

承 认 书
Approval Sheet for
金属氧化膜固定电阻器
Metal Oxide Film Fixed Resistors



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制程说明书

Specifications sheets for products

IBS TECH.INT'L HK LTD

二〇二〇年一月十五日

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谨提出电阻器之承认书, 恭请检讨提出, 并惠以承认为禱.

We prudently put forward our resistors' booklet of acknowledgement for your inspection & discussion, and your kind acknowledgement.

接受栏

Receipt column

承认规格Specifications :

M05WS ± 5%

B44

47R

接受 Receipt		审核 checked		发行 Issued	
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承 认
Acknowledged by



审 核
checked



批 准
Approve



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金属氧化皮膜电阻器

MO(5Ws)

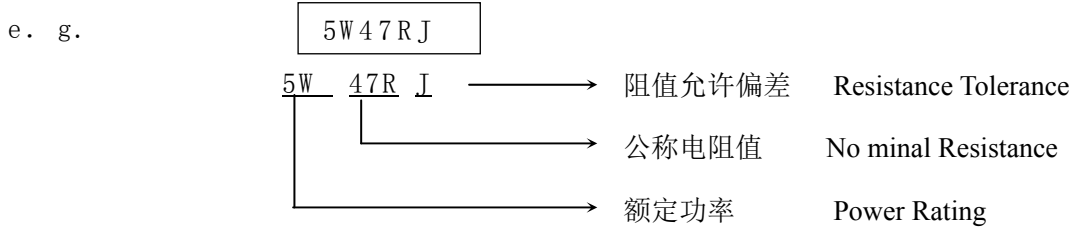
METAL OXIDE FILM RESISTOR

MINI TYPE MO(5Ws)

品名 (PART NUMBER)

(标注功率、阻值、精度)

At the marks of power, resistance, precision.



注：J 表示精度 ±5%。

Note: The J shows that precision ± 5%.

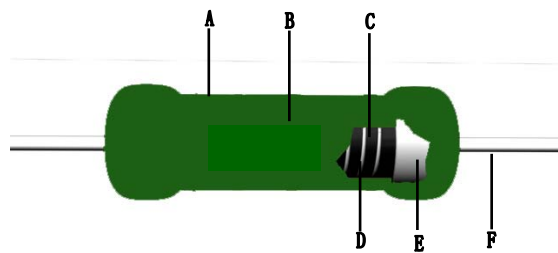
● FEATURES

- ◎ COMPLETE FLAMEPROOF CONSTRUCTION.
- ◎ GOOD RESISTIVITY TO HEAT HUMIDITY & OVERLOAD
- ◎ STRONG & DURABLE FILM.
- ◎ MEET PERFORMANCE REQUIREMENT OF JIS-5202.
- ◎ SMALL-SIZED USE SELECTED CERAMIC, WITH HIGH PERFORMANCE WHICH IS SUITABLE FOR COMPACT SETS.

● 特点

- ◎ 不燃性结构涂装。
- ◎ 耐热,湿度,超负载稳定性良好。
- ◎ 皮膜坚固不易损伤。
- ◎ 符合 JIS 各项规定。
- ◎ 选用高品质瓷棒制作小型品以替代大尺寸高功率之一般型电阻。

● CONSTRUCTION 结构图



- A) EPOXY RESIN(INSULATIVE LACQUER, SOLVENT- PROOF).
PAINT COLOR MINI TYPE IS GREEN
NONCOMBUSTIBLE.
- B) INDICATE THE RESISTANCE VALUE BY LETTERING ON THE SURFACE.
- C) METAL OXIDE FILM (HIGH STABILITY).
- D) CERAMIC CORE (HIGH CONDUCTIVITY).
- E) END CAP (HIGH RELIABILITY FITTING BY ORIGINAL CAP-PRESSING METHOD).
- F) TIN COPPER WIRE (CONTAINED 99% COPPER).

