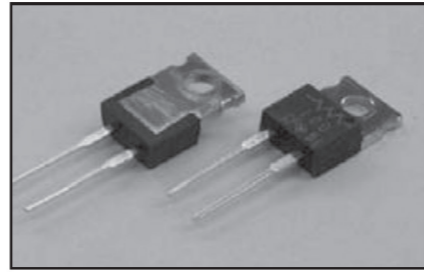


TO220 10W Precision Power Resistors

TNP20P are precision power resistors. Tolerances of 0.1%(B) and TCRs of 5ppm/°C 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°C and +120°C. 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.



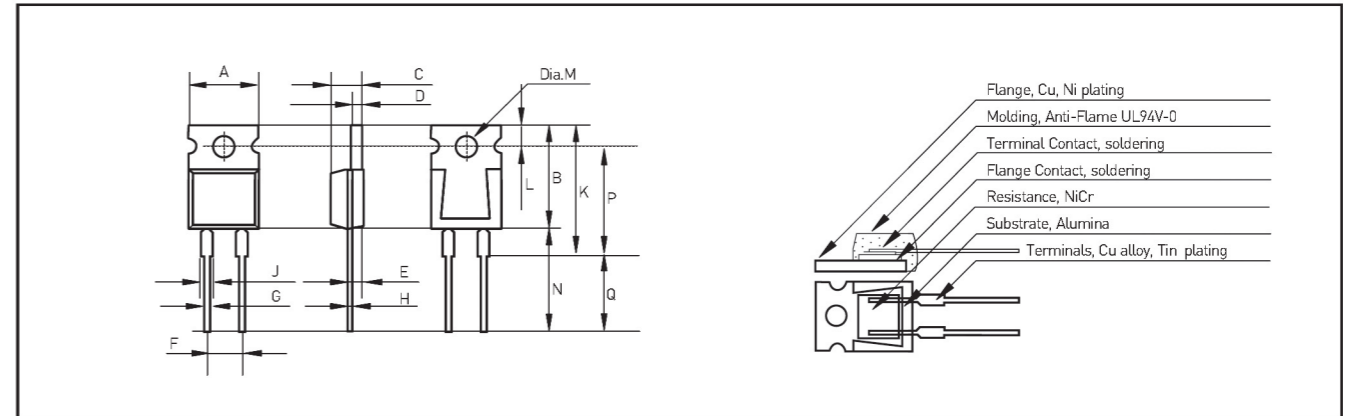
GENERAL SPECIFICATIONS

Resistance Range[Ω]	0.1 ~ 0.99	1 ~ 5	5~51K
TCR[PPM/°C]	±25	±5, ±10, ±25	±5, ±10, ±25
Tolerance	F(±1%), G(±2%), J(±5%)	D(±0.5%), F(±1%)	A(±0.05%), B(±0.1%), C(±0.25%), D(±0.5%)
Nominal Resistance	E24 and any values		
Operation Temp. Range	-55 to +155 °C		
Rating Temperature	+25 °C		
Power Rating	10W (-55 °C to 25 °C flange temperature)		
Heat Resistance	3.3°C/W		
Max Operating Volt.	500V or $\sqrt{P \cdot R}$		
Inductance	10nH		
Capacitance	1pF		

CHARACTERISTICS

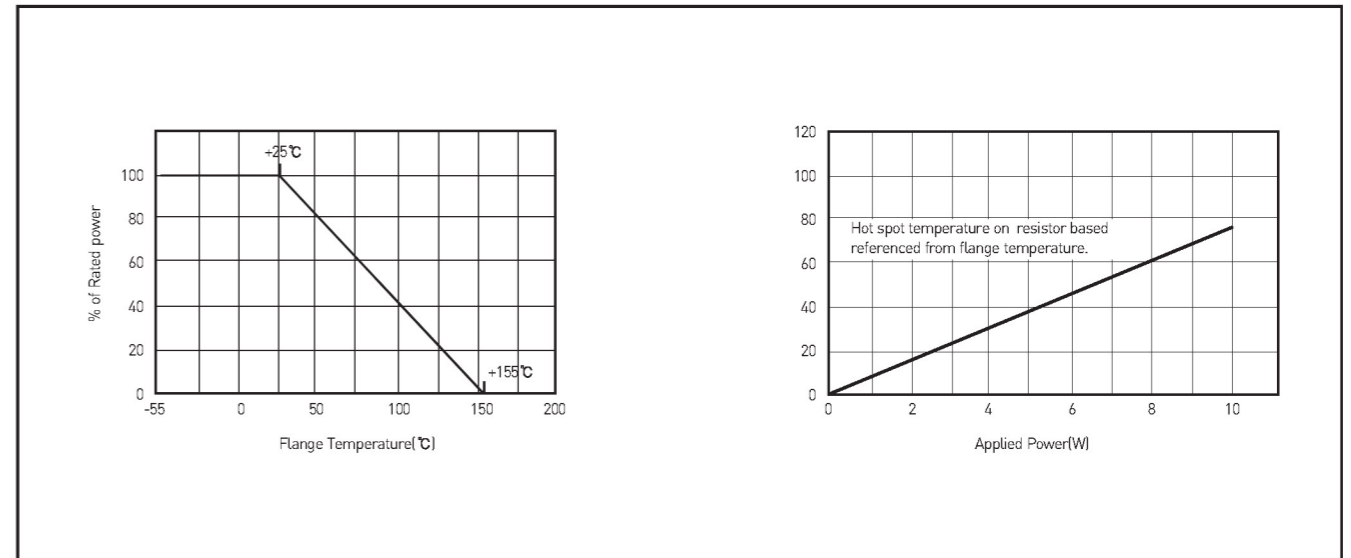
Insulation Resistance	[Over 1,000MΩ]	Between terminals and flange.
Dielectric Withstanding Voltage		DC2000V for 60 sec.
Short Time Overload	±[0.25%+0.05Ω]	Rating power×2.5, 5 sec, with heat sink.
Moisture Resistance	±[1.0%+0.05Ω]	60°C, 90~95%RH, DC 0.1W, 1000 hours.
Temp. Cycle	±[0.25%+0.05Ω]	-55°C, 30 minutes, +120°C, 30 minutes, 5 cycles
Vibration	±[0.25%+0.05Ω]	±JISC5202
Soldering Heat	±[0.1%+0.05Ω]	350°C±5°C, 3 sec.
Solderability	[Over 3/4 of surface]	230°C±5°C, 3 sec.
Terminal Strength	±[0.25%+0.05Ω]	Tension 4.9N, 1~5 sec. Bend 2.45N, 90°C, 2 times.
Load Life	±[1.0%+0.05Ω]	25°C, 90 minutes on, 30 minutes off, 1000 hours

DIMENSIONS [mm] AND STRUCTURE



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
10.0±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.

DERATING CURVE AND TEMPERATURE RISE



ORDERING PROCEDURE EXAMPLE

