grams			

Note 1: Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s<sup>2</sup>, 90minutes. direction x-y z, Amplitude 0.75mm will be applied under break point Frequency (about 60Hz) and 100m/ s<sup>2</sup> over break point

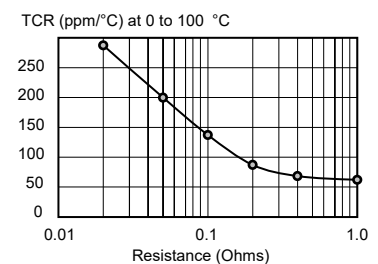
負荷軽減



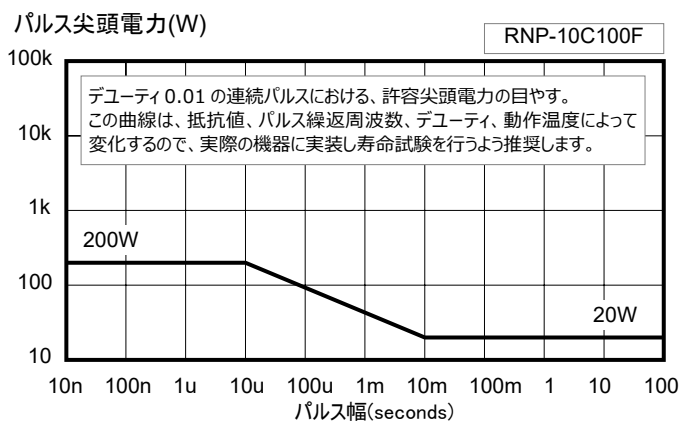
温度上昇



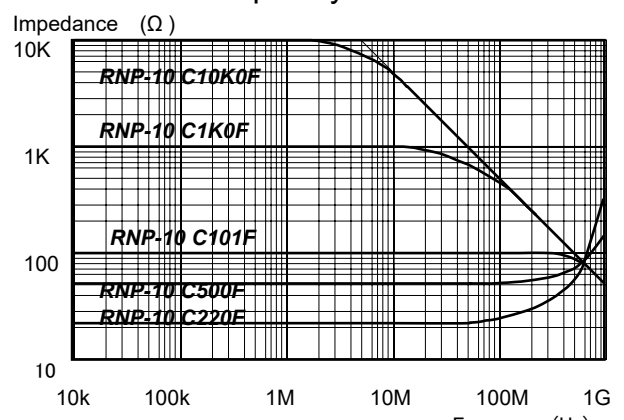
低抵抗 TCR



パルス許容電力



周波数特性 Frequency Characteristics



注記事項:

(1) フランジは内部回路と絶縁されていますから、取り付けの際絶縁シートは不要です。熱伝導グリースは使用してください。

Note:

- (1) Insulating material is unnecessary between flange and resistors, flange and resistor is separated by alumina substrate.
- (2) Resistance measurement shall be made at a point 5.27mm +/-0.6 mm from the resistor body.
- (3) When mounting resistor on heat-sink, screw, clip and pressure strip with using heat conduction grease on back side of resistor are recommended. Recommended screw torque is 0.5-0.6Nm.