- A) 高绝缘及耐溶剂之硅树脂涂漆。
涂漆颜色小型化为绿色不燃性面漆。
- B) 用印字标识阻值。
- C) 高稳定性金属氧化皮膜。
- D) 高热传导瓷心。
- E) 压合度良好之高信赖性端帽。
- F) 镀锡铜导线 (铜含量 99%)。

MO

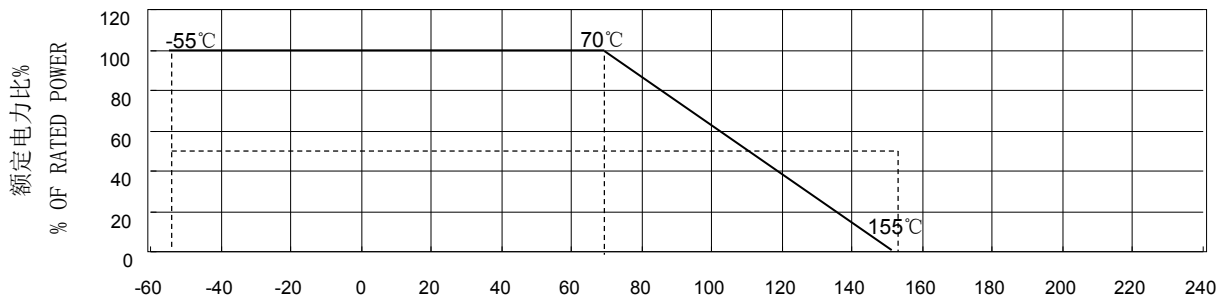
METAL OXIDE FILM RESISTOR

金属氧化皮膜电阻器

电力特性(POWER CHARACTERISTIC)

额定功率 POWER 项目 RATED		5Ws	
ITEM			
最高使用电压 MAX WORKING VOLTAGE		$\sqrt{P.R}$ 或 500V 取较小者 $\sqrt{P.R}$ Or 500V Get the lower voltage)	
最高过负荷电压 MAX OVERLOAD VOLTAGE		2.5X $\sqrt{P.R}$ 或 800V 取较小者 2.5X $\sqrt{P.R}$ Or 800V (Get the lower voltage)	
最高断续过负荷 MAX INTERMITTENCE OVER LOAD VOLTAGE		4X $\sqrt{P.R}$ 或 1000V 取较小者 4X $\sqrt{P.R}$ Or 1000V (Get the lower voltage)	
耐电压 DIELECTRIC WITHSTANDING VOLTAGE		500V (AC)	
阻抗误差值 RESISTANCE TOLERANCE		J \pm 5%	
阻抗值范围 RESISTANCE RANGE (Ω)	MIN	0R1	
	MAX	2.2M	
*注意事项: 0R1~22R 为镀镍皮膜, 不适用作开关及充电器预充电使用, 如有需求请联系我司处理! Note: 0 R1 ~22 R for nickel plating film, not used as a switch and charger charge in advance, if there is demand please contact our company processing!			

负载轻减曲线 POWER DERATING CURVE



性能 CHARACTERISTICS

周围温度 (°C)
AMBIENT TEMPERATURE (°C)

项目 CHARACTERISTICS	规格值 SPECIFICATIONS	测试方法 TEST METHODS JIS 5202
温度系数 TEMPERATURE COEFFICIENT	20R-100K(\pm 350PPM/ $^{\circ}$ C) 100K-500K(\pm 500PPM/ $^{\circ}$ C) 500K 以上(\pm 800PPM/ $^{\circ}$ C) (20R 以下不做要求)	5.2 条件 B
短时间过负荷 SHORT TIME OVERLOAD	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$	5.5 条件 A
断续过负荷 PULSE OVERLOAD	$\Delta R \leq \pm(5\%R_0 + 0.1\Omega)$	5.8 条件 A
焊接耐热性 RESISTANCE TO SOLDERING HEAT	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$	6.4
温度循环 TEMPERATURE CYCLING	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$	7.4 -55 $^{\circ}$ C/155 $^{\circ}$ C
耐湿负荷寿命 LOAD LIFE IN HUMIDITY	$\Delta R \leq \pm(5\%R_0 + 0.1\Omega)$ 1000h	7.9
耐温负荷寿命 LOAD LIFE	$\Delta R \leq \pm(5\%R_0 + 0.1\Omega)$ 1000h	7.10
不燃性 NONINFLAMMABILITY	不可燃烧 NONINFLAMMAB	分别按 5, 10, 16 倍额定功率加交流负荷 5 分钟。Load 5 minutes AC voltage to different times rated power of 5,10 and 16.

