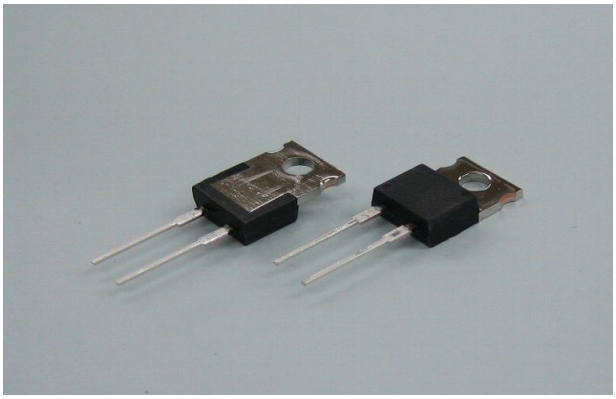
Tateyama Kagaku Industries Co.,Ltd.

50W HIGH POWER RESISTORS

■ TO220
HPR5S



Features :

- 50W high power resistors in TO220 package.
- Very low heat resistance of 2.3 deg C/W.
- Heat dissipation and vibration durable design.
- Small and thin package for high-density assembly.

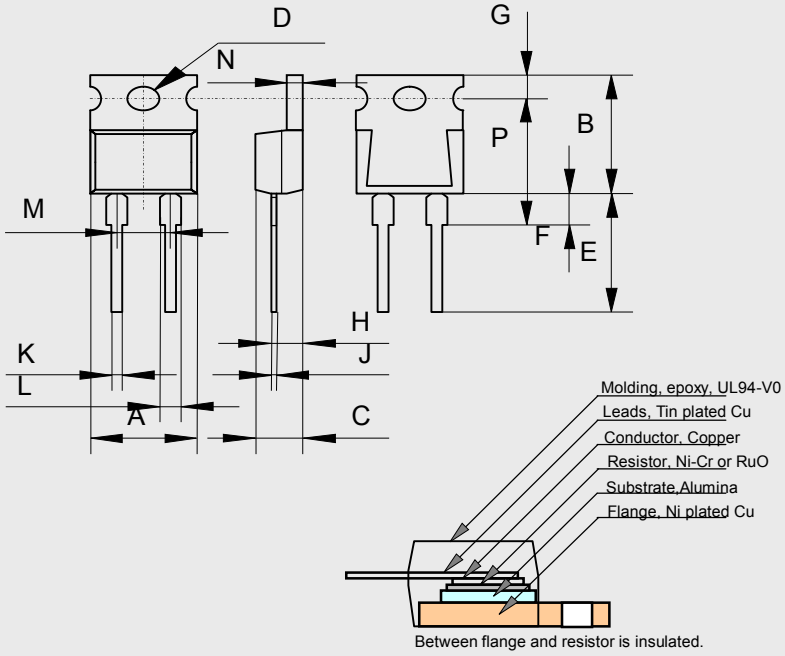
Applications:

Non-inductive design suits high frequency applications and high-speed pulse circuits.

- UPS, power unit of machines, motor control, drive circuits, automotive, measurements, industrial computers and high frequency electronics.

Structure and Dimensions (mm) :

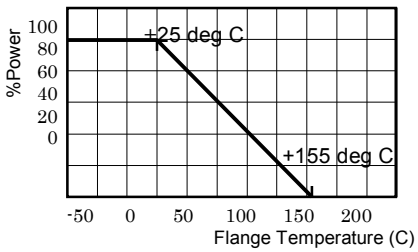
HPR5S		
	mm	+/-mm
A	10.1	+/-0.2
B	15.0	+/-0.2
C	4.5	+/-0.2
D	3.6	+/-0.1
E	15.5	+/-1.0
F	4.0	+/-0.5
G	3.0	+/-0.2
H	2.75	+/-0.2
J	0.5	+/-0.05
K	0.75	+/-0.05
L	1.5	+/-0.05
M	5.08	+/-0.10
N	1.5	+/-0.05
P	16.0	+/-0.50



