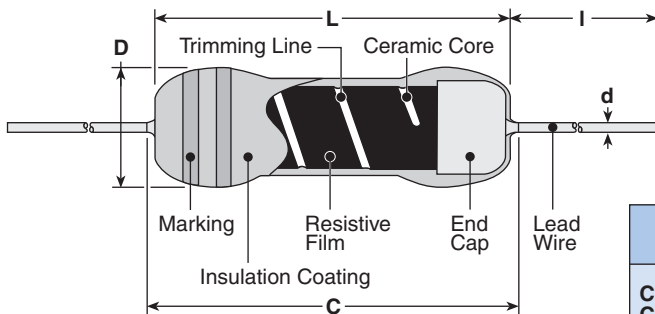


features

- Flameproof coating is available (specify "CFP")
- Reduced body size (specify "CFS/CFPS")
- Suitable for automatic machine insertion
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

leaded resistors

dimensions and construction



Type	Dimensions inches (mm)				I**	
	L	C (max.)	D	d (nom.)	Standard	Long
CFS1/4 CFPS1/4	.126±.008 (3.2±0.2)	.134 (3.4)	.067 ^{+0.008} / _{-.004} (1.7 ^{+0.2} / _{-0.1})	.018 (0.45)	.551 Min.* (14.0 Min.)	.787 Min.*** (20.0 Min.)
CF1/4 CFP1/4	.240± ^{+0.028} / _{-.02} (6.1± ^{+0.7} / _{-0.5})	.280 (7.1)	.092±.012 (2.3±0.3)	.024 (0.6)		
CFS1/2 CFPS1/2	.248±.02 (6.3±0.5)	.280 (7.1)	.112± ^{+0.012} / _{-.026} (2.85±0.65)	.024 (0.6)	.787 Min. (20.0 Min.)	—
CFB1/2 CFPB1/2	.354±.039 (9.0±1.0)	.433 (11.0)	.138±.02 (3.5±0.5)	.028 (0.7)		

* Forming code S is applied for bulk type.

** Lead length changes depending on taping and forming type.

*** Long type is custom-made

ordering information

CF	1/4	C	T52	R	103	J
Type	Power Rating	Termination Material	Taping and Forming	Packaging	Nominal Resistance	Tolerance
CF CFP	S1/4: 0.25W 1/4: 0.25W S1/2: 0.5W B1/2: 0.5W	C: SnCu	Axial: T26, T52, L52 Radial: VT, MT, MHT, VTP, VTE U Forming: U, UCL M Forming: M5, M10, M12.5 L Forming: L10, L12.5 S Forming: S	A: Ammo R: Reel	2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω	G: ±2% J: ±5%

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

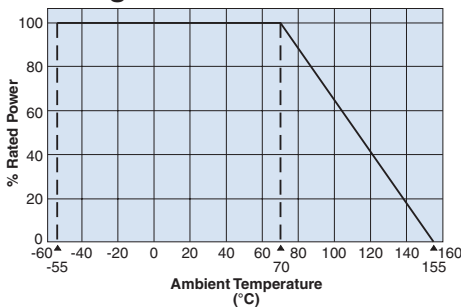
applications and ratings

Part Designation	Power Rating @ 70°C	Minimum Dielectric Withstanding Voltage	T.C.R. (ppm/°C)				Resistance Range E-24 (G±2%)	Resistance Range E-24 (J±5%)	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage
			+350 to -450	0 to -700	0 to -1000	0 to -1300				
CFS1/4	0.25W	300V	2.2Ω - 47kΩ	51kΩ - 100kΩ	110kΩ - 330kΩ	360kΩ - 1MΩ	10Ω - 330kΩ	2.2Ω - 1MΩ	250V	500V
CFPS1/4							10Ω - 100kΩ	2.2Ω - 1MΩ		
CF1/4		500V	2.2Ω - 100kΩ	110kΩ - 330kΩ	360kΩ - 1MΩ	1.1MΩ - 5.1MΩ	10Ω - 1MΩ	2.2Ω - 5.1MΩ	300V	600V
CFP1/4								2.2Ω - 1MΩ		
CFS1/2	0.50W	700V	1.0Ω - 91kΩ	100kΩ - 1MΩ	1.1MΩ - 2.2MΩ	2.4MΩ - 5.1MΩ	10Ω - 1MΩ	1.0Ω - 5.1MΩ	350V	700V
CFPS1/2			2.2Ω - 91kΩ		—			—		
CFB1/2	0.50W	700V	2.2Ω - 100kΩ	110kΩ - 1MΩ	1.1MΩ - 2.2MΩ	2.4MΩ - 5.1MΩ	10Ω - 1MΩ	2.2Ω - 5.1MΩ	400V	800V

