

规格书

SPECIFICATION

客户名称:

CUSTOMER:

品名:

金属氧化膜电阻器

PARTNAME:

FHMOR-\*\*\*\*\*

规格:

SPECIFICATION:

版本号:

A02

VERSION:

日期:

2026-1-23

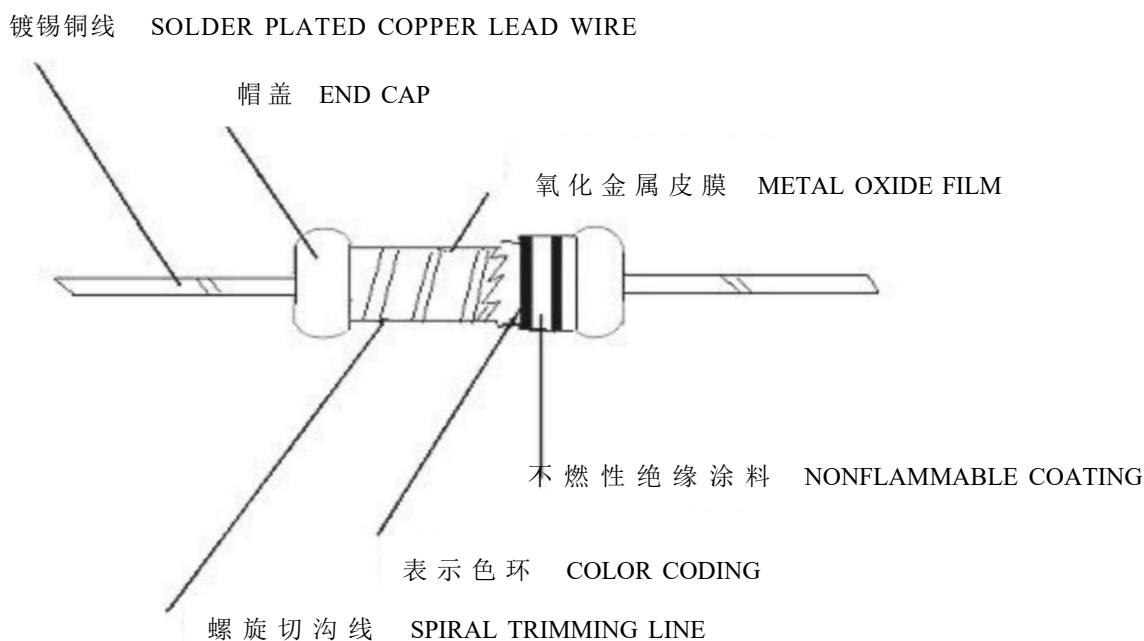
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制造			客户		
APPROVAL			APPROVAL		
拟制 Draft by	审核 Checked by	确认 Approve by	检验 Check by	审核 Checked by	批准 Approval by
张桂林	何建东	李四华			

## 一. 品名 TYPE NAME

FHMOR	1W	100	G	T
产品类别 Type	额定功率 Power Rating		标称电阻值 Nominal Resistance	精度 Tolerance
FHMOR	Nomal Size	Small Size	三位数系列：前两位表示有效数字，第三位表示有效数字后零的个数。 Three digits (E-24 series): The first two digits are significant figures and the third one denotes number of zeros. 小数点用R表示。Decimal point should be expressed by "R". 例：0R12 = 0.12Ω；1R0 = 1.0Ω；121R = 120Ω；122 = 1.2KΩ	J: ±5% G: ±2% F: ±1% .....
	1/4W 1/2W 1W 2W 3W 5W	1/2WS 1WS 2WS 3WS 5WS		
				形状 Form
				T: 编带 (标准长度, "TXX" 为特殊长度, 单位: mm) B: 散料 F: F-成型系列 (垂直成型) MB: MB-成型系列 MK: MK-成型系列

