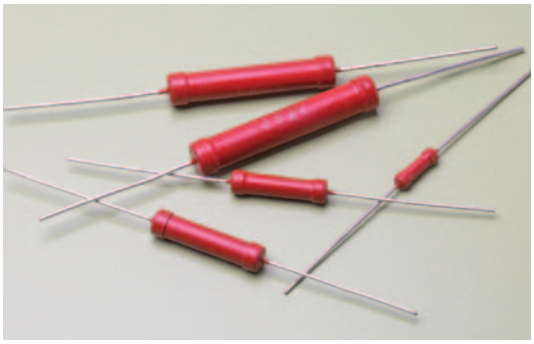
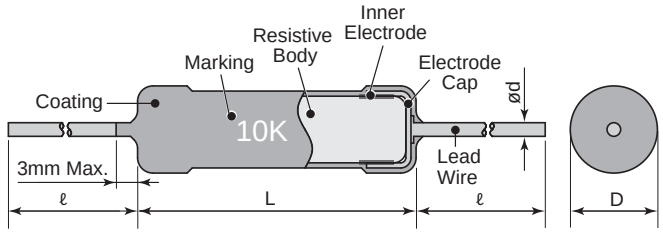
EU RoHS COMPLIANT



features

- KOA original bulk ceramic resistors
- Excellent in anti-pulse resistance, inrush current and active discharge characteristics
- Higher reliability against disconnection compared to wirewound resistors and film resistors
- Products meet EU RoHS requirements
- Non-inductive resistors
- AEC-Q200 Qualified

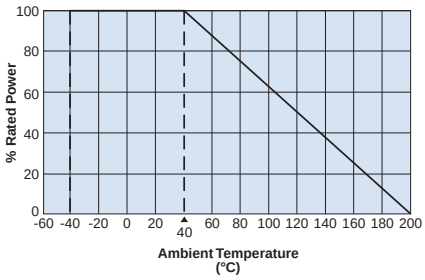
dimensions and construction



Type	Dimensions inches (mm) L	D	d (nom.)	l*
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	.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)	.039 (1.0)	
HPC5	1.73±.039 (44.0±2.0)	.295±.039 (7.5±1.0)		

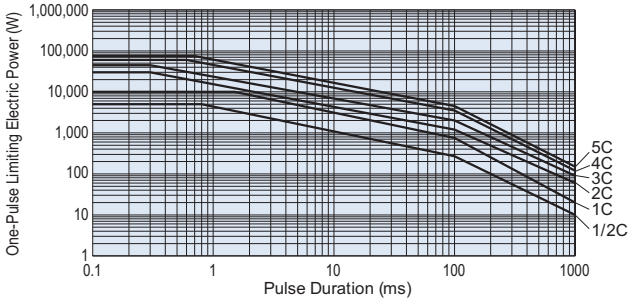
* Lead length changes depending on taping type

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.

One-Pulse Limiting Electric Power



Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

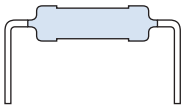
ordering information

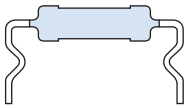
HPC	1	C	T631	R	103	K
Type	Power Rating	Termination Material	Taping	Packaging	Nominal Resistance	Tolerance
HPC	1/2: 0.5W 1: 1W 2: 2W 3: 3W 4: 4W 5: 5W	C: SnCu	See Table on next page	A: Ammo R: Reel Nil: Box	2 significant figures + 1 multiplier	K: ±10% M: ±20%

10/24/25

taping

Type	Axial Taping T52	Axial Taping T631
HPC1/2	◯	—
HPC1	—	◯





Contact us for lead forming details.

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

applications and ratings

Part Designation	Power Rating @ 40°C	Resistance Range (Ω) K: ±10% E-12	Resistance Range (Ω) M: ±20% E-6	T.C.R. (x10⁻⁶/K)	Maximum Working Voltage	Maximum Overload Voltage	Rated Ambient Temp.	Operating Temp. Range
HPC1/2	0.5W	10 - 390K	3.3 - 330K	-500 ~ -1300: 3.3Ω≤R<10Ω -600 ~ -1500: 10Ω≤R<100Ω -700 ~ -1800: 100Ω≤R<1kΩ -900 ~ -1900: 1kΩ≤R<100kΩ -900 ~ -2000: 100kΩ≤R<200kΩ -900 ~ -2200: 200kΩ≤R≤390kΩ	200V	400V	+40°C	-40°C to +200°C
HPC1	1.0W				300V	600V		
HPC2	2.0W				400V	800V		
HPC3	3.0W				450V	900V		
HPC4	4.0W				500V	1000V		
HPC5	5.0W				550V	1100V		

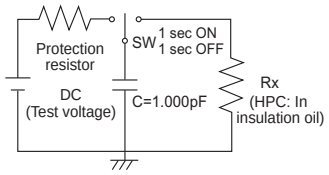
Rated voltage = $\sqrt{\text{Power Rating X Resistance Value}}$ or Max. working voltage, whichever is lower

environmental applications

Performance Characteristics

Parameter	Requirement Δ R ±(% + 0.05Ω) Limit	Requirement Δ R ±(% + 0.05Ω) Typical	Test Method
Resistance	Within regulated to tolerance	—	Resistance: 3.3Ω=<R<10Ω — Measurement voltage: 0.3V; 10Ω=<R<100Ω — 1.0V; 100Ω=<R=<390kΩ — 3.0V; 25°C
T.C.R	-500~-1300:3.3Ω≤R<10Ω -600~-1500:10Ω≤R<100Ω -700~-1800:100Ω≤R<1kΩ -900~-1900:1kΩ≤R<100kΩ -900~-2000:100kΩ≤R<200kΩ -900~-2200:200kΩ≤R≤390kΩ	—	+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 × 2.5 or Max. overload vol., whichever is lower, for 5s.
Resistance to pulse	Refer to the table on the right	—	The resistor mounted to the test circuit as below is applied with high voltage impulse 10,000 cycles.
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

Type	Test Voltage	Performance Requirements ˇ R ±(% + 0.05Ω)
HPC1/2	8kV:3.3Ω≤R<30kΩ	5
	8kV:30kΩ≤R<390kΩ	10
	5kV:30kΩ≤R<390kΩ	5
HPC1	15kV:3.3Ω≤R<30kΩ	5
	15kV:30kΩ≤R<390kΩ	10
	7kV:30kΩ≤R<390kΩ	5
HPC2	25kV:3.3Ω≤R<30kΩ	5
	25kV:30kΩ≤R<390kΩ	10
	15kV:30kΩ≤R<390kΩ	5
HPC3 HPC4 HPC5	25kV	5



leaded resistors