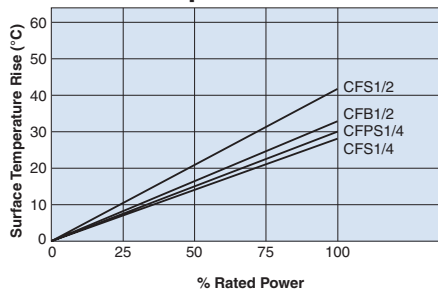
Operating temperature: -55°C ~ +155°C

environmental applications

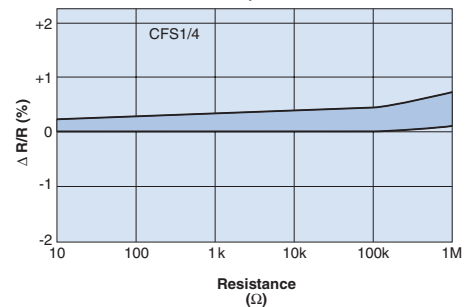
Derating Curve



Surface Temperature Rise



Load Life @ 70°C, 1000 Hr



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

Performance Characteristics

Parameter	Requirement Δ R ±(% + 0.05Ω)		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	Measuring points are at 10mm ±1mm from the end cap.
T.C.R.	Within specified T.C.R.	—	+25°C/+125°C
Overload (Short time)	±1%	±0.5%	Rated voltage x 2.5 or max. overload voltage for 5 seconds, whichever is lower
Resistance to Solder Heat	±1%	±0.5%	260°C ±5°C, 10 seconds ± 1 second
Terminal Strength	No lead-coming off and loose terminals	—	Twist 360°C, 5 times
Rapid Change of Temperature	±1%	±0.5%	-55°C (30 minutes), +125°C (30 minutes), 5 cycles
Moisture Resistance	±5%	±2.5%	40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±3%	±1.5%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Resistance to Solvent (CFS & CFPS only)	No abnormality in appearance. Marking shall be easily legible.	—	Ultrasonic washing with Isopropyl alcohol for 2 minutes. Power: 0.3W/cm², f: 28kHz, temp: 35°C±5°C
Flame Retardant (CFS & CFPS only)	No evidence of flaming or self-flaming	—	Flame test: The test flame shall be applied and removed for each 15 seconds respectively to repeat the cycle 5 times. Overload flame retardant: Power (AC) corresponding to 2, 4, 8, 16 and 32 times the power rating shall be applied for each 1 minute until disconnection occurs. However the applied voltage shall not exceed 4 times the maximum operating voltage.

Mouser Electronics

Authorized Distributor

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KOA Speer:

[CF1/4L752J](#) [CF1/2LT52R3R3J](#) [CFS1/4LT52R272J](#) [CF1/4LT52R392J](#) [CFS1/4L560J](#) [CFS1/4L564J](#)
[CF1/4LT26A103J](#) [CF1/2L201J](#) [CF1/2L204J](#) [CF1/4LT52R331J](#) [CF1/4LT52R211J](#) [CF1/4LT52R334J](#)
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[CF1/4L3R9J](#) [CF1/4L200J](#) [CF1/4L201J](#) [CF1/4L204J](#) [CF1/4LT52R680G](#) [CF1/2L915J](#) [CF1/4LT52R561G](#)
[CF1/4LT52R684J](#) [CF1/4LT52R680J](#) [CF1/4L334J](#) [CF1/2LT52R183J](#) [CF1/4LT52R682J](#) [CF1/2L911J](#) [CF1/2L913J](#)
[CF1/4LT52R561J](#) [CF1/4LT52R565J](#) [CF1/2L912J](#) [CF1/2L910J](#) [CF1/4LT52R683J](#) [CF1/4LT52R681J](#) [CFS1/4L392J](#)
[CF1/4L391J](#) [CF1/2LT52R122J](#) [CF1/2LT52R1R1J](#) [CF1/4L395J](#) [CF1/2L5R6J](#) [CF1/4L273J](#) [CF1/4LR47J](#)
[CFS1/4L394J](#) [CF1/2LT52R1R5J](#) [CF1/2LT52R124J](#) [CF1/4L393J](#) [CF1/4LT52R622J](#) [CF1/2LT52R913J](#) [CF1/2L165J](#)
[CF1/2LT52R911J](#) [CF1/2LT52R7R5J](#) [CF1/2LT52R165J](#) [CF1/2LT52R163J](#) [CF1/2L161J](#) [CF1/4LVTPR5R1J](#)
[CF1/4LT52RR51J](#) [CF1/4LT52RR50J](#) [CFS1/4LT52R131J](#) [CFS1/4LT52R132J](#) [CF1/4L271J](#) [CF1/4LT52R624J](#)
[CF1/4LT52R6R8J](#) [CF1/4L272J](#) [CF1/4LT52R620J](#) [CF1/4L275J](#) [CF1/4LT52R623J](#) [CFS1/4L4R7J](#) [CF1/4L180J](#)
[CF1/4LT52R621J](#) [CF1/4LT52R6R2J](#) [CF1/2L182J](#) [CF1/2L5R1J](#) [CF1/2L180J](#) [CF1/2L184J](#) [CF1/4LR68J](#) [CF1/4L270J](#)
[CF1/4L274J](#) [CFS1/4LT52R562J](#) [CF1/4LT52R625J](#) [CF1/4LT52R912J](#) [CF1/4LT52R910G](#) [CF1/4LT52R300J](#)
[CF1/4LT52R915J](#) [CF1/4LT52R301G](#) [CF1/4LT52R914J](#) [CF1/4LT52R305J](#) [CF1/4LT52R302J](#) [CFS1/4LT52R100G](#)