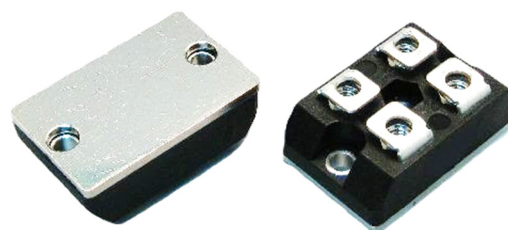


SOT227 250-300W HIGH POWER RESISTORS

RPG250/RPG300M

Features

- 250 W(R=2), 300 W(R=1), SOT227 package
- RoHS2 Compliant
- Pb-free
- 155°C maximum operating temperature
- Heat Resistance 0.32 °C/W



Applications

- Power Supply Units
- Motor-Driven Equipment
- Inverter Circuit
- Electronic Load Device
- UPS
- Testing/Measuring Equipment
- Snubber
- Gate Resistor
- Bleeder
- Damping Resistor

Ordering Information

Model	Configurations	TCR*	Resistance	Tolerance	Packaging
RPG300	X	A	10 ohm (*)	F	Z01

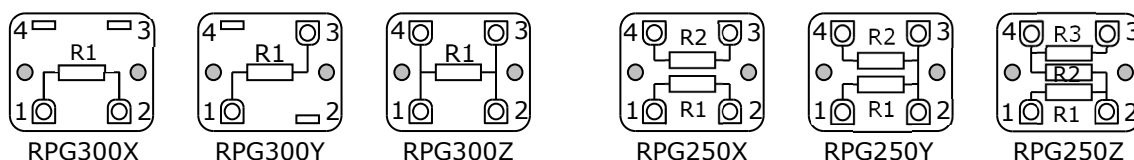
Model	Configurations	TCR (ppm/°C)	Symbol	Range (Ohms)	Tol. (%)	Symbol	Packaging	Symbol
RPG250	X	100	A	1~1k	5	J	PVC Stick	Z03
RPG300	Y	150	P	1.1k~1M			20pcs/stick	
	Z							

Resistance value (*) is available following modified E24, +E24.

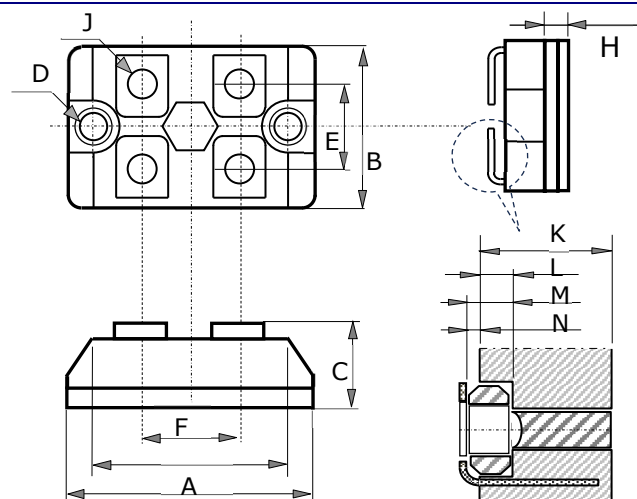
1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.5	2.7	3.0	3.3
3.6	3.9	4.0	4.3	4.7	5.0	5.1	5.6	6.2	6.8	7.5	8.0	8.2	9.1

*TCR and tolerance are determined by the resistance value.

Configurations



Dimensional Specifications (mm)



	Dimensions (mm)	+/- mm
A	38.0	+/-0.2
B	25.0	+/-0.2
C	15.0	+/-0.5
D	2-φ4.2	+/-0.1
E	13.0	+/-0.3
F	15.0	+/-0.4
G	30.0	+/-0.1
H	6.0	+/-0.2
J	4-M4	-
K	10.0	-
L	2.5	-
M	5.5	-
N	0.8	-

Specifications

Parameter	RPG250	RPG300	Test Conditions
Rated Power	250 W	300 W	-55°C to +25°C at flange Rated power per one resistor
Rated Power	5 W		Free air
Max. Operating Volt.	Smaller value either 700 V or $\sqrt{P \cdot R}$		Maximum input current: 100 A
Operation Temperature Range	-55 °C~+155 °C		

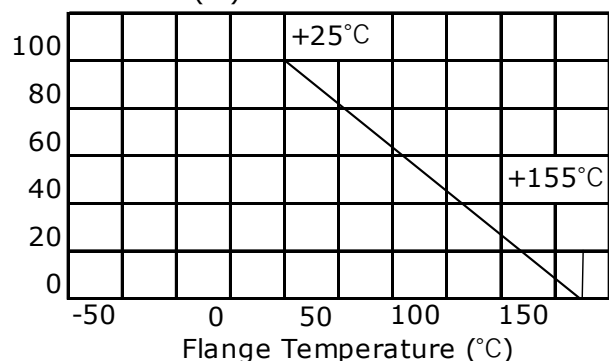
Note: In some of high ohmic and low ohmic cases, the rated power cannot be input due to the limitation of the maximum operation voltage or current value. Please use under 700V in the case over 1.5k Ohms. Please use below 100 A in the case under 0.03 Ohms.

