

Carbon Film Resistors

CR-S/FCR-S (mini-size series)

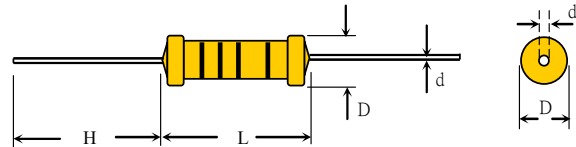
FEATURES

- Space save on PC board
- Excellent long term stability
- Cost comparable to conventional sizes
- Standard Value: 1R-10Meg in E24 series
- Standard tolerance: $\pm 5\%$ (available $\pm 2\%$)
- Body Color: yellow-brown (biege)
- Color band marking
- Flameproof coating available (As FCR-S type)
- Operating Temperature : $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

MATERIAL

- Element: Deposited Carbon Film
- Core: High Purity Ceramic Al_2O_3
- Termination: Standard solder-plated cooper lead
- Coating: Epoxy, (FCR-S is grey silicone)

DIMENSION



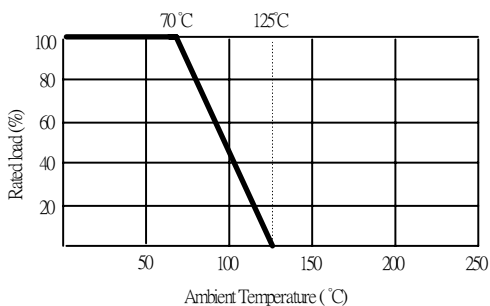
GENERAL SPECIFICATION

TYPE	DIMENSION (mm)				POWER RATING	MAXIMUM WORKING VOLTAGE*	MAXIMUM OVERLOAD VOLTAGE**	RESISTANCE RANGE $\pm 5\%$
	L	D	H	$d \pm 0.05$				
CR025S	3.2 ± 0.2	1.6 ± 0.2	28 ± 1.0	0.45	1/4W	250V	500V	$0.5 \Omega \sim 22\text{M} \Omega$
CR050S	6.0 ± 0.5	2.3 ± 0.3	28 ± 1.0	0.55	1/2W	350V	700V	$0.5 \Omega \sim 22\text{M} \Omega$
CR100S	9.0 ± 0.5	3.0 ± 0.5	28 ± 1.0	0.64	1W	500V	1000V	$0.5 \Omega \sim 22\text{M} \Omega$
CR200S	11 ± 1.0	4.0 ± 0.5	35 ± 3.0	0.75	2W	500V	1000V	$0.5 \Omega \sim 22\text{M} \Omega$
CR300S	15 ± 1.0	5.0 ± 0.5	35 ± 3.0	0.75	3W	500V	1000V	$0.5 \Omega \sim 22\text{M} \Omega$

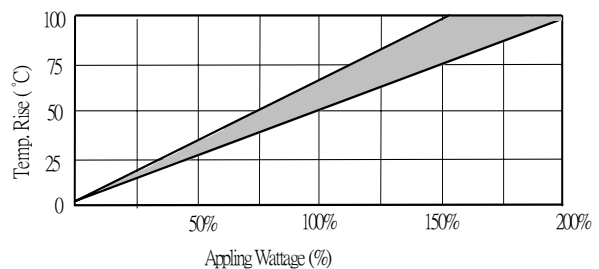
* Maximum Working Voltage determined by $E = \sqrt{PxR}$, where E should not exceed value listed in column above.

** Maximum Overload Voltage equals to $2.5xE$, but should not exceed value listed in column above

DERATING CURVE



TEMPERATURE RISE



CHARACTERISTIC

Temperature Coefficient	$\pm 300\text{ppm} (<100\text{k}\Omega)$, $\pm 1000\text{ppm max.}$
Insulation Resistance	$10,000\text{M} \Omega$ Min.
Load Life (1000 hours)	$\leq \pm 3\%$ typical, $\pm 5\%$ Max
Shorttime Overload	$\pm 1.0\%$ Max.
Temperature Cycling	$\pm 1.0\%$ Max.
Moisture Resistance	$\pm 5.0\%$ Max.
Shock & Vibration	$\pm 0.5\%$ Max. or 0.5Ω
Effect of Soldering	$\pm 0.5\%$ Max. or 0.5Ω

* Total maximum resistance change is $\Delta R + 0.01R$

HOW TO ORDER :

<u>CR125S</u>	<u>J</u>	<u>TB</u>	=	<u>10R</u>
↓	↓	↓		↓
Type/Power	Tol.	Package		Resistance
CR125S	$J = \pm 5\%$	B=Bulk		10R = 10 Ω
CR025S		TB=Tape/box		1K2 = 1.2K Ω
CR050S		TR=Tape/reel		1M = 1M Ω
CR100S		Lead forming		
CR200S		M		
CR300S		F		
		MB		

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