RESISTORS CHARACTERISTIC

电阻器特性

特性项目 CHARACTERISTICS	规格值 SPECIFICATIONS	测试方法 TEST METHODS															
直流阻抗值 DC RESISTANCE JIS-C-5202 5.1	J±5%	室温 25°C AT 25°C															
温度特性 TEMPERATURE COEFFICIENT JIS-C-5202 5.2	20R-100K(±350PPM/°C) 100K-500K(±500PPM/°C) 500K 以上(±800PPM/°C) (20R 以下不做要求)	$\frac{R2-R1}{R1(T2-T1)} \times 10^6(\text{PPM}/^\circ\text{C})$ R1:常温(T1)阻抗值 RESISTANCE VALUE AT ROOM TEMPERATURE(T1) R2:常温+100°C(T2)阻抗值 RESISTANCE VALUE AT ROOM TEMPERATURE +100°C(T2)															
耐电压 DIELECTRIC WITHSTANDING VOLTAGE JIS-C-5202 5.7	涂装不可烧损,绝缘不可破坏 NO EVIDENCE OF FLASHOVER MECHANICAL DAMAGE,ARCING OR INSULATION BREAKDOWN.	电阻两端导线置于金属 V 型槽上依特性表 之电压规定印加 60 秒 PUT THE RESISTORS TWO SIDE LEAD WIRE ON THE METAL V-TROUGH LOAD THE VOLTAGE,WHICH IS ACCORDING THE CHARACTERISTICS TABLE FOR 60S.															
温度循环 TEMPERATURE CYCLING JIS-C-5202 7.4	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$	依下表所规定之温度连续 5 次 FIVE TIMES ON THE TEMPERATURE AS THE TABLE. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>步骤 STEP</th> <th>温度 TEMPERATURE</th> <th>放置时间 TIME(MIN)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C±3°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>ROOM TEMP</td> <td>10-15</td> </tr> <tr> <td>3</td> <td>155°C±2°C</td> <td>30</td> </tr> <tr> <td>4</td> <td>ROOM TEMP</td> <td>10-15</td> </tr> </tbody> </table>	步骤 STEP	温度 TEMPERATURE	放置时间 TIME(MIN)	1	-55°C±3°C	30	2	ROOM TEMP	10-15	3	155°C±2°C	30	4	ROOM TEMP	10-15
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1	-55°C±3°C	30															
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不燃性 NONINFLAMMABILITY	不可燃烧 NONINFLAMMABLE	分别按 5.10.16 倍额定功率加交流负荷 5 分钟 Load 5 minutes AC voltage to different times rated power of 5,10 and 16.															

