

SOT227 600W CHASSIS MOUNT POWER RESISTORS

RPX600L

Features

- 600 Watts at +80°C case temperature.
- 8KVAC insulation voltage.
- Compact package with a 10 mm profile.
- UL94V-0 certified resin case.
- Environmentally compliant product

Application

- Power electronics
- Industrial equipment, Power supplies
- High voltage pulse generating circuit
- High voltage pulse power source
- Divider resistor
- Filtering resistor
- Breeder resistor



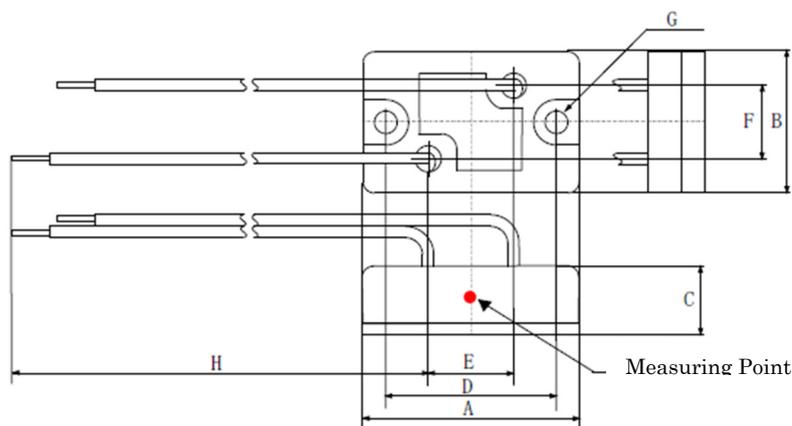
Ordering information

Type	TCR		Resistance Value	Tolerance		Packaging	
RPX600L	C		100 ohm	J		Z05	
	Value	Mark	Value range	Value	Mark	Method	Mark
	50ppm/°C	C	10Ω~1kΩ	10Ω~1kΩ: 5%	J	20pcs/Tray	Z05

Available resistance values are as following E24. Other valued are optionally available.

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

Dimensions

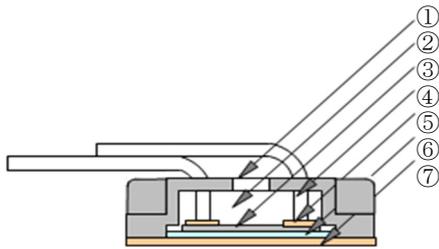


Location (mm)	A	B	C	D	E	F	G	H*
	38.0	25.0	10.0	30.0	15.0	13.0	φ4.3	120
Tolerance (+/-mm)	+/-0.5	+/-0.5	+/-0.5	+/-0.2	+/-0.5	+/-0.5	+/-0.1	+/-10.0

※Terminal lengths(H) are measured from the joint between the terminal and the case. (Available at the maximum 250mm)

Specifications and Performance

Item	Specification	Conditions
Rated Power	600W	Case temperature: -55°C~+80°C. Follow the derating curve when over +80°C
	5W	Free air
Resistance Range	10ohm ~ 1kohm	E24 and 2.5, 5.0
Limiting Element Voltage	1,000V or $E=\sqrt{P \cdot R}$	Either of smaller value. "P": Rated power, "R": Resistance value.
TCR	+/-50ppm/°C (C)	-55°C~+155°C
Tolerance	+/-5% (J)	Optional: +/-1% (F *For part number)
Operation Temperature Range	-55°C ~ +155°C	----
Case Temperature Range	-55°C ~ +80°C	Temperature of the case.
Insulation Voltage	8,000 VAC	60sec. - 0.5mA – 50Hz
Insulation Resistance	Over 1,000Mohm	Between inductors and flange which are inside electrical wires.
Partial discharge inception voltage	6000V - 51kHz	Typical value
Capacitance	30 pF	Typical value
Inductance	140 nH	Typical value
Pulse Dielectric	See page. 3	----
Heat Resistance	0.10 °C/W	Between resistance and flange
Storage Temperature Range	-55°C ~ below +70°C	A usual warehouse environment is preferable.
Preservation Maximum Humidity	75% relative humidity	A usual warehouse environment is preferable.
Mounting Torque, Screws	1.0Nm +/- 0.1Nm	M4 screws
Weight	Approx. 31.5 g	-