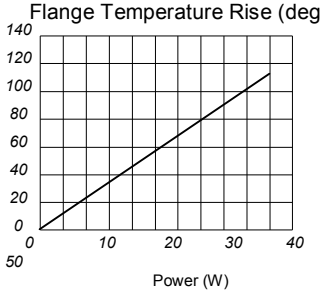
Specifications

Rated Power	50 W			-55 deg C to 25 deg C flange temperature
Rating Power	1 W			Free air.
Heat Resistance	2.3 deg C/W			Hot spot to flange
Resistance Range	0.022-0.068Ω	0.1-9.1Ω	10-51KΩ	Note 2
Nominal Resistance	E6	E24	E24	Include 2.5, 4.0, 5.0, 8.0
TCR, ppm/deg C	±250	±100	±50	Note 3
Tolerance	±5%(J)	±5% (J)	±1% (F), ±5%(J)	-
Capacitance	1.69pF			Equivalent parallel capacitance.
Inductance	9.65nH			Equivalent series inductance
Operation Temp.	-55 deg C to+155 deg C			-
Max. Operating Volt.	smaller value either 500V or $\sqrt{P \cdot R}$			P : rating power R : resistance
Withstanding Voltage	2000VAC			Terminal and flange, 60 seconds, 1mA
Load Life	+/- 1.0 %			25 deg C, 90 min. ON, 30 min. OFF, 1000 hours.
Humidity	+/- 1.0 %			40C, 90-95%RH, DC 0.1W, 1000 hours.
Temp. Cycle	+/- 0.25 %			-55 deg C,30 min.,+155 deg C,30 min., 5cycles
Soldering Heat	+/- 0.1 %			350+/-5 deg C, 3seconds,
Solder ability	Over 95% of surface			230+/-5 deg C, 3seconds.
Insulation Resistance	Over 1,000 Meg ohm			Between terminals and flange.
Vibration	+/- 0.25 %			IEC60068-2-6, see note 4
Weight	2.1 grams			-

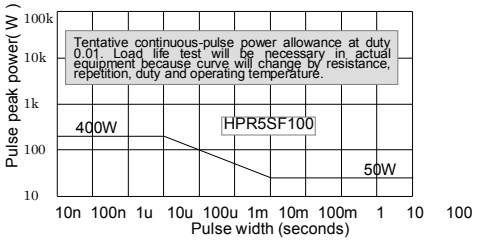
Power Derating



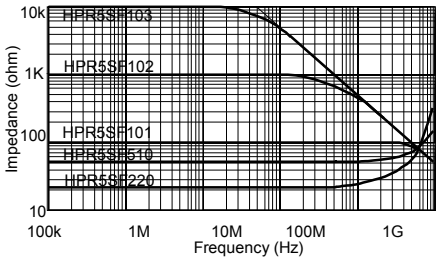
Flange Temperature Rise (deg C)



Pulse Energy Durability



Frequency Characteristics



Ordering information

Model	Tolerance	Resistance Value	Packaging
HPR5S	F	100	S
HPR3S	J(5%)	R022-513	S (Tube)
	F(1%)		

Note:

(1)Insulation material is unnecessary between flange and heat-sink, 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) TCR of low resistance will be increased as 300ppm/0.02ohm, 200ppm/0.05ohm, 140ppm/0.1ohm and 80ppm/0.2ohm typically.
Testing point is at 5.27mm from bottom of molding of terminals.
(4) Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s^2, 90minutes. direction x-y z, Amplitude
0.75mm will be applied under break point Frequency (about 60Hz) and 100m/ s^2 over break point.
(5) When mounting resistor on heat-sink by 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.
(6) Standard packaging is anti-static PE stick, which contains 50pcs /stick.

This specification is subject to change without notice. Please contact below for the technical support and latest specifications: