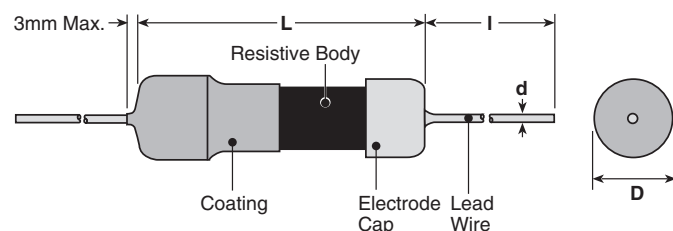


features

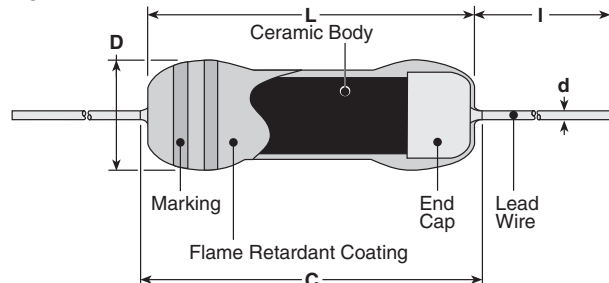
- Coated with UL94V0 flameproof material
- Suitable for automatic machine insertion
- Able to replace carbon composition resistors in most applications
- Marking: HFC size: Reddish brown body color with alpha-numeric marking, PCF size: Light green body color with color-coded bands
- Products with lead-free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

dimensions and construction

HPC



PCF



Type	Dimensions inches (mm)				
	L	C (max.)	D	d (nom.)	I
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	Termination Material	Taping	Packaging	Nominal Resistance	Tolerance
		1/2: 0.5W 1: 1W 2: 2W 3: 3W 4: 4W 5: 5W	C: SnCu	T631 T52	R: Reel	2 significant figures + 1 multiplier 3 significant figures + 1 multiplier	K: ±10% M: ±20%

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

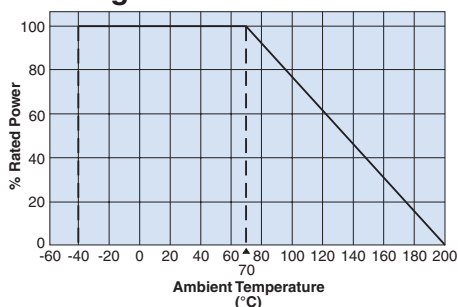
applications and ratings

Part Designation	Power Rating @ 70°C	Minimum Dielectric Withstanding Voltage	Resistance Range E-12 (±10%) E-6 (±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	10Ω - 390KΩ (+10%) 3.3Ω - 330KΩ (+20%)	K: ±10% M: ±20%	-900±300: R<100Ω -1200±300: R≥100Ω	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				500V	1000V	25kV	
HPC5	5.0W	550V				550V	1100V	25kV	
PCF1/2	0.5W	500V	4.7Ω - 100KΩ		-900±300: R<100Ω	200V	400V	10kV	
PCF1	1.0W		3.3Ω - 390KΩ		-1300±300: R<100Ω	300V	600V	14kV	
PCF2	2.0W				700V	400V	800V	20kV	

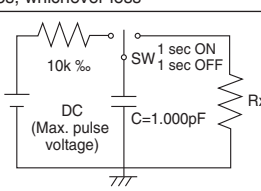
* Resistance to pulse: change shall be ±5% of the pre-test values. 1 sec. ON, 1 second OFF, 20,000 cycles. The voltage is applied with maximum pulse voltage.

environmental applications

Derating Curve



Performance Characteristics

Parameter	Requirement		Test Method	
	Limit	Typical		
Resistance	Within regulated to tolerance	—	Resistance	Measurement voltage
			3.3Ω~8.2Ω	0.3V
			10Ω~82Ω	1.0V
			100Ω~390kΩ	3.0V
T.C.R	HPC: -900±300×10 ⁻⁶ /K: R<100Ω -1200±300×10 ⁻⁶ /K:R≥100Ω PCF: -900±300:R<100Ω -1300±300:R>100Ω	—	+25°C/-40°C and +25°C/+125°C	
Voltage Coefficient (Apply for over 1kΩ)	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. 	
Resistance to soldering heat	2	0.8	350°C±10°C, 3.5s±0.5s	
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	