## 二. 金属氧化膜电阻器结构图 METAL OXIDE FILM CONSTRUCTION



**REMARK:** 底漆颜色 COATING COLOR : 灰色 (GREY)

## 三. 特点 FEATURES

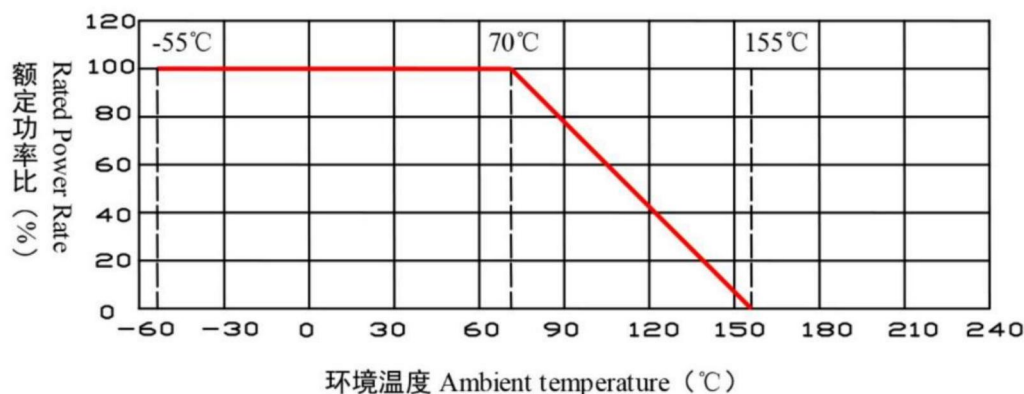
- 具有大负荷下的优良耐久性。  
GOOD DURABILITY UNDER HEAVY LOAD.
- 不燃性绝缘涂装。  
FLAME RETARDANT COATING WITH NON-FLAMABLE PAINT.
- 标准误差: ±5% (1%、±2%客户要求)  
STANDARD TOLERANCES: ±5% (1% , ±2% IS AVAILABLE ON REQUEST)
- 环保无铅产品  
RoHS COMPLIANT / LEAD-FREE AVAILABLE.

## 四. 主要技术指标 MAIN SPECIFICATION

功率 POWER	最大工作电压 MAX WORKING	最大负荷电压 MAX OVERLOAD	额定功率 Rated Power at 70°C	电阻范围 RESISTANCE VALUE RANGE
FHMOR 1/4W	200V	350V	0.25W	1 Ω-22KΩ
FHMOR 1/2W/ 1/2WS	250V	400V	0.5W	1 Ω-75 KΩ
FHMOR 1W/ 1WS	350V	600V	1W	1 Ω-100KΩ
FHMOR 2W / 2WS	350V	800V	2W	1 Ω-120 KΩ
FHMOR 3W / 3WS	500V	800V	3W	1 Ω-150KΩ
FHMOR 5W/ 5WS	750V	1000V	5W	1Ω -180KΩ

### 1. 额定功率 POWER RATING

额定功率是指在环境温度 70°C 最大输出功率，当环境温度超过 70°C 时功率变化如下图：  
Power rating is defined as maximum power rating continuously applied under ambient temperature at 70°C .when the ambient temperature exceeds 70°C.



环境温度（工作温度）：-55° C ~ +155° C。

Operating ambient temperature (Operating Temperature) :-55° C ~ +155° C.

### 2. 额定电压 RATED VOLTAGE

额定电压为交流或直流电压（频率为 50Hz 或 60Hz）额定电压计算方式为：

Rated voltage is defined as the DC or AC (effective Value at commercial frequency example 50 C/S, 60 C/S) , Voltage when rated power is applied and can be calculated By the following:

$$V = \sqrt{P \times R}$$

V = RATED VOLTAGE      V 标示电压

P = RATED POWER (WATTS)      P 表示功率

R = NOMINAL RESISTANCE VALUE (OHM)      R 表示阻值

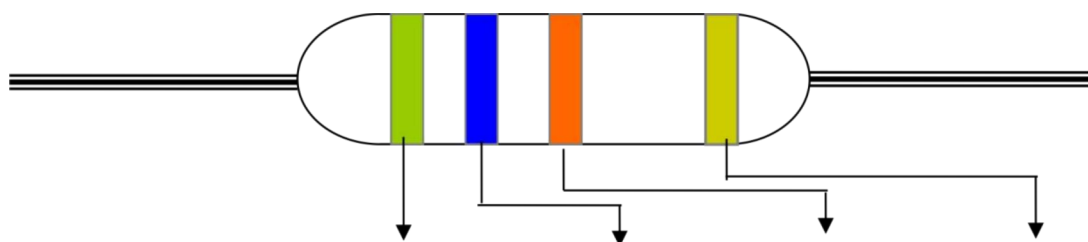
When the calculated rated voltage exceeds the Maximum usable voltage flue shown in CHART, the Maximum usable voltage is defined as the voltage According to the power-decreasing curve shown in CHART.

