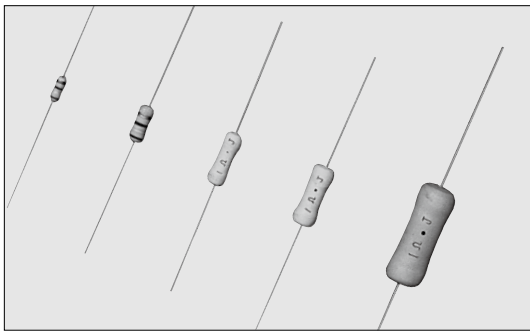


MOS 小型氧化金属膜固定电阻器 Fixed Metal Oxide Film Resistors (Small type)

MOSX 小型金属膜固定电阻器 Fixed Metal Film Resistors (Small type)



外观颜色: 淡紫色 Coating color: Lavender

表示: 颜色码 (0.5W,1W)

文字表示 (2W,3W,5W)

Marking: Color code (0.5W,1W)

Alphanumeric (2W,3W,5W)

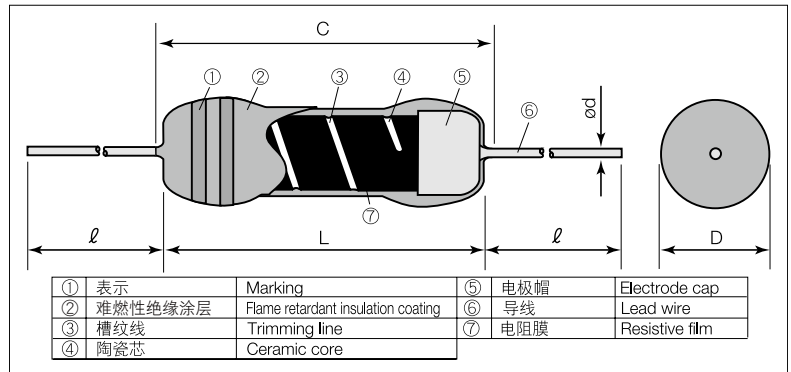
特点 Features

- 是小型功率型电阻器。
- 是难燃性涂层 (相当UL94 V-0品)。
- 可以用于自动插装机。
- 可以进行各种成形加工。
- 高信赖性。
- 对应欧盟RoHS。
- 由于对应表面安装成形, 所以可自动安装。
- Small size power type resistors.
- Flame retardant coating. (Equivalent to UL94 V-0)
- Automatic insertion is applicable.
- Various types of formings are available.
- High reliability.
- Products meet EU-RoHS requirements.
- Automatic mounting machine is applicable by surface mounted device style lead forming.

参考规格 Reference Standards

IEC 60115-4
JIS C 5201-4
EIAJ RC-2138

结构图 Construction



外形尺寸 Dimensions

型号 Type	尺寸 Dimensions (mm)					Weight (g) (1,000pcs)
	L	C Max.	D	d (Nominal)	ℓ	
MOS (X) 1/2	6.2±0.5	7.1	2.5±0.5	0.6	24Min.	250
MOS (X) 1	9.0±1.0	11.1	3.0±0.5			350
MOS (X) 2	12.0±1.0	15.0	4.0±0.5	0.8	30±3	800
MOS (X) 3	15.5±1.0	18.0	6.0±1.0			1,400
MOS (X) 5	24.5±1.0	28.0	9.0±1.0			5,240

※ 引线长度按照成型和编带而改变。
※ Lead length changes depending on taping and forming type.

品名构成 Type Designation

实例 Example

MOS	1	C	T52	A	103	J
品种 Product Code	额定功率 Power Rating	端子表面材质 Terminal Surface Material	二次加工 Taping & Forming	包装 Packaging	公称电阻值 Nominal Resistance	阻值允许偏差 Resistance Tolerance
MOS: 小型氧化金属膜 固定电阻 Fixed Metal Oxide Film Resistors (Small Type) MOSX: 小型金属膜 固定电阻 Fixed Metal Film Resistors (Small Type)	1/2: 0.5W 1: 1W 2: 2W 3: 3W 5: 5W	C: SnCu	参照下述 See table below	A: AMMO包装 A: AMMO R: 卷 R: REEL 空栏: 箱子 Nil: BOX TEB: Plastic embossed (N forming)	F: 4 digits G, J: 3 digits	F: ±1% G: ±2% J: ±5%

预知关于此产品含有的环境有害物质详情 (除EU-RoHS以外), 请与我们联系。
编带细节请参考卷末附录C。

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

For further information on taping, please refer to APPENDIX C on the back pages.

