

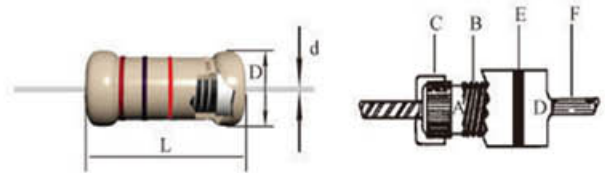
CARBON FILM RESISTOR(CFR)



●特点 Features:

- 1、性能稳定、阻值范围广、体积小、工作温度和极限电压较高。Stable performance, extensive resistance, small size, high operating temperature and high ultimate voltage.
- 2、脉冲负荷适应性强、高频特性好。Highly adaptive pulse load, good high frequency performance.
- 3、使用环境温度 Operating ambient temperature: $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ 。
- 4、本体涂漆颜色为土黄色，小型化涂漆颜色为棕色。The normal size coating is yellow and the small size coating is brown.
- 5、阻值误差 Resistance tolerance: $\pm 2\%$ 、 $\pm 5\%$ 、 $\pm 10\%$ 。

●产品结构图 Construction Drawing:



- A、高热传导瓷芯 High heat exchanged Ceramic core.
- B、高稳定性导电膜 High stability Electric conduction film.
- C、铁帽 Iron Cap.
- D、环氧树脂涂料 Epoxy resin coating.
- E、色环 Color Ring.
- F、镀锡铜线或镀锡铜包钢线 Tinned copper lead wire or CP lead wire.

●规格尺寸及耐压性能 Dimensions and Voltage Performance:

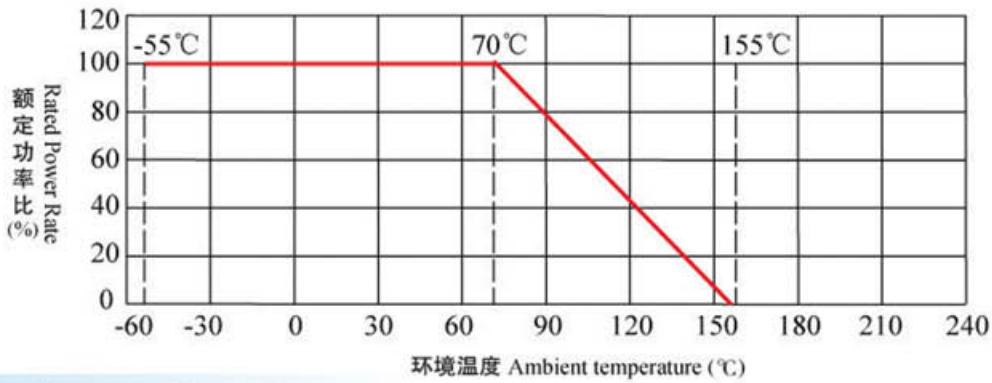
料号 Part No.	功率 Power	阻值范围 Resistance range	尺寸 Dimensions(mm)			最大工作电压 Max. working voltage	最大负荷电压 Max. overload voltage	最高脉冲电压 Max. Pulse voltage	最高绝缘电压 Max. insulation voltage
			L ± 1	D ± 0.5	d ± 0.05				
CCR12	1/8W	0R~22M	3.5	1.7	0.41	200V	400V	500V	300V
CFR12	1/6W								
CCR25S	1/4WS	0R~22M	3.5	1.7	0.41	200V	400V	500V	300V
CFR25S									
CCR25	1/4W	0R~22M	6.0	2.3	0.45	250V	500V	750V	500V
CFR25					0.52				
CCR50S	1/2WS	0R~22M	6.0	2.3	0.45	250V	500V	750V	500V
CFR50S					0.52				
CFR50	1/2W	0R1~22M	9.0	3.2	0.58	350V	700V	1000V	700V
CFR100•	1WS	0R1~22M	9.0	3.2	0.58	350V	700V	1000V	700V
CFR100•	1W	0R1~22M	11.0	4.5	0.75	500V	1000V	1000V	1000V
CFR200•	2WS	0R1~22M	11.0	4.5	0.75	500V	1000V	1000V	1000V
CFR200	2W	0R1~22M	15.0	5.0	0.75	500V	1000V	1000V	1000V
CFR300S	3WS	0R1~22M	15.0	5.0	0.75	500V	1000V	1000V	1000V
CFR300	3W	0R1~22M	18.0	6.0	0.75	700V	1200V	1200V	1000V
CFR500	5W	0R1~22M	24.0	8.0	0.75	700V	1200V	1200V	1000V

备注Note:

- a、功率后面的“S”表示小型化。“S” means small size.
- b、额定电压 Rated voltage = $\sqrt{\text{功率Power} \times \text{阻值Resistance Value}}$
- c、当计算得出的额定电压大于最大工作电压电压，使用时取二者较小值。If the calculated rated voltage is higher than max. working voltage, it will be got the lower value.



