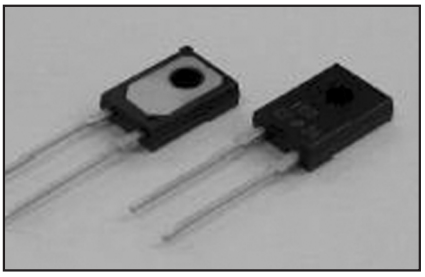
RoHS COMPLIANT

TO126 / TO220 10W Precision Power Resistors

TNP10P / TNP20P are precision power resistors. Tolerances of 0.1%(B) and TCRs of 5ppm/℃ are available. Rated power is 10W if attached to metal case or heatsink. Using thin film technology these units have a proportional temperature vs. small resistance changes between -55℃ and +120℃. In DC ranges of up to 100MHz these components are non-inductive and noncapacitive. Units come with a 2KV withstanding voltage between circuit and flange. Applications include: AC power supplies, testing equipment, UPS, motor control, electronics loads, high frequency power supply, 50Ω terminations, high frequency adjustment resistors and Wilkinson amplifiers.



GENERAL SPECIFICATIONS

Resistance Range[Ω]	0.1 ~ 0.99	1 ~ 5	5~51K
Temperature coefficient [ppm/℃]	±25	±5, ±10, ±25	±5, ±10, ±25
Tolerance	1%, 2%, 5%	0.1%, 0.5%, 1%	0.05%, 0.1%, 0.25%, 0.5%
Nominal Resistance			E24 and any values
Operation Temperature Range			-55℃ ~ +120℃
Operating Temperature			+25℃
Power Rating			10W (-55℃ to 25℃ flange temperature), 0.5W(in free air) 5W(-55℃ to 25℃ flange temperature)
Heat Resistance			TNP20P : 3.3℃/W / TNP10P : 5.9℃/W (Hot spot flange)
Maximum Operating Voltage			500V or $\sqrt{P*R}$
Inductance			10nH
Capacitance			1pF

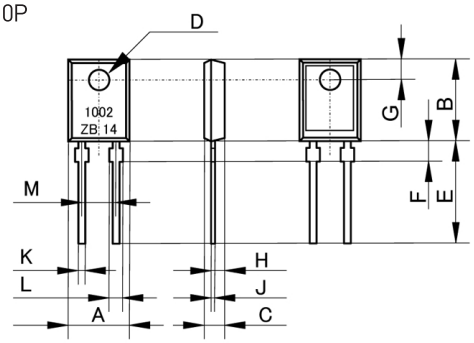
CHARACTERISTICS

Values in [ ] mean change in Ω after test

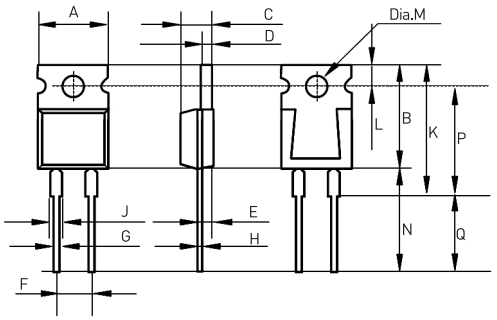
Insulation Resistance	[Over 1,000MΩ]	Between terminals and flange
Dielectric Withstanding Voltage		AC2000V for 60seconds
Short Time Overload	±[0.25%+0.05Ω]	2.5 x Power rating, 5 seconds, with heat sink
Moisture Resistance	±[1.0%+0.05Ω]	40℃, 90~95% RH, DC 0.1 x Power rating, 1000 hours
Temperature Cycle	±[0.25%+0.05Ω]	-55℃, 30 minutes, +120℃, 30 minutes, 5cycles
Vibration	±[0.25%+0.05Ω]	JISC5202
Soldering Heat	±[0.1%+0.05Ω]	350±5℃, 3 seconds
Solerability	Over 3/4 of surface	230±5℃, 3 seconds
Terminal Strength	±[0.25%+0.05Ω]	Tension 4.9N, 1~5 seconds, Bend 2.45N, 90℃, 2 times
Load Life	±[1.0%+0.05Ω]	25℃, 90 minutes on, 30 minutes off, 1000 hours

DIMENSIONS [mm]

