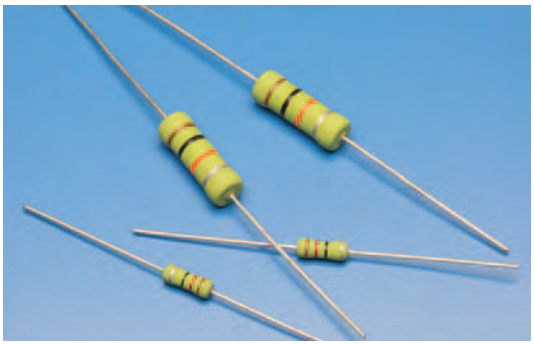
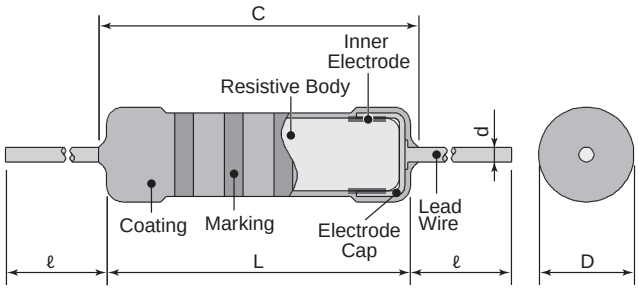


features

- KOA original bulk ceramic resistors
- Flame retardant coating (Equivalent of UL 94 V-0)
- Excellent in in-pulse and inrush current characteristics
- Non-inductive resistors
- Products meet EU RoHS requirements
- Higher reliability against disconnection compared to wirewound resistors and film resistors
- AEC-Q200 Tested

dimensions and construction



Type	Dimensions inches (mm) L	C (max.)	D	d (nom.)	l*
PCF1/2	.354±.039 (9.0±1.0)	.437 (11.1)	.138±.02 (3.5±0.5)	.028 (0.7)	1.18±.118 (30.0±3.0)
PCF1	0.65±.039 (16.5±1.0)	.748 (19.0)	.217±.039 (5.5±1.0)	.031 (0.8)	1.50±.118 (38.0±3.0)
PCF2	.748±.039 (19.0±1.0)	.886 (22.5)	.276±.039 (7.0±1.0)		

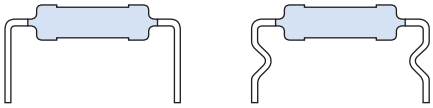
* Lead length changes depending on taping type

ordering information

PCF	1	C	T631	R	103	K
Type	Power Rating	Termination Material	Taping	Packaging	Nominal Resistance	Tolerance
PCF	1/2: 0.5W 1: 1W 2: 2W	C: SnCu	1/2: T52 1: T631 2: T631	R: Reel	2 significant figures + 1 multiplier	K: ±10% M: ±20%

taping

Type	Axial Taping T52	T631
PCF1/2	○	—
PCF1	—	○
PCF2	—	○



Contact us for lead forming details.

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

applications and ratings

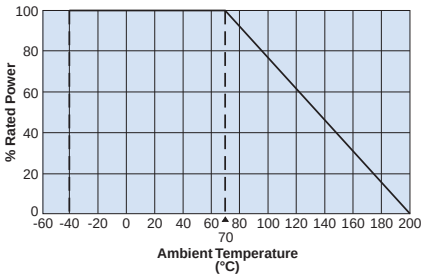
Part Designation	Power Rating @ 70°C	Resistance Range (Ω) K: ±10% E-12	M: ±20% E-6	T.C.R. (x10^{-6}/K)	Maximum Working Voltage	Maximum Overload Voltage	Dielectric Withstanding Voltage	Rated Ambient Temp.	Operating Temp. Range
PCF1/2	0.5W	4.7 - 100K	4.7 - 100K	-500 ~ -1300: 3.3Ω≤R<10Ω -600 ~ -1500: 10Ω≤R<100Ω -700 ~ -1800: 100Ω≤R<1kΩ -900 ~ -1900: 1kΩ≤R<100kΩ -900 ~ -2000: 100kΩ≤R<200kΩ -900 ~ -2200: 200kΩ≤R≤390kΩ	200V	400V	500V	+70°C	-40°C to +200°C
PCF1	1.0W	3.3 - 390K	3.3 - 330K		300V	600V			
PCF2	2.0W				400V	800V	700V		

