



●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°C~+155°C.
- 3、真空溅射金属膜, 涂层为湖绿色环氧树脂, 防水性好。Film the metal in Vacuum, the surface coating is Green resin with the good waterproof.
- 4、阻值误差 Resistance tolerance: ±1%, ±5%.

●产品结构图 Structural 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、环氧树脂涂层 Epoxy resin coating.
 E、色环 Color Ring
 F、镀锡铜线或镀锡铜包铜线 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) L±1 D±0.5 d±0.05	最大工作电压 Max.working voltage	最大过电压 Max.overload voltage	最高脉冲电压 Max.Pulse voltage	最高绝缘电压 Max.insulation voltage
CMF016 MFR016	1/6W	0R~22M	3.5 1.7 0.40	150V	300V	500V	300V
CMF14S MFR14S	1/4WS	0R~22M	3.5 1.7 0.40	150V	300V	500V	300V
CMF014 MFR014	1/4W	0R~22M	6.0 2.3 0.45 0.52	250V	500V	750V	500V
CMF12S MFR12S	1/2WS	0R1~22M	6.0 2.3 0.45 0.52	250V	500V	750V	500V
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	24.0 8.0 0.75	700V	1200V	1200V	1000V
MFR05S	5WS	0R1~22M	24.0 8.0 0.75	700V	1200V	1200V	1000V

备注: a、功率后面的“S”表示小型化;

b、额定电压=√功率×阻值;

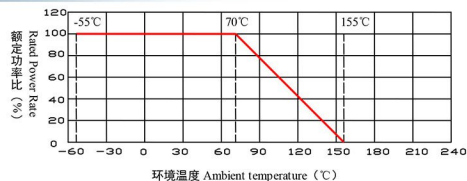
c、当计算得出的额定电压大于元件极限电压, 使用时取二者较小值。

Note: a、“S”means mini size;

b、Rated voltage $V = \sqrt{\text{Power} \times \text{Resistance Value}}$;

c、If the calculated rated voltage is higher than the 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
短时过载 Short time overload	施加 2.5 倍额定电压或最高负电压 (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 倍额定电压或最高负电压 (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°C 锡炉中浸入 2~3 秒。 Immer get into 350±10°C tin stove for 2~3 seconds.	$\Delta R \leq \pm (0.5\%R_0 + 0.05\Omega)$
可焊性 Solderability	在 260±5°C 锡炉中浸入 2~3 秒。 Immer get into 260±5°C tin stove for 2~3 seconds.	焊接面积覆盖 95% 以上 The area of soldering 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 +125°C 时放置 30 分钟, 然后在 +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 +125°C for 30 min, then at +25°C 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°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.	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$
耐湿负荷寿命 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.	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$

●料号规则 Part No. Regulation:

MFR	01B	F	0	TS20	10K00
产品种类 Product Name	功率 Power	精度 Tol.	特殊码 Special Code	成型 Forming	阻值 Ohm
金属电阻器 Metal Film Fixed Resistors	016=1/8W 14S=1/4WS 12S=1/2WS	016=1/6W 014=1/4W 012=1/2W	F=±1% J=±5%	T260=T26 T520=T52 T710=T71	0R100=0.1Ω 0R220=0.22Ω 10R00=10Ω
MFR: 铜引线 Copper lead wire	01S=1WS 02S=2WS 03S=3WS	01B=1W 02B=2W 03B=3W		M001=M F001=F B001=B	10K00=10KΩ 1M000=1MΩ
CMF: CP 引线 CP lead wire	05S=5WS				