### 3. 产品性能 PERFORMANCE

项目 ITEM	性能及验收标准 PERFORMANCE AND QUALITY ACCEPTANCE	测试方法 TEST METHOD
温度系数 Resistance to temperature coefficient	±350PPM/°C	$\text{PPM}/^{\circ}\text{C} = \frac{R - R_0}{R_0} * \frac{10^6}{T - T_0}$ <p>R = Measured resistance (Ω) at T T °C 电阻实测值 (Ω) R<sub>0</sub> = Measured resistance (Ω) at T<sub>0</sub> °C 电阻实测值 (Ω) T = Measured test temperature (°C) 测试温度的实测值 T<sub>0</sub> = Measured base temperature (°C) 基准温度的实测值</p>
短时负荷 Short time overload	± (2% + 0.1ohm) Shall be no mechanical breakage 无破损 (外观正常)	2.5 倍额定电压 (交流或直流), 5 秒。AC or DC voltage 2.5times the rated Voltage for 5 seconds .
耐电压 Voltage endurance	No breakdown or flashover 无击穿或飞弧	将电阻放于“V”形槽内, 加 1.42 倍额定电压, 保持一分钟。 Lay the resistor on the 90° angle metal “V” peak is 1.42 times as much as insulate voltage .
端子强度 Terminal strength	内外部无损伤 Shall be no mechanical breakage	施加 3.5KG 30S 的拉力 Pull test apply 3.5KG force to the lead in the direction of lead axis for 30 ±5 seconds.
耐焊性 Heat resistively against soldering	± (1% + 0.05ohm) Shall be no mechanical breakage 无破损 (外观正常)	将电阻引出端浸入 350°C ± 10°C 的锡中, 深度离电阻体 3 ± 0.05mm, 时间 3.5 ± 0.5 秒。放置一小时再测试。 Dip the lead in to a solder bath having a temperature of 350 °C ± 10°C up to 3 ± 0.05mm from the body of the resistor and hold it for 3.5 ± 0.5seconds leave the resistor , at room temperature 1 hours after , then Measure.

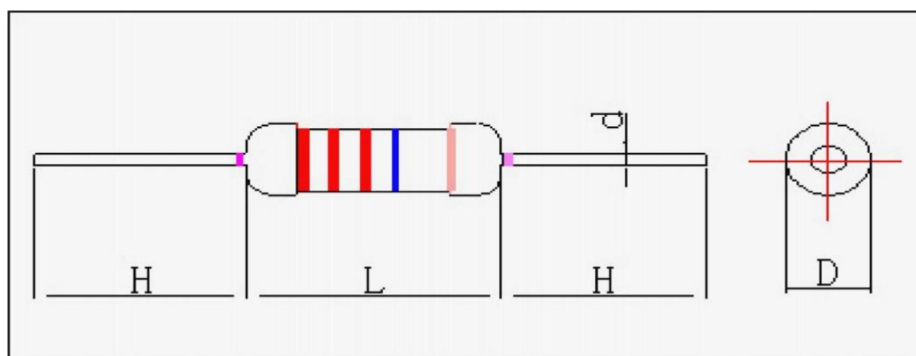
寿命试验 Load life test	$\pm (5\% + 0.1\text{ohm})$ Shall be no mechanical breakage 无破损 (外观正常)	在 70℃的环境中施加额定电压, 1小时通, 0.5小时断1000小时。 In the constant temperature chamber 70℃, apply rated voltage for 1 hour and shut voltage for 0.5 hour and repeat this cycle for 1000 hours.
上锡效果 Solder ability	吃锡面积 $\geq 95\%$ Solder area $\geq 95\%$	浸入260℃ $\pm 5^\circ\text{C}$ 的锡槽中, 时间5 $\pm 0.5$ 秒。 Dip the lead in to a solder bath having a temperature of 260℃ $\pm 5^\circ\text{C}$ . Time: 5 $\pm 0.5$ seconds.
湿度负荷试验 Humidity load test	$\pm (5\% + 0.1\text{ohm})$ Shall be no mechanical breakage 无破损 (外观正常)	温度在 40℃ $\pm 2^\circ\text{C}$ , 相对湿度90 - 95%室内, 用额定电压 1.5 小时开和关闭电压 0.5 小时, 重复这个周期1000 小时, 离开 1 小时后在室温下测试。 In temperature chamber 40℃ $\pm 2^\circ\text{C}$ , relative humidity 90 - 95%, Apply rated voltage 1.5hour and shut voltage 0.5 hour repeat this cycle for 1000 hours, leave in room temperature for 1 hour after test,
不燃性 Flammability	不燃烧现象 No evidence of flaming	本体用试验火焰烧 15秒, 离开 15秒, 5 次。 The test flame shall be applied and removed for 15 secretary respectively, and repeated cycle for 5times.