RESISTORS CHARACTERISTIC

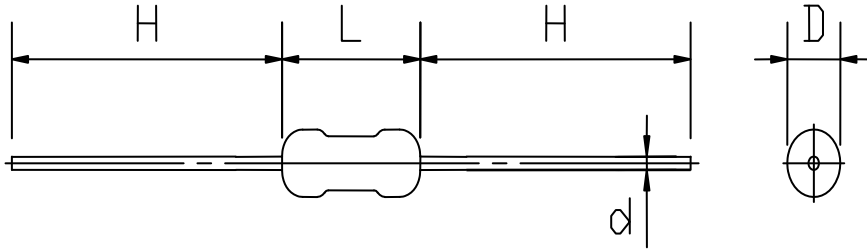
电阻器特性

特性项目 CHARACTERISTICS	规格值 SPECIFICATIONS	测试方法 TEST METHODS						
短时间过负荷 SHORT TIME OVERLOAD JIS-C-5202 5.5	$\Delta R \leq \pm (1\%R_0 + 0.05 \Omega)$	$U = \sqrt{PR} \times 2.5$ 倍的电压或 2 倍元件极限电压(取较小者)PERMANENT RESISTANCE CHANGE AFTER THE APPLICATION OF A POTENTIAL($U = \sqrt{PR}$)OF 2.5 TIME RCWV OR 2TIME COMPONENG MAX VOLTAGE(CHOOSE THE LOWER VOLTAGE)						
断续过负荷 PULSE OVERLOAD JIS-C-5202 5.8	$\Delta R \leq \pm (5\%R_0 + 0.1 \Omega)$	$U = \sqrt{PR} \times 4$ 倍(交流电压)或产品标准最高断续过负荷电压测试 1 秒, 停止 25 秒, 来回 10000 次 .RESISTANCE CHANGE AFTER 10000 CYCLES (1 SECOND ON, 25 SECONDS OFF) AT 4 TIME RCWV($U = \sqrt{PR}$) OR THE MAX PULSE OVERLOAD VOLTAGE OF PRODUCT STANDARD.						
耐湿负荷寿命 LOAD LIFE IN HUMIDITY JIS-C-5202 7.9	$\Delta R \leq \pm (5\%R_0 + 0.1 \Omega)$	温度 $40 \pm 2^\circ\text{C}$, 相对湿度 90-95%于恒温箱中, 加额定直流电压($U = \sqrt{PR}$)或元件极限电压(取较小者)测试 1.5 小时, 停止 0.5 小时连续 1000 小时.RESISTANCE CHANGE AFTER 1000 HRS (1.5 HRS ON, 0.5 HRS OFF)AT RCWV($U = \sqrt{PR}$) OR COMPONENT MAX VOLTAGE(CHOOSE THE LOWER VOLTAGE)IN A HUMIDITY CHAMBER CONTROLLED AT $40^\circ\text{C} \pm 2^\circ\text{C}$ AND 90-95% RELATIVE HUMIDITY.						
耐温负荷寿命 LOAD LIFE JIS-C-5202 7.10	$\Delta R \leq \pm (5\%R_0 + 0.1 \Omega)$	温度 $70 \pm 2^\circ\text{C}$, 恒温箱中, 以额定电压($U = \sqrt{PR}$)或元件极限电压(取较小者)测试 1.5 小时, 停止 0.5 小时测试 1000 小时.PERMANENT RESISTANCE CHANGE AFTER 1000 HOURS OPERATING AT RCWV($U = PR$) OR COMPONENT MAX VOLTAGE(CHOOSE THE LOWER VOLTAGE)WITH DUTY CYCLE OF 1.5 HOURS ON, 0.5 HOURS OFF AT $70^\circ\text{C} \pm 2^\circ\text{C}$.						
耐热性 RESISTANCE TO SOLDERING HEAT JIS-C-5202 6.4	$\Delta R \leq \pm (1\%R_0 + 0.05 \Omega)$	将电阻两端导线浸入锡炉约 3.2 到 4.8MM 依下表规定实施.DIP THE LEADS OF THE RESISTOR INTO SN STOVE THE DEPTH IS 3.2~4.8MM, THE TEMPERATURE AND THE TIME AS THE TABLE. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">TEMPERATURE</th> <th style="text-align: center;">DIP TIME</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">$350^\circ\text{C} \pm 10^\circ\text{C}$</td> <td style="text-align: center;">$3.0 \pm 0.5 \text{ SEC}$</td> </tr> <tr> <td style="text-align: center;">$260^\circ\text{C} \pm 5^\circ\text{C}$</td> <td style="text-align: center;">$10 \pm 1 \text{ SEC}$</td> </tr> </tbody> </table>	TEMPERATURE	DIP TIME	$350^\circ\text{C} \pm 10^\circ\text{C}$	$3.0 \pm 0.5 \text{ SEC}$	$260^\circ\text{C} \pm 5^\circ\text{C}$	$10 \pm 1 \text{ SEC}$
TEMPERATURE	DIP TIME							
$350^\circ\text{C} \pm 10^\circ\text{C}$	$3.0 \pm 0.5 \text{ SEC}$							
$260^\circ\text{C} \pm 5^\circ\text{C}$	$10 \pm 1 \text{ SEC}$							
焊锡性 SOLDERABILITY JIS-C-5202 6.5	焊锡覆盖面积 95%以上 95% COVERAGE MIN.	锡炉温度: $260 \pm 5^\circ\text{C}$ 浸炉时间: $2 \pm 0.5 \text{ SEC}$ TEST TEMPERATURE OF SOLDER: $260 \pm 5^\circ\text{C}$ DWELL TIME IN SOLDER: $2 \pm 0.5 \text{ SEC}$						

RESISTOR DIMENSIONS

电阻器尺寸图

B44 型尺寸 (B44 TYPE DIMENSIONS)



品名 PART NO.	尺寸 (DIMENSIONS MM)			
	$L \pm 1.0$	$D \pm 0.5$	$d \pm 0.05$	$H \pm 1$
5Ws	24	8	0.78	44

PACKING

包装方式

数 型号 TYPE	功率 POWER 量 QTY (PCS)	5Ws
B44	单元包装数 CELL PACKING QTY	200
	整箱数 CARTON QTY	2400