TNP10P



TNP20P

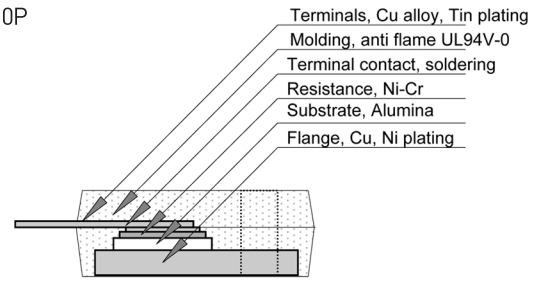


	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
TNP10P	8.5±0.2	12.0±0.2	3.1±0.2	3.1±0.1	17.0±1.0	3.2±0.5	3.8±0.2	1.75±1	0.5±0.05	0.6±0.05	1.4±0.05	5.08±0.1	-	-	-
TNP20P	10.1±0.2	15.0±0.2	4.5±0.2	1.5±0.1	2.45±0.2	5.08±0.5	0.75	0.50	1.5	19.0	2.7±0.5	3.6 dia.	15.0 min.	16.0±0.5	11.0 min.

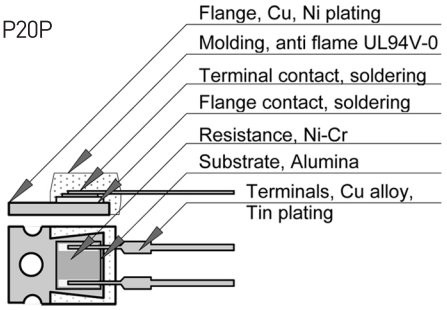
Tel: 82-32-817-4325 Fax: 82-32-817-4329

STRUCTURE

TNP10P

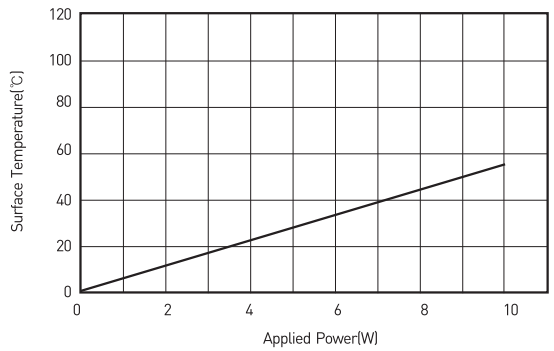


TNP20P

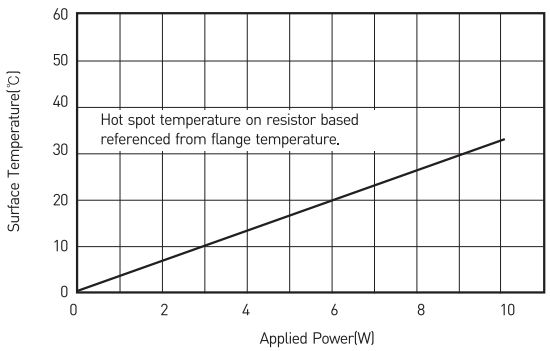


TEMPERATURE RISE CURVES

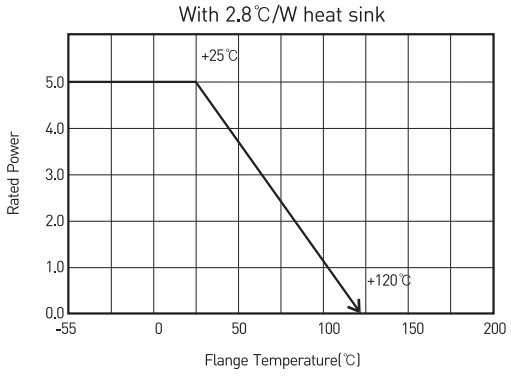
TNP10P



TNP20P



DERATING CURVE



ORDERING PROCEDURE EXAMPLE

TNP20P	Z	200R00	T
Model #	TCR	Resistance	Tolerance
	Z: ±5ppm/°C N: ±10ppm/°C E: ±25ppm/°C	200R00: 220Ω 2K0000: 2KΩ 2K5252: 2.5252KΩ 1R2500: 1.25Ω	T: ±0.01% C: ±0.25% Q: ±0.02% D: ±0.5% A: ±0.05% F: ±1.0% B: ±0.1% G: ±2.0% J: ±5.0%