Rated Voltage = $\sqrt{\text{Power Rating x Resistance Value}}$ or Maximum Working Voltage, whichever is lower.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

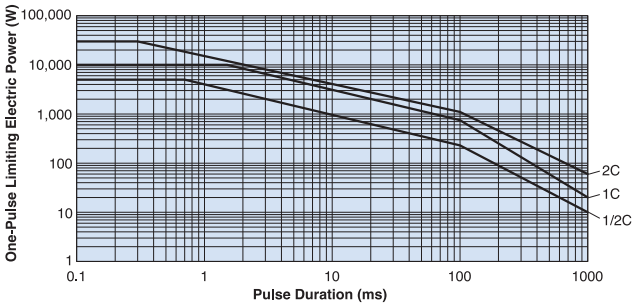
environmental applications

Derating Curve



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.

One-Pulse Limiting Electric Power

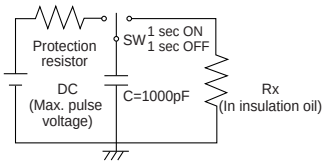


Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values,so be sure to check the products on actual equipment when you use them.

Performance Characteristics

Parameter	Requirement Δ R ±(% + 0.05Ω)		Test Method
	Limit	Typical	
Resistance	Within regulated to tolerance	—	Resistance / Measurement voltage: 3.3Ω=<R<10Ω — 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, +25°C/+75°C and +25°C/+125°C
Voltage Coefficient (Apply for over 1kΩ)	0~-0.2%/V	—	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	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 (30 min.)/+85°C (30 min.), 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%	70°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.

Type	Test Voltage	Performance Requirements Δ R ±(% + 0.05Ω)
PCF1/2	10kV:4.7Ω≤R<10kΩ	5
	10kV:10kΩ≤R<33kΩ	10
	10kV:33kΩ≤R<100kΩ	25
	4kV:10kΩ≤R<100kΩ	5
PCF1	14kV:3.3Ω≤R<30kΩ	5
	14kV:30kΩ≤R<390kΩ	10
	7kV:30kΩ≤R<390kΩ	5
PCF2	20kV:3.3Ω≤R<10kΩ	5
	20kV:10kΩ≤R<390kΩ	10
	11kV:10kΩ≤R<390kΩ	5



Mouser Electronics

Authorized Distributor

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

KOA Speer:

PCF1/2C103K PCF1/2C513K PCF1/4C100K PCF1/4C101K PCF1/4C201K PCF1/4C240K PCF1/4C4R7K PCF1/4CT52R101K PCF1C101K PCF1C270K PCF1C472K PCF1C562K PCF1C5R6K PCF1CT631R102K PCF1CT631R152K PCF1CT631R270K PCF2C101K PCF2C183K PCF2C270K PCF2C273K PCF2C330K PCF2C391K PCF2C6R8K PCF2CT631R100K PCF2CT631R102K PCF2CT631R150K PCF2CT631R330K PCF2CT631R3R3K PCF2CT631R4R7K PCF2CT631R562K PCF1/2CT52R102K PCF1CT631R274K PCF1C4R7K PCF2CT631R470K PCF2CT631R151K PCF1C330K PCF2CT631R560K PCF2CT631R270K PCF1/2C102K PCF1C100K PCF1C102K PCF1C103K PCF1C104K PCF1C120K PCF1C121K PCF1C122K PCF1C123K PCF1C151K PCF1C152K PCF1C153K PCF1C180K PCF1C181K PCF1C182K PCF1C183K PCF1C220K PCF1C221K PCF1C222K PCF1C223K PCF1C271K PCF1C272K PCF1C273K PCF1C331K PCF1C333K PCF1C390K PCF1C391K PCF1C392K PCF1C393K PCF1C3R3K PCF1C3R9K PCF1C470K PCF1C471K PCF1C473K PCF1C560K PCF1C561K PCF1C563K PCF1C680K PCF1C681K PCF1C682K PCF1C683K PCF1C6R8K PCF1C820K PCF1C821K PCF1C822K PCF1C823K PCF1C8R2K PCF2C100K PCF2C102K PCF2C103K PCF2C104K PCF2C120K PCF2C121K PCF2C122K PCF2C123K PCF2C124K PCF2C150K PCF2C151K PCF2C152K PCF2C153K PCF2C154K PCF2C180K