

The HPC series represents a breakthrough in functional design, thermal management and end-user benefits. Borrowing from long-proven techniques used in power semiconductors, the HPC series provides up to eight times more useful power than SMD power resistors currently available.

The HPC series, through superior characterization, is intended to remove the mystery of managing board level power by combining established techniques in new ways. The result is superior technology in design options, in a cost effective package.



- Features:
- Up to 12W with no external heat sinks
  - Compatible with conventional pick and place
  - Only 0.5 x 0.5 PCB footprint
  - Non-inductive resistive element
  - Anodized heat sink top provides 800V voltage withstanding
  - Up to 50W for short duration
  - Stackpole patent no. US 7,286,358 B2
  - Available in 1% and 5% tolerance
  - RoHS compliant / lead-free

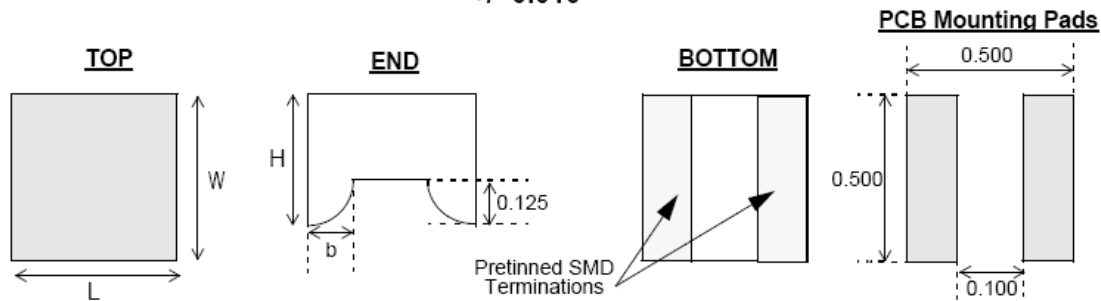
Electrical Specifications								
Type / Code	Power Rating (Watts) @ 40°C w/400 LFM air flow	Power Rating (Watts) @ 40°C no air flow	Maximum Working Voltage	Maximum Overload Voltage	Dielectric Strength	Inductance	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance
HPC 12	12W	5W	200V	400V	1,500V	<2nH	±150 ppm/°C	1%, 5% 0.025 - 250K

Please refer to the High Power Resistor Application Note for more information on designing and implementing high power resistor types.



High Power Resistors

**Dimensions**  
+/- 0.010



Mechanical Specifications					
Type / Code	L Body Length	W Body Width	H Body Height	b Bottom Termination	Units
HPC 12	0.48 12.18	0.5 12.69	0.4 10.15	0.11 2.79	inches mm

**How to Order**

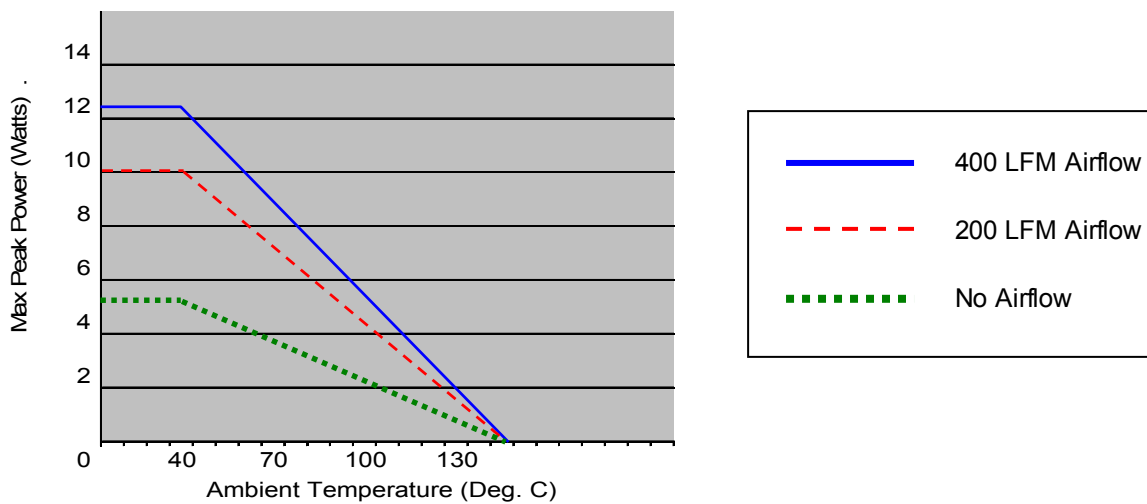
SEI Type	Code	Nominal Resistance	Tolerance	Packaging
<b>HPC</b>	<b>12</b>	<b>1K</b>	<b>5%</b>	<b>R</b>

Type	Description	Code	Tolerance	Types	Qty	Description	Code
HPC	High Power SMD	12	1%	HPC 12	200	Standard Reel	R
			5%		100	Bulk	B

Performance Characteristics		
Test	Test Conditions (JIS C 5202)	Test Results
Short Time Overload	2.5x rated voltage for 5 seconds	$\pm(2\% + 0.1\Omega)$
Dielectric Withstanding Voltage	100VAC, 1 minute	$\pm(1\% + 0.05\Omega)$
Resistance to Soldering Heat	260°C $\pm 5^\circ\text{C}$ for 10 sec; $\pm 0.5$ sec (Solder Bath)	$\pm(1\% + 0.05\Omega)$
Solderability	235°C $\pm 5^\circ\text{C}$ for 2 sec.; $\pm 0.5$ sec (Colophonium flux)	95% coverage, minimum
Temperature Cycle	-65°C: 30 min.; 25°C: 2 to 3 min. 150°C: 30 min.; 25°C: 2 to 3 min. (5 cycles)	$\pm(1\% + 0.05\Omega)$ Jumper ( $<0.05\Omega$ )
Endurance (Damp load)	40°C $\pm 2^\circ\text{C}$ , 90% to RH, rated load 90 min. ON, 30 min. OFF for 1,000 hrs. -0 hrs. / +48 hrs.	$\pm(3\% + 0.1\Omega)$ Jumper ( $<0.05\Omega$ )
Endurance (Rated load)	70°C $\pm 2^\circ\text{C}$ , 90% to RH, rated load 90 min. ON, 30 min OFF for 1,000 hrs. -0 hrs. / +48 hrs.	$\pm(3\% + 0.1\Omega)$ Jumper ( $<0.05\Omega$ )
Voltage Coefficient	1/10 rated voltage for 3 sec. max. then rated voltage for 3 sec. max.	$\pm 100$ (ppm/V)
Robustness of Termination	Bend of 3mm for $5 \pm 1$ sec.	$\pm(1\% + 0.05\Omega)$

### HPC 12 Power Derating Curve



### HPC 12 Power vs. Duration

