Ultra-high voltage pulse loading Ceramic Composition Resistor Modules

HPC inorganic ceramic composition resistors are high peak power and high energy absorption resistors.

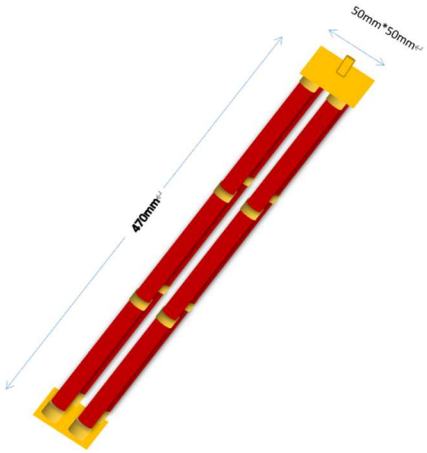
The well mixed conductive particles and ceramics sintered with semiconductor hybrid process technology and powder metallurgy technology into a high stable physical structure with high strength comparable to ceramics, high energy density, high withstanding voltage and current.

The tested product has a pulse energy resistance of **270J/cm³** (Effective size) and total **30kJ** single pulse withstand energy.

The resistors the product shows perfect non-inductive performance of nH level in the ultra-high frequency circumstances.

The extremely high pulse withstand voltage of the module is up to **24,000V** in oil and surge pulse withstand voltage is up to **170kV**.

The modules is compliant to RoHS directive 2011/65/EU and REACH (EC No. 1907/2006)) (last updated: 27/06/2018).



1. PART NUMBER

Part number of the module is identified by the series name, power rating, tolerance, temperature coefficient, packing type and resistance value.

Example：

HPC	600	K	0	B	601
Series	**Power**	**Tolerance**	**TCR**	**Packing**	**Resistance**

(1)Series name**:** HPC SERIES CERAMIC RESISTORS

(2)Power Rating**:** **600**=600W;

(3) Tolerance: K=±10%; M=±20%;

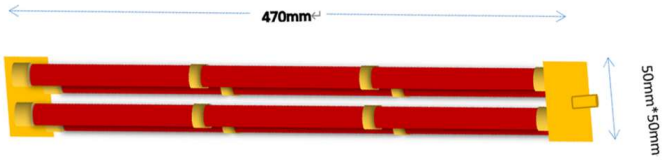
(4) T.C.R.: “0”= -600~-2200ppm/℃

(5) Packaging Type: B = Bulk/Box

(6) Resistance Value: 601=600Ω;

2. MARKING: Customer marking is available upon request.

3. ELECTRICAL CHARACTERISTICS

THUNDER type	HPC400K0T601	盛雷城型号
Rated dissipation in oil P_{100}	600W	P_{100} 100°C 以下油中额定功率
Max pulse voltage withstand U_{max}	1.2μ/50μ 170kV	U_{max} 最大脉冲负荷电压
Resistance range	100Ω to 30kΩ	标准阻值范围
Tolerance	K=±10%; M=±20%;	电阻精度范围
Temperature coefficient	-600~-2200ppm/°C	温度系数范围
Max single pulse energy	30kJ	单次承受最大脉冲能量
Outlines		外观

* Unless otherwise specified, all values are tested at the following condition:
Temperature: 21℃ to 25℃; Relative humidity: 45% to 70%;

* Rated Continuous Working Voltage (RCWV)= $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$

* Resistance out of range is available upon request.

4. ENVIRONMENTAL CHARACTERISTICS

(1) Temperature Coefficient Test

IEC 60115-1, 4.8: Test of resistors at room temperature and 60°C or 100°C on request above room temperature. Then measure the resistance. The Temperature Coefficient is calculated by the following equation and its value should be within the range requested.

$$\text{Resistor Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6$$

R = Resistance value under the testing temperature
R_0 = Resistance value at the room temperature
t = the 2nd testing temperature
t_0 = Room temperature

(2) Short Time Overload Test

IEC60115-1 4.13: At 10 times rated power voltage for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ±(2%+0.05 Ω) as compared with the value before the test.

(3) Climatic sequence

IEC 60115-1, 4.19: -55°C to Room Temp. to +155°C to Room Temp. (5 cycles). The change of the resistance value shall be within±(5.0%+0.05 Ω) as compared with the value before the test.

Disclaimer

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