二次加工对应表 Taping & Forming Matrix

型号 Type	轴向编带 Axial Taping				成型编带 Stand-off Axial Taping			VT径向编带 VT Radial Taping		GT径向编带 GT Radial Taping		L成形 L Forming						U成形 U Forming	M成形 M Forming				N成形 N Forming			
	T26	T52	T521	T631	L52	L521	L631	VTP	VTE	GT	GT4	L10A	L12.5A	L15A	L20A	L25A	L30A	L35A	U	M10	M12.5	M15	M20	N14.5	N17	
	○	○	-	-	-	-	-	○	○	○	-	○	-	-	-	-	-	-	-	-	M10F	-	-	-	-	-
MOS (X) 1/2C	○	○	-	-	-	-	-	○	○	○	-	○	-	-	-	-	-	-	-	-	M10F	-	-	-	-	-
MOS (X) 1C	-	○	-	-	○	-	-	○	○	○	-	○	-	○	-	-	-	-	-	○	-	M12.5D	M15F	-	○	-
MOS (X) 2C	-	○	○	-	-	○	-	○	○	○	-	○	-	○	-	-	-	-	-	○	-	-	M15E	M20U	-	○
MOS (X) 3C	-	-	○	-	-	○	-	-	○	○	-	-	-	-	-	-	-	-	-	○	-	-	-	M20E	-	-
MOS (X) 5C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	-	-	-	-	-	-

额定值 Ratings

型号 Type	额定功率 Power Rating	电阻值范围 Resistance Range (Ω)			电阻温度系数 T.C.R. (×10 ⁻⁶ /K)	最高使用电压 Max. Working Voltage	最高过载电压 Max. Overload Voltage	耐电压 Dielectric Withstanding Voltage	编带和包装数/AMMO包装 Taping & Qty/AMMO pack (pcs)			
		F: ±1% (E24+E96)	G: ±2% (E24)	J: ±5% (E24)					T26A	T52A	T521A	T631A
MOS1/2C	0.5W	10~47k	10~47k	10~47k	±300	300V	600V	400V	2,000	2,000	-	-
MOS1C	1W	10~68k	10~68k	-		350V		500V	-	2,000	-	-
MOS2C	2W	10~100k	10~100k	10~100k		350V	700V	-	1,000	1,000	-	-
MOS3C	3W	-				500V	1000V	-	-	500	1,000	-
MOS5C	5W	-	-	-		500V	1000V	800V	-	-	-	-
MOSX1/2C	0.5W	1.0~9.1	0.22~9.1	0.1~9.1		300V	E=√P×R	400V	2,000	2,000	-	-
MOSX1C	1W					500V		-	2,000	-	-	
MOSX2C	2W					500V	-	1,000	1,000	-		
MOSX3C	3W					700V	-	500	1,000	-		
MOSX5C	5W					800V	-	-	-	-		
					800V	-	-	-	-			

额定环境温度 Rated Ambient Temperature: +70°C

使用温度范围 Operating Temperature Range: -55°C~+200°C

额定电压是√额定功率×公称电阻值所算出的值或表中最高使用电压两者中小的值为额定电压。

Rated voltage = √Power Rating×Resistance value or Max. working voltage, whichever is lower.

本样本手册中记载的产品规格如有变更, 恕不一一奉告。订购以及使用之前, 请仔细阅读规格表的内容。

用于车载设备、医疗设备、航空设备以及其它涉及人身安全、或可能引起重大损失的设备上时, 请务必事先与我公司联系。这些产品在这类用途中出现故障或失灵可能导致人身事故或严重损坏。

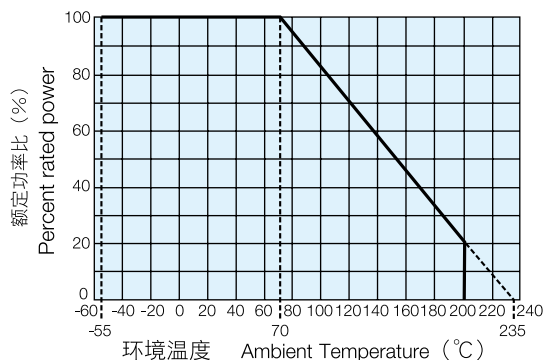
Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment.

Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

Mar. 2013

■ 负荷特性曲线 Derating Curve



在环境温度70℃以上使用时，应按照上图负荷特性曲线，减小额定功率。

For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.

■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements $\Delta R \pm (\% + 0.05 \Omega)$		试验方法 Test Methods
	保证值 Limit	代表值 Typical	
电阻值 Resistance	在规定的允许偏差内 Within specified tolerance	-	测定处应离主体10mm±1mm Measuring points are 10mm±1mm from the end cap.
电阻温度系数 T.C.R.	在规定的允许偏差内 Within specified tolerance	-	室温/100℃以上 Room temperature + 100°C
过载(短时间) Overload (Short time)	± (2% + 0.1Ω)	1	额定电压×2.5倍施加5秒钟。 Rated voltage × 2.5 for 5s
耐焊接热 Resistance to soldering heat	1	0.5	260°C ± 5°C, 10s ± 1s
端子强度 Terminal strength	应当导线没有脱落、端子没有松动 No lead-coming off and loose terminals	-	Twist 360°, 5 times
温度突变 Rapid change of temperature	1	0.5	-55°C (30min.) / +155°C (30min.) 5 cycles
耐湿负荷 Moisture resistance	± (5% + 0.1Ω)	2.5	40°C ± 2°C, 90%~95%RH, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle
在70℃时的耐久性 Endurance at 70°C	± (5% + 0.1Ω)	2.5	70°C ± 2°C, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle
耐溶剂性 Resistance to solvent	应当外观没有异常，表示容易辨认 No abnormality in appearance. Marking shall be easily legible	-	进行异丙醇的超声波清洗2分钟 Ultrasonic washing with