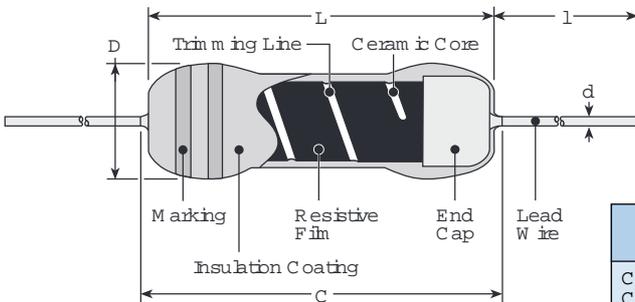


features

- Flameproof coating is available (specify "CFP")
- Reduced body size (specify "CFS/CFPS")
- Suitable for automatic machine insertion
- Marking: Venetian red with color-coded bands on CF
Green body color with color-coded bands on CFP
Ivory body color with color-coded bands on CFS1/4
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

dimensions and construction



Type	Dimensions inches (mm)					L**	
	L	C (max.)	D	d (nom.)	Standard	Long	
CFS1/4 CFPS1/4	126±.008 (3.2±0.2)	.134 (3.4)	.067±.008 (1.7±0.2)	.018 (0.45)	.551 M in.* (14.0 M in.)	.787 M in.** (20.0 M in.)	
CF1/4 CFP1/4	.240±0.2 (6.1±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±.012 (2.85±0.3)	.024 (0.6)	.787 M in. (20.0 M in.)	—	
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

New Part#	CF	1/4	C	T52	R	103	J
Type	CF CFP	Power Rating S1/4:0.25W 1/4:0.25W S1/2:0.5W B1/2:0.5W	Termination Material C:SnCu	Taping and Forming 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	Packaging A: Ammo R: Reel	Nominal Resistance 2 significant figures + 1 multiplier "R" indicates decimal value <10	Tolerance G: ±2% J: ±5%

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

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use. 12/23/13

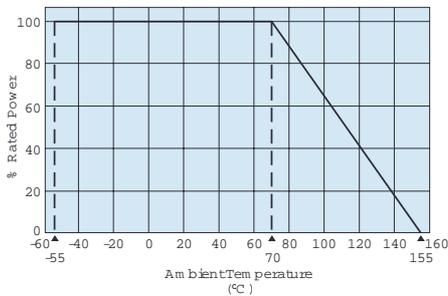
applications and ratings

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	2.2 -47k	51k -100k	110k -330k	360k -1M	10 -330k	2.2 -1M	250V	500V
CFPS1/4			10 -100k	2.2 -1M						
CF1/4		500V	2.2 -100k	110k -330k	360k -1M	1.1M -5.1M	10 -1M	2.2 -5.1M	300V	600V
CFP1/4								2.2 -1M		
CFS1/2	0.50W	700V	1.0 -91k	100k -1M	1.1M -2.2M	2.4M -5.1M	10 -1M	1.0 -5.1M	350V	700V
CFPS1/2			2.2 -91k					2.2 -1M		
CFB1/2	0.50W	700V	2.2 -100k	110k -1M	1.1M -2.2M	2.4M -5.1M	10 -1M	2.2 -5.1M	400V	800V

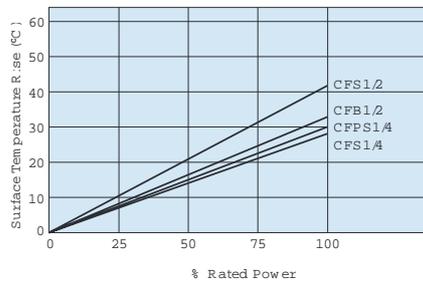
Operating temperature: -55°C ~ +155°C

environmental applications

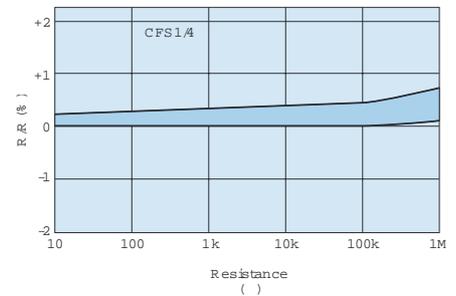
Derating Curve



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 Limit	R ± (% + 0.05) Typical	Test Method
Resistance	Within specified tolerance	—	Measuring points are at 10mm ±1mm from the end cap.
T.C.R.	Within specified T.C.R.	—	Room temperature +100°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
Thermal Strength	No bad 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/cm ² , 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.

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12/24/13