

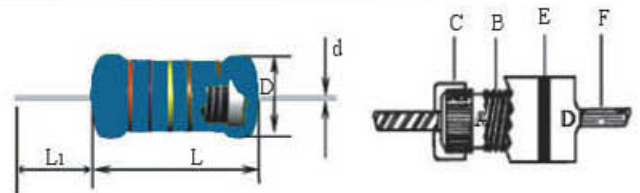
METAL FILM RESISTOR(MFR)



●特点 Features:

- 1、低温度系数、精度高、高频性能好。Low temperature coefficient, high precision, and good high frequency performance.
- 2、使用环境温度 Operating ambient temperature: $-55^{\circ}\text{C}\sim+155^{\circ}\text{C}$ 。
- 3、真空溅射金属皮膜，涂层为蓝色环氧树脂，防水性好。
Film the metal in Vacuum, the surface coating is blue resin with the good waterproof.
- 4、阻值误差 Resistance Tolerance: $\pm 5\%$ 、 $\pm 1\%$ 。
- 5、可根据客户提供其它颜色涂层，比如湖绿色环氧树脂。
Can provide other colors according to customer needs coating, such as Lake green epoxy.

●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				
CMF016 MFR016	1/8W 1/6W	0R~22M	3.5	1.7	0.41	150V	300V	500V	300V
CMF14S MFR14S	1/4WS	0R~22M	3.5	1.7	0.41	150V	300V	500V	300V
CMF014 MFR014	1/4W	0R~22M	6.0	2.3	0.45	250V	500V	750V	500V
					0.52				
CMF12S MFR12S	1/2WS	0R~22M	6.0	2.3	0.45	250V	500V	750V	500V
					0.52				
MFR012	1/2W	0R1~22M	9.0	3.2	0.58	350V	700V	1000V	700V
MFR01S	1WS	0R1~22M	9.0	3.2	0.58	350V	700V	1000V	700V
MFR01B	1W	0R1~22M	11.0	4.5	0.75	500V	1000V	1000V	1000V
MFR02S	2WS	0R1~22M	11.0	4.5	0.75	500V	1000V	1000V	1000V
MFR02B	2W	0R1~22M	15.0	5.0	0.75	500V	1000V	1000V	1000V
MFR03S	3WS	0R1~22M	15.0	5.0	0.75	500V	1000V	1000V	1000V
MFR03B	3W	0R1~22M	17.0	6.0	0.75	700V	1200V	1200V	1000V
MFR05S	5WS	0R1~22M	17.0	6.0	0.75	700V	1200V	1200V	1000V

备注Note:

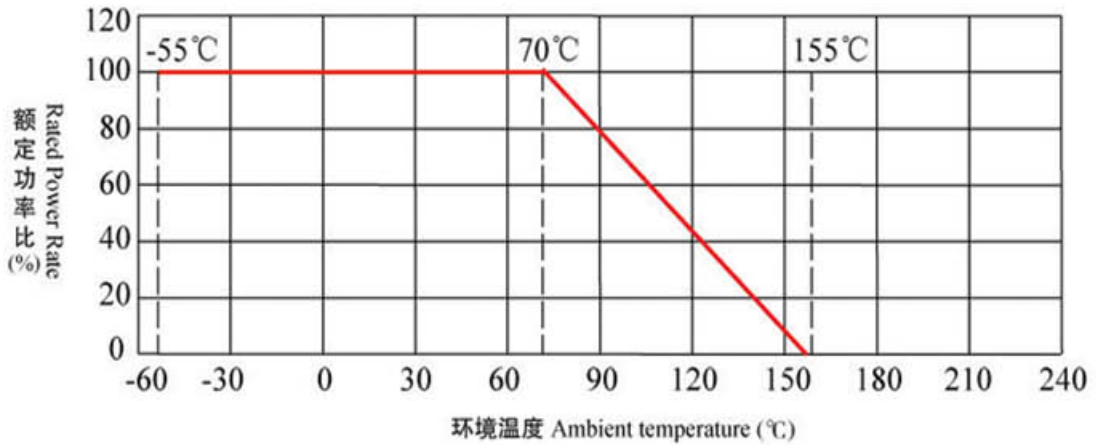
a、功率后面的“S”表示小型化。“S”means small size.

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℃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℃, 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.	$\Delta R \leq \pm (0.5\%R_0 + 0.05\Omega)$
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).	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$
耐焊接热 Resistance to soldering heat	在350 ± 10℃的锡炉中浸入2~3秒。 Immerge into the 350±10℃ tin stove for 2~3 seconds.	$\Delta R \leq \pm (0.5\%R_0 + 0.05\Omega)$
可焊性 Solderability	在245 ± 3℃锡炉中浸入2~3秒。 Immerge into the 245±3℃ 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℃时放置30分钟,然后在+25℃时放置10~15分钟,然后在+155℃时放置30分钟,然后在+25℃时放置10~15分钟,共循环5次。At -55℃ for 30 min, then at +25℃ for 10~15 min, then at +155℃ for 30 min, then at +25℃ for 10~15 min, total 5 cycles.	$\Delta R \leq \pm (0.5\%R_0 + 0.05\Omega)$
耐湿负荷寿命 Load life in humidity	在温度为40 ± 2℃,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℃ and 90~95% relative humidity.	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$
耐温负荷寿命 Load life in heat	在70 ± 2℃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℃.	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$

● 料号规则 Part No. Regulation:

MFR	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
金属膜固定电阻器 Metal 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	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
MFR: 铜引线 Copper Lead Wire CMF: CP引线 CP Lead Wire	02B = 2W 02S = 2WS 03B = 3W 03S = 3WS 05S = 5WS				