● 额定功率递减图 Rated Power Derating Curve:



● 性能测试 Performance Test:

测试项目 Test Item	测试条件 Test Condition	性能 Performance
温度系数 Temperature coefficient	在常温及常温+100°C时分别测量电阻值并计算每度的阻值变化率。Test the resistance value at normal temperature and normal temperature added 100°C, calculate per °C resistance value change rate.	±100ppm/°C
短时间过负荷 Short time overload	施加2.5倍额定电压或最高负荷电压(取较小者)5秒。 2.5 × rated voltage or Max. overload voltage (get the lower) for 5 seconds.	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$
断续过负荷 Pulse overload	4倍额定电压或最高断续负荷电压(取较小者)测试1秒,停止25秒,循环10000 ± 200次。At 4× rated voltage or Max. pulse overload voltage (get the Lower) cycle 10000±200 times (1 second on, 25 seconds off)。	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$
耐焊接热 Resistance to soldering heat	在350 ± 10°C的锡炉中浸入2 ~ 3秒。 Immerge into the 350±10°C tin stove for 2~3 seconds.	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$
可焊性 Solderability	在245 ± 3°C锡炉中浸入2 ~ 3秒。 Immerge into the 245±3°C tin stove for 2~3 seconds.	焊锡面积覆盖率95%以上 The soldering area is over 95%
温度循环 Temperature cycling	在-55°C时放置30分钟,然后在+25°C时放置10~15分钟,然后再在+155°C时放置30分钟,然后再在+25°C时放置10~15分钟,共循环5次。At -55°C for 30 min, then at +25°C for 10~15 min, then at +155°C for 30 min, then at +25°C for 10~15 min, total 5 cycles.	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$
耐湿负荷寿命 Load life in humidity	在温度为40 ± 2°C,相对湿度为90 ~ 95%的恒温恒湿箱中,施加额定电压或最大工作电压(取较小者)共1000小时(通1.5小时,断0.5小时)。Overload rated voltage or Max. working voltage (get the lower) for 1000 hours (1.5 hours on and half-hour off) at the 40±2°C and 90~95% relative humidity.	$\Delta R \leq \pm (5\%R_0 + 0.05\Omega)$
耐温负荷寿命 Load life in heat	在70 ± 2°C恒温恒湿箱中施加额定电压或最大工作电压(取较小者)1000小时(通1.5小时,断0.5小时)。Overload rated voltage or Max. working voltage (get the lower) for 1000 hours (1.5 hours on and half-hour off) at the 70±2°C.	$\Delta R \leq \pm (5\%R_0 + 0.05\Omega)$
难燃性 Nonflammability	分别按5、10、16倍额定功率加交流负荷5分钟。Respectively load AC voltage by 5, 10, 16 times rated power for 5 mminutes.	不可有明显火焰 No visible flame

● 料号规则 Part No. Regulation:

HCR	01B	F	0	T520	100K0
产品名称 Product Name	功率 Power	精度 Tol.	特殊码 Special Code	成型 Forming	阻值 Ohm
难燃性碳膜固定电阻器 Flame of Carbon Film Fixed Resistors	016 = 1/6W 016 = 1/8W 014 = 1/4W 14S = 1/4WS 012 = 1/2W 12S = 1/2WS 01B = 1W 01S = 1WS 02B = 2W 02S = 2WS 03B = 3W 03S = 3WS 05S = 5WS	F = ± 1% J = ± 5%		T260 = T26 T520 = T52 T710 = T71 M001 = M F001 = F B001 = B	0R100 = 0.1Ω 0R220 = 0.22Ω 10R00 = 10Ω 10K00 = 10KΩ 1M000 = 1MΩ
LCR = Green, Copper wire HCR = Brick Red, Copper wire LCC = Green, CP wire HCC = Brick Red, CP wire					