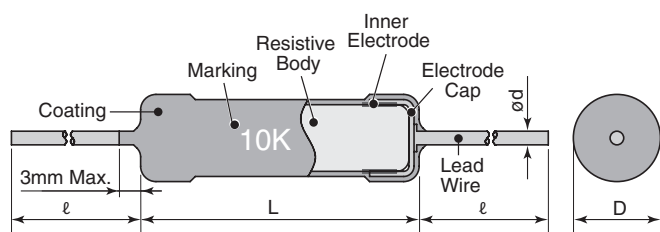


features

- KOA original bulk ceramic resistors
- Excellent in anti-pulse characteristics
- Higher reliability against disconnection compared to wirewound resistors and film resistors
- Marking: Reddish brown body color with alpha-numeric marking
- Products with lead-free terminations meet EU RoHS requirements
- Non-inductive resistors
- AEC-Q200 Qualified

dimensions and construction



Type	Dimensions inches (mm)				
	L	C (max.)	D	d (nom.)	I
HPC1/2	.433±.039 (11.0±2.0)	—	.138±.039 (3.5±1.0)	.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)	.039 (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)		

ordering information

Part #	HPC	1/2	C	T631	R	103	K
Type	HPC	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	1/2: T52 1: T631	A: Ammo R: Reel	2 significant figures + 1 multiplier	K: ±10% M: ±20%

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

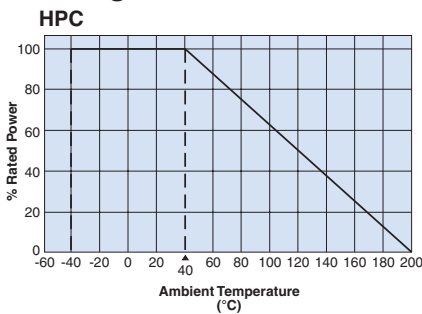
applications and ratings

Part Designation	Power Rating @ 40°C	Resistance Range (Ω)		T.C.R. (ppm/°C)	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Absolute Maximum Pulse Voltage*	Rated Ambient Temp.	Operating Temp. Range
HPC1/2	0.5W	10 - 390K	3.3 - 330K	-900±300: R<100Ω -1200±300: R≥100Ω	200V	400V	8kV	+40°C	-40°C to +200°C
HPC1	1.0W				300V	600V	15kV		
HPC2	2.0W				400V	800V	25kV		
HPC3	3.0W				450V	900V	25kV		
HPC4	4.0W				500V	1000V	25kV		
HPC5	5.0W				550V	1100V	25kV		

* Resistance to pulse: change shall be ±5% of the pre-test values. 1 sec. ON, 1 second OFF, 10,000 cycles. The voltage is applied with maximum pulse voltage.

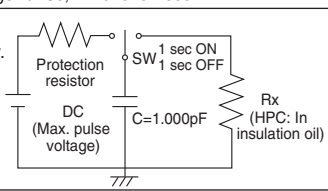
environmental applications

Derating Curve



For resistors operated at an ambient temperature of 40°C or above, a power rating shall be derated in accordance with the derating curve.

Performance Characteristics

Parameter	Requirement $\Delta R \pm (\% + 0.05\Omega)$		Test Method		
	Limit	Typical			
Resistance	Within regulated to tolerance	—	Resistance 3.3Ω~8.2Ω 10Ω~82Ω 100Ω~390kΩ	Measurement voltage 0.3V 1.0V 3.0V	25°C
T.C.R	-900±300×10 ⁻⁶ /K: R<100Ω -1200±300×10 ⁻⁶ /K: R≥100Ω	—	+25°C/-40°C and +25°C/+125°C		
Voltage Coefficient (Apply for over 1kΩ)	0~0.2%/V (HPC1/2) 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. 10,000 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, 1000 hours, 1.5h ON/0, 5h OFF cycles		
Load life	5%	0.4%	40°C±2°C, 1000h, 1.5h ON/0, 5h OFF cycles		
Resistance to Solvent	No abnormality in appearance. Marking shall be easily legible.	—	Dipping in IPA or Xylene for 3 minutes and leaving for 10 minutes after removing drops, then brushing 10 times.		
High Temperature Exposure	5%	1.7%	+200°C, 1000 hours		

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

KOA Speer:

[HPC1C4R7K](#) [HPC5C822K](#) [HPC1C224K](#) [HPC3C105K](#) [HPC5C101K](#) [HPC2C220K](#) [HPC2C150K](#) [HPC2C273K](#)
[HPC2C333K](#) [HPC2C563K](#) [HPC2C182K](#) [HPC2C274K](#) [HPC2C330K](#) [HPC2C560K](#) [HPC2C272K](#) [HPC2C332K](#)
[HPC5C222K](#) [HPC2C223K](#) [HPC1C153K](#) [HPC1C183K](#) [HPC1/2C102K](#) [HPC2C100K](#) [HPC2C121K](#) [HPC2C122K](#)
[HPC2C123K](#) [HPC2C151K](#) [HPC2C152K](#) [HPC2C153K](#) [HPC2C180K](#) [HPC2C181K](#) [HPC2C222K](#) [HPC2C271K](#)
[HPC2C331K](#) [HPC2C393K](#) [HPC2C470K](#) [HPC2C681K](#) [HPC2C682K](#) [HPC2C820K](#) [HPC2C821K](#) [HPC2C822K](#)
[HPC2C221K](#) [HPC1/2C471K](#) [HPC1/2L471K](#) [HPC2C101K](#) [HPC2C102K](#) [HPC2C103K](#) [HPC2C104K](#) [HPC2C105K](#)
[HPC2C154K](#) [HPC2C472K](#) [HPC3C100K](#) [HPC3C180K](#) [HPC3L100K](#) [HPC3L180K](#) [HPC5C102K](#) [HPC1C333K](#)
[HPC1CT631R220K](#) [HPC1C101K](#) [HPC1C220K](#) [HPC1C562K](#) [HPC1C821K](#) [HPC2C471K](#) [HPC2C680K](#)
[HPC1/2C103K](#) [HPC1/2C470K](#) [HPC1C103K](#) [HPC1C221K](#) [HPC2C183K](#) [HPC2C390K](#) [HPC2C391K](#) [HPC2C561K](#)
[HPC2C562K](#) [HPC3C270K](#) [HPC3C820K](#) [HPC5C181K](#) [HPC5C271K](#) [HPC5C560K](#) [HPC5C820K](#) [HPC1/2C100K](#)
[HPC1/2C101K](#) [HPC1/2C120K](#) [HPC1/2C121K](#) [HPC1/2C122K](#) [HPC1/2C123K](#) [HPC1/2C150K](#) [HPC1/2C151K](#)
[HPC1/2C152K](#) [HPC1/2C153K](#) [HPC1/2C180K](#) [HPC1/2C181K](#) [HPC1/2C182K](#) [HPC1/2C183K](#) [HPC1/2C220K](#)
[HPC1/2C221K](#) [HPC1/2C222K](#) [HPC1/2C223K](#) [HPC1/2C270K](#) [HPC1/2C271K](#) [HPC1/2C272K](#) [HPC1/2C273K](#)