## 五. 标示 Marking



Color		1 st Band	2 nd Band	3 th Band	Tolerance
Black	黑	0	0	$10^0$	
Brown	棕	1	1	$10^1$	±1% (F)
Red	红	2	2	$10^2$	±2% (G)
Orange	橙	3	3	$10^3$	
Yellow	黄	4	4	$10^4$	
Green	绿	5	5	$10^5$	±0.5 % (D)
Blue	蓝	6	6	$10^6$	±0.25% (C)
Violet	紫	7	7	$10^7$	±0.1 % (B)
Grey	灰	8	8	$10^8$	±0.05% (A)
White	白	9	9	$10^9$	
Gold	金			$10^{-1}$	±5% (J)
Silver	银			$10^{-2}$	±10% (K)

## 六. B 型尺寸 Dimension (B)

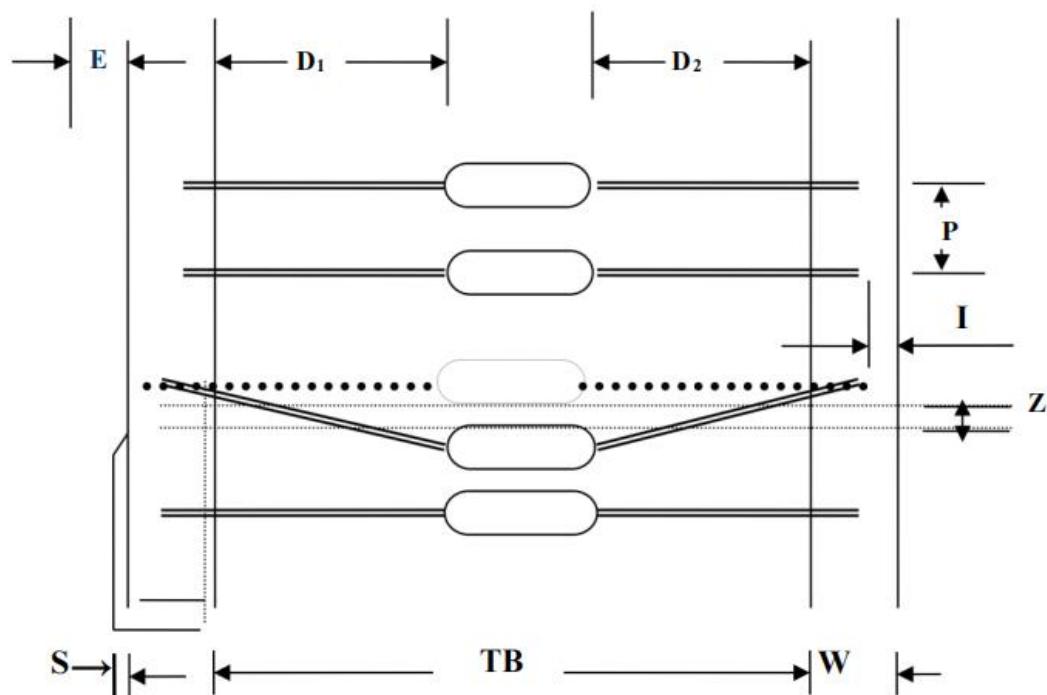


Unit: mm/mm

POWER	L	D	H	d	PULLING (Kg)
1/4W / 1/2WS / 1WS	6.0±0.5	2.3±0.3	27.0±2.0	0.45±0.05	2.5Kg-30S
1/2W / 1WS	9.0± 1.0	3.5±0.5	26.0±2.0	0.50±0.05	2.5Kg-30S
1W	11.0± 1.0	4.5±0.5	30.0±2.0	0.60±0.05	3.0Kg-30S
2WS	11.0± 1.0	4.5±0.5	30.0±2.0	0.65±0.05	3.0Kg-30S
2W / 3WS	15.0± 1.0	5.0±0.5	32.0±2.0	0.65±0.05	5.0Kg-30S
3W /5WS	17.0± 1.0	6.0±0.5	31.5±2.0	0.70±0.05	5.0Kg-30S
5W	24.0± 1.0	8.0± 1.0	28.0±2.0	0.70±0.05	5.0Kg-30S



## 七. 编带尺寸 Taping Dimension (T)



Unit: mm/mm

WATTS	Type	TB	P ±0.5	W ±0.5	(D1 - D2) MAX	E MAX	Z MAX	S MAX	(I) MAX
1/4W / 1/2WS	T 26	26±1.5	5	6	0.8	0	1.2	0.8	3.2
	T 52	52±1.5	5	6	0.8	0	1.2	0.8	3.2
1/2W / 1WS	T 52	52±1.5	5	6	0.8	0	1.2	0.8	3.2
1W / 2WS	T 52	52±1.5	5	6	0.8	0	1.4	0.8	3.2
	T 63	63±1.5	5	6	0.8	0	1.4	0.8	3.2
2W / 3WS	T 63	63±1.5	5	6	0.8	0	1.4	0.8	3.2
	T 73	73±1.5	5	6	0.8	0	1.4	0.8	3.2
