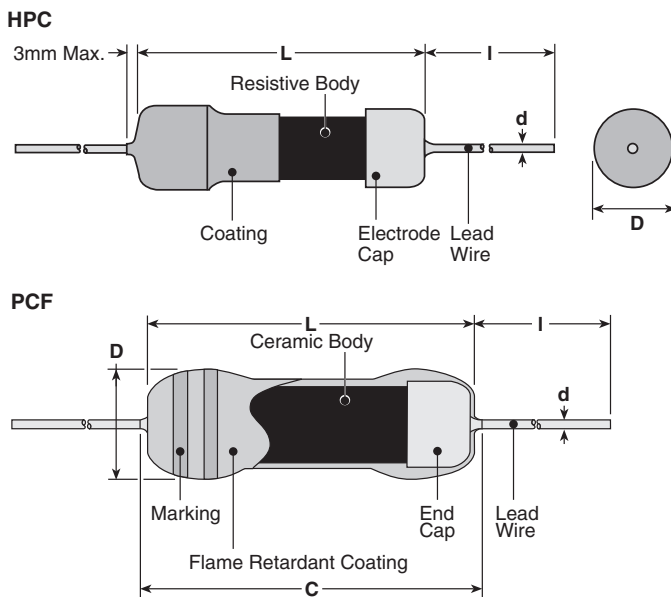


features

- PCF series: Coated with UL94V0 flameproof material
- Suitable for automatic machine insertion
- Able to replace carbon composition resistors in most applications
- Marking: HFC size: Reddish brown body color with alpha-numeric marking, PCF size: Light green body color with color-coded bands
- Products with lead-free terminations meet EU RoHS requirements

dimensions and construction



Type	Dimensions inches (mm)				
	L	C (max.)	D	d (nom.)	l
HPC1/2	.433±.039 (11.0±2.0)	—	.138±.039 (3.5±0.1)	.031 (0.8)	1.50±.118 (38.0±3.0)
HPC1	0.630±.039 (16.0±2.0)	—	.177±.039 (4.5±1.0)		
HPC2	.827±.039 (21.0±2.0)	—	.197±.039 (5.0±1.0)		
HPC3	1.02±.039 (26.0±2.0)	—	.236±.039 (6.0±1.0)		
HPC4	1.50±.039 (38.0±2.0)	—	.276±.039 (7.0±1.0)		
HPC5	1.73±.039 (44.0±2.0)	—	.295±.039 (7.5±1.0)	.039 (1.0)	1.18±.118 (30.0±3.0)
PCF1/2	.354±.039 (9.0±1.0)	.437 (11.1)	.138±.02 (3.5±0.5)	.028 (0.7)	
PCF1	0.65±.039 (16.5±1.0)	.748 (19.0)	.217±.039 (5.5±1.0)	.031 (0.8)	
PCF2	.748±.039 (19.0±1.0)	.886 (22.5)	.276±.039 (7.0±1.0)		

ordering information

Part #	PCF	1/2	C	T631	R	102	K
Type	HPC PCF	Power Rating 1/2: 0.5W 1: 1W 2: 2W 3: 3W 4: 4W 5: 5W	Termination Material C: SnCu	Taping HPC1/2: T52 HPC1: T631 HPC2, HPC3, HPC4, HPC5: Nil: Bulk PCF1/2: T52 PCF1, PCF2: T631	Packaging R: Reel A: Ammo (HPC1/2 only)	Nominal Resistance 2 significant figures + 1 multiplier 3 significant figures + 1 multiplier	Tolerance K: ±10% M: ±20%

For further information on packaging, please refer to Appendix C.

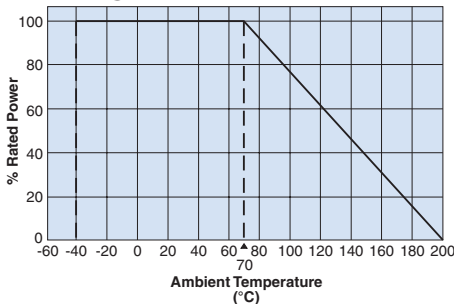
applications and ratings

Part Designation	Power Rating @ 70°C	Minimum Dielectric Withstanding Voltage	Resistance Range E-12 ($\pm 10\%$) E-6 ($\pm 20\%$)	Resistance Tolerance	T.C.R. (ppm/°C)	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Absolute Maximum Pulse Voltage*	Operating Temperature Range
HPC1/2	0.5W	200V	10 Ω - 390K Ω (+10%)	K: $\pm 10\%$ M: $\pm 20\%$	-900 ± 300 : R < 100 Ω	200V	400V	8kV	-40°C to +200°C
HPC1	1.0W	300V				300V	600V	15kV	
HPC2	2.0W	400V	400V			800V	25kV		
HPC3	3.0W	450V	450V			900V	25kV		
HPC4	4.0W	500V	3.3 Ω - 330K Ω (+20%)		-1200 ± 300 : R \geq 100 Ω	500V	1000V	25kV	
HPC5	5.0W	550V				550V	1100V	25kV	
PCF1/2	0.5W	500V	4.7 Ω - 100K Ω		-900 ± 300 : R < 100 Ω	200V	400V	10kV	
PCF1	1.0W		3.3 Ω - 390K Ω			300V	600V	14kV	
PCF2	2.0W	700V		-1300 ± 300 : R < 100 Ω	400V	800V	20kV		

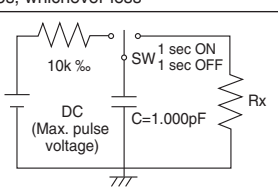
* Resistance to pulse: change shall be $\pm 5\%$ of the pre-test values. 1 sec. ON, 1 second OFF, 20,000 cycles. The voltage is applied with maximum pulse voltage.

environmental applications

Derating Curve



Performance Characteristics

Parameter	Requirement		Test Method	
	Limit	Typical		
Resistance	Within regulated to tolerance	—	Resistance	
			3.3 Ω -8.2 Ω	Measurement voltage
			10 Ω -82 Ω	0.3V
			100 Ω -390k Ω	1.0V
T.C.R.	HPC: -900 $\pm 300 \times 10^{-6}$ /K; R < 100 Ω -1200 $\pm 300 \times 10^{-6}$ /K; R \geq 100 Ω PCF: -900 ± 300 : R < 100 Ω -1300 ± 300 : R \geq 100 Ω	—	+25°C/-40°C and +25°C/+125°C	
Voltage Coefficient (Apply for over 1k Ω)	0-0.2%/V (HPC1/2, PCF) 0-0.1%/V (HPC1) 0-0.05%/V (HPC2,3,4,5)	—	Rated voltage and rated voltage x 10%	
Overload	2	0.4	Rated voltage x 2.5 or maximum overload voltage for 5s, whichever less	
Resistance to pulse	5	—	The resistor mounted to the test circuit as below. 1 sec. ON and 1 sec. OFF. 20,000 cycles. The voltage is applied with maximum pulse voltage. <div style="text-align: right;">  </div>	
Resistance to soldering heat	2	0.8	350°C ± 10 °C, 3.5s ± 0.5 s	
Rapid change of temperature	2	0.4	-40°C(30min.)/+85°C(30min.), 5 cycles	
Moisture resistance	5	0.6	40°C ± 2 °C, 90%-95%RH, 1000h, 1.5h ON/0, 5h OFF cycles	
Load life	5	0.4	HPC: 40°C ± 2 °C, 1000h, 1.5h ON/0, 5h OFF cycles PCF: 70°C ± 3 °C, 1000h, 1.5h ON/0, 5h OFF cycles	