Reliability

Parameter	Values / Specifications	Test Conditions
Heat Resistance	0.32 °C/W	Between resistive material and flange *Typical value
Capacitance	13.1 pF	Between terminal and flange *Typical value
Inductance	13.7 nH	Between terminals *Typical value
Insulation Resistance	$\geq 1,000$ Mohm	Between terminal and flange
Insulation Voltage	$\geq 2,500$ VAC	Between terminal and flange, 1min.
Weight	~35 g	-
Temp. Cycle	+/- (1.00 % + 0.05ohm)	RPG250 -55 °C 30 minutes, +155 °C 30 minutes, 20 cycles RPG250 -55 °C 30 minutes, +120 °C 30 minutes, 20 cycles
Load Life	+/- (1.00 % + 0.05ohm)	+25 °C, 90 min energization / 30 min de-energization cycle, 0.1 W, total 1,000 h
Humidity	+/- (1.00 % + 0.05ohm)	+85 °C, 85 %RH, 0.1 W, 1,000 hours
Vibration	+/- (0.25 % + 0.05ohm)	Vibration: 10~54 Hz, 0.75 mm amplitude, X/Y/Z directions, 20 min, 10 cycles

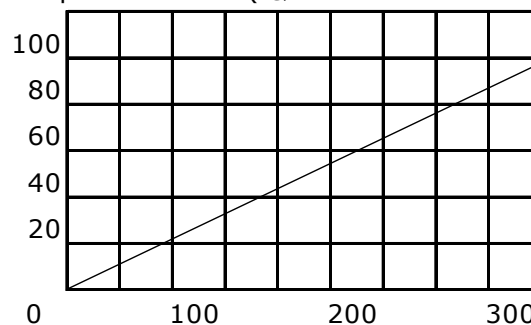
Derating

Rated Power (%)



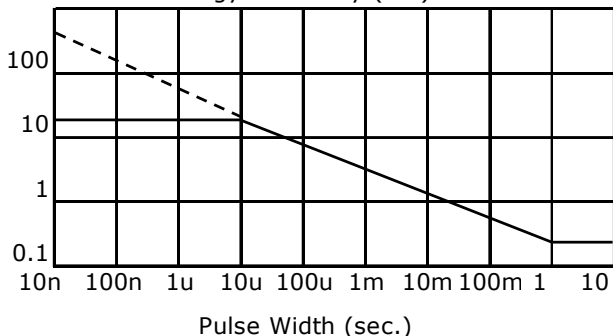
Temperature Rise

Temperature Rise (°C)

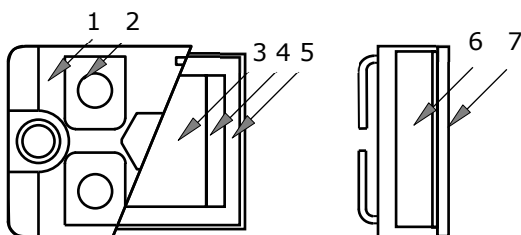


Pulse Energy Durability

1000 Pulse Energy Durability (kW)



Structure and Material



No.	Part	Material
1.	Resin Case	Potting Resin-Heat-resistant, flame-retardant resin
2.	Terminal	Cu-Sn plating Nickel Undercoat
3.	Resistive material	Thick-film: RuO
4.	Electrode	Thick-film: Ag-Pd
5.	Substrate	96% Alumina
6.	Resin filling	Epoxy resin-Black
7.	Flange	Cu-Ni plating

Note:

- (1) The resistance value and the tolerance are selectable not only from E24 as customization. Please contact to our factory for detail.
- (2) Flange is insulated from the internal resistive elements.
- (3) Recommended screw torque is 1.0 Nm
- (4) RPM300 - Tentative continuous-pulse power allowance at duty 0.01.

Instruction for Use

- (1) If the resistor is not mounted on a heatsink, please operate it at 5 W or less in ambient room temperature.
- (2) For effective heat conduction, please apply appropriate thermal interface materials such as grease or sheets.
- (3) This product is not designed for use in the special environments listed below.
 - Direct sunlight, outdoor exposure, or dusty environments
 - Areas with corrosive gases such as sea breeze, Cl₂, NO₂, NH₃, H₂S, or SO₂
 - Environments with strong electrostatic discharge or electromagnetic interference
 - Installation near heat-generating components
 - Mounting methods where the product is isolated from the heat-dissipation system and encapsulated or coated with resin
 - Environments with continuous condensation
- (4) Please handle the product with care, as it may be damaged if subjected to impacts such as dropping.
- (5) This product is not designed for radiation resistant operation or for use in vacuum environments.
- (6) Please verify the product's performance and reliability when it is mounted in the actual equipment. When transient loads such as pulses are applied, be sure to confirm performance and reliability.
- (7) Any failure caused by operating the product beyond the conditions stated in the datasheet is excluded from our warranty.