Construction


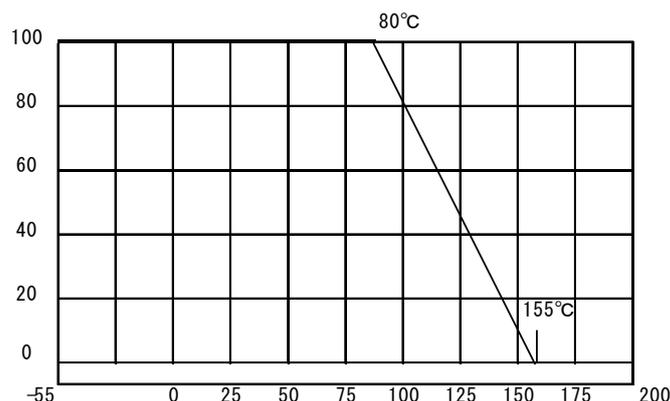
No.	Part	Material
①	Case	Phenol Resin UL94 V-0
②	Filling	Silicon Resin UL94 V-0
③	Resistive Film	Resistance Thin Film
④	Insulated Wire	Silicone Rubber UL94 V-0
⑤	Plate	Copper Electrode
⑥	Substrate	Aluminum Nitride Substrate
⑦	Flange	Copperplate, Nickel Plating

Reliability

Item	Specification	Note
Load Life Rated	+/- 1.00%	25°C Rated power for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Temperature Cycle	+/- 1.00%	(-55°C for 30min. +155°C for 30min.)x5 cycles.
Load Life	+/- 0.40%	See page. 3. For 1000 hours.
Moisture Tolerance	+/- 0.25%	85°C 85% RH, DC 0.1W, 1,000 hours.
Short-time Overload	+/- 0.25%	2.5 times as rated power, for 5 seconds.
Vibration Resistance	+/- 0.25%	Following JIS C 60068-2-6. Vibrating range: 10H z -54Hz, Amplitude 0.75mm or 100m/sec. for 10 cycles 90min. x-y-z direction

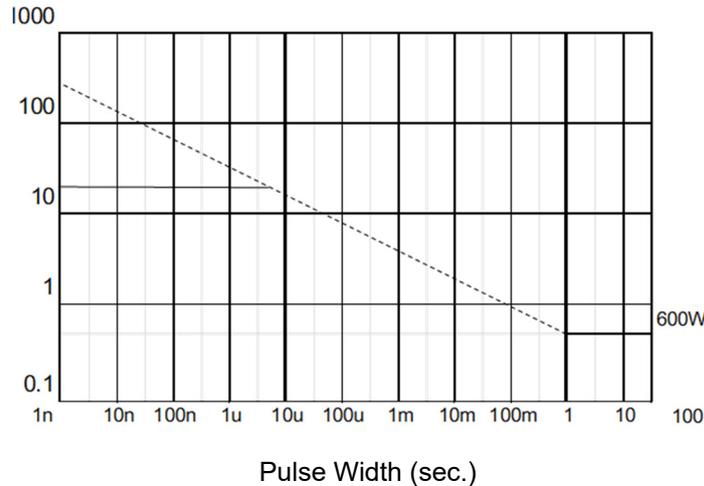
Derating Curve

Percentage to the Rated Power (%)



Pulse Energy Durability

Pulse Durability (kW)



Precautions for Use

- ① Using within one year after delivery is recommended based on the room within Storage temperature range and Preservation maximum relative humidity.
- ② Using within one year after unsealing.
- ③ Please attach this resistor to a proper heatsink and use them in free-air or water-cooling condition. When the resistors are not attached to any heatsink, please use them at below 5W with room temperature. When the resistors are attached to heatsinks, consider the heat conducting ratio on contacting surfaces so the temperature on surfaces of the heatsink should be maintained, and moreover using heat conducting grease is recommended. This resistor does not need insulating sheet to use because the resistor itself and the metal flange at the bottom are insulated each other.
- ④ All the causes of breaking this resistor are the resistor burn-out and open circuit by overload, insufficient cooling, and over surge current.
 - As the product performance possibly be affected, please avoid using this resistor under the following conditions;
 - Direct sunlight, outdoor exposure, in the dusty air.
 - Sea breeze, the area filled with corrosive gas, such as Cl₂, NO₂, NH₃, H₂S, and SO₂.
 - In the environment where has strong static electricity/electromagnetic wave.
 - In the location close by heat generating components.
 - Under the mounting condition that the resistor's flange is away from the cooling system such as heatsinks, sealed with resins, and coding.
 - Dewing all the time.
- ⑤ Please be careful when handling the resistor because impacts of dropping or else may break the item.
- ⑥ This resistor is not designed as for the radiation-resistant nor the vacuum environment.
- ⑦ Please implement the test and evaluation for this resistor on condition being mounted on the electronics.
- ⑧ When a transitional load such as a pulse is applied, please be sure to implement the test and evaluation on condition being mounted on the electronics. Additionally, please be sure to use this resistor applying lower power than its rated power because when the larger loads than its rated is applied on condition that steady loads are applied, the product performance and/or reliability will possibly be declined.
- ⑨ There is no guarantee for the failure caused by the deviated use from this notice.