3W / 5WS	T 73	73±1.5	10	6	0.8	0	1.4	0.8	3.2
5W	T 73	73±1.5	10	6	0.8	0	1.4	0.8	3.2

## 八. 包装 PACKING

### 1. 标签规格 LABEL SPECIFICATION

- 1) . TYPE、WATTS
- 2) . RESISTOR VALUE AND TOLERANCE
- 3) . QUANTITY
- 4) . LOT NO.

型号、功率  
阻值、误差  
数量  
生产批号

## 2. 包装数量 Packing quantity

Unit: BOX / Kpcs

TYPE QTY	1/4W 1/2WS	1/2W 1WS	1W 2WS	2W 3WS	3W 5WS	5W
T26	5	NA	NA	NA	NA	NA
T52	5	2.5	1	1	NA	NA
T63	NA	NA	1	1	0.5	0.25
T73	NA	NA	1	1	0.5	0.25
B	10	5	4	3	2	1

### 附加说明: Additional instructions:

#### 1、产品存放条件 product storage conditions

a 电阻器应存放在干燥、通风的环境条件下，产品不得受阳光直接照射；

Resistor should be stored in dry and ventilated environment conditions, the product shall not be affected by direct sunlight ;

b 电阻器存放环境应无酸、碱、硫化等具有腐蚀气氛的环境中；Resistor to deposit environment should be no acid, alkali corrosion, sulfide, etc have atmosphere environment;

c 产品存储时间不得超过两年。Product storage time may not exceed two years

#### 2、产品使用补充说明 Products use added

a 产品功率负荷，遵循额定功率降功耗曲线负荷；Product power load, follow the rated power drop curve of load power consumption ;

b 工作电压按额定电压计算公式计算：Working voltage according to the rated voltage calculation formula:

$$V = \sqrt{P \times R}$$

式中：

V =额定电压（伏特） rated voltage (volt)

P =额定功率（瓦特） rated power (watts)

R =标称电阻值（欧姆） nominal resistance (ohms)