APPROVAL SHEET

HPC SERIES

Ceramic Composition Resistors

HPC17K0T100

PRODUCE	CHECK AND APPROVE	ACCEPTED BY
EM	CE	HONORABLE CUSTOMER
Edison Chen	Charles Chen	
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1. PRODUCT

Ceramic Composition Resistors

FEATURES

Advanced high voltage pulse ceramic technology

Perfect for circuitry with surges, high peak power or high energy

Suitable for noise suppression of engine ignition system

Offer enhanced performance in high voltage power supplies

Offer enhanced R-C snubber circuits and inrush limiters performance

Reliable in pulse/transient applications

Very low noise and voltage coefficient

Low distributed inductance up to nH

Flame proof

APPLICATIONS

·High power supply with high reliability

·High voltage circuits of electron microscope and X-ray equipment

· Automotive power resistors in battery management system

Compliant to RoHS directive 2011/65/EU

Compliant to REACH (EC No. 1907/2006)) (last updated: 27/06/2018)

2. PART NUMBER

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

For example: HPC17K0T100

HPC	17	K	0	T	100
Series	Power	Tolerance	TCR	Packing	Resistance

(1)Series name: HPC SERIES CERAMIC RESISTORS

(2)Power Rating: 17=2W;

(3) Tolerance: J=±5%; K=±10%; M=±20%;

(4) T.C.R.: "0"=-600±1300ppm/℃; typical range is around -800ppm/℃

(5) Packaging Type: B=Blister/Box

(6) Resistance Value: 100=10Ω;

3. MARKING:

The standard color code per IEC EN 60062:2005 is as follows:

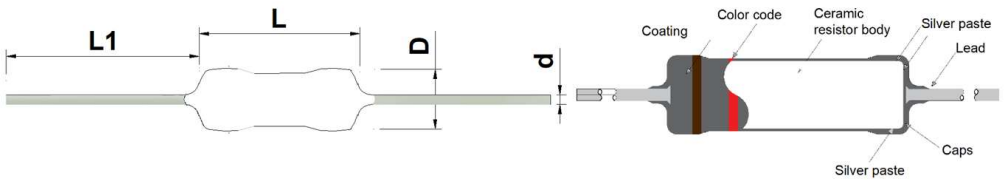
M(±20%) no marking at all.

Digital marking including series name, resistance, tolerance is available upon request

Customer's marking is available upon request.

COLOR	1st	2nd	Multiple	tolerance
black	0	0	1	
brown	1	1	10	
red	2	2	10^2	G(±2.0%)
orange	3	3	10^3	
yellow	4	4	10^4	
green	5	5	10^5	
blue	6	6	10^6	
purple	7	7		
gray	8	8		
white	9	9		
golden			10^{-1}	J(±5.0%)
silver			10^{-2}	K(±10%)

4. ELECTRICAL CHARACTERISTICS

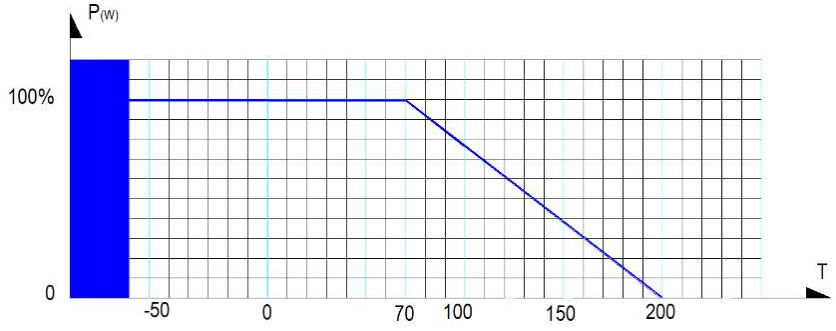
THUNDER type	HPC17K0T100		盛雷城型号
Cross to Ohmite's	OY2		对应 Ohmite的 型号
Rated dissipation P_{70}	2W	P_{70}	70℃ 以下额定功率
Max pulse overload V	20,000	V	最大可承受脉冲电压
Tolerance	K=±10%;		电阻精度范围
Temperature coefficient	-600~1300ppm/°C		温度系数范围
Insulation voltage	>700V		绝缘耐压
Operating Temperature range	-55°C to 200°C		工作环境温度范围
Dimension ±1(mm)	L=17.5, D=6.5	±1(mm)	外形尺寸
Dimension ±0.1(mm)	d=0.8	±0.1(mm)	外形尺寸
Outlines			

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

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

5. DERATING CURVE

For resistors working at an ambiance temperature of 70℃ or above, the power shall be derated in accordance with the curve.



6. ENVIRONMENTAL CHARACTERISTICS

(1) Insulation Resistance

IEC 60115-1, 4.6: in V-block for 60 seconds, the test resistance should be high than 10,000 M Ohm.

(2) Dielectric Withstanding Voltage

IEC 60115-1 4.7: Place resistors in V-block for 60 Seconds, no breakdown or flashover.

(3) 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.

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

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

(4) Short Time Overload Test

IEC60115-1 4.13: At 2.5 times rated voltage or 2 times the maximum working voltage whichever is lower for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ±(0.5%+0.05 Ω) as compared with the value before the test.

(5) Resistance to soldering heat:

IEC 60115-1, 4.18: 260±3°C for 10±1 Seconds, immersed to a point 3±0.5mm from the body. The change of the resistance value should be within ±(0.5%+0.05 Ω) as compared with the value before the test.

(6) 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±(1.0%+0.05 Ω) as compared with the value before the test.

(7) Damp Heat Steady State

IEC 60115-1, 4.24: 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within ±(2%+0.05 Ω) for normal tolerance as compared with the value before the test.

(8) Load Life Test

IEC 60115-1, 4.25: 70±2°C at RCWV or the maximum working voltage whichever is lower for 1,000+48/-0 Hr. (1.5Hr. on, 0.5Hr. off). The resistors shall be arranged not much effected mutually by the temperature of others and the excessive ventilation shall not be performed. The change of the resistance value should be within ±(5+0.05 Ω) as compared with the value before the test.

(9) Accidental Overload Test

IEC 60115-1, 4.26: 4 times RCWV for 1 Minute. No evidence of flaming or arcing

(10) Resistance to Solvent

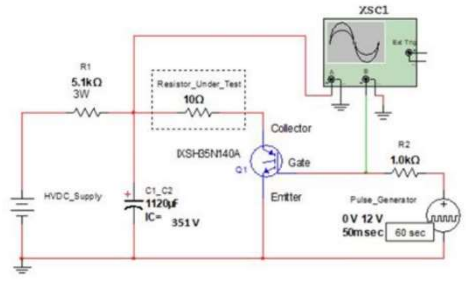
IEC 60115-1, 4.30: IPA for 5±0.5 Min. with ultrasonic. No deterioration of coating and color code occurred.

(11) High voltage high pulse overload

Apply 10 pulses with 10 times rated voltage to the resistor, the pulses parameter is 10μs/700μs. The change of the resistance shall be within ±(2.0%+0.05 Ω) for normal tolerance as compared with the value before the load.

(12)High energy pulse overload

Apply 100 pulses about 70J energy with the device shown in the right figure. The change of the resistance shall be within ±(5.0%+0.05Ω) for normal tolerance as compared with the value before the load. The typical value is 0.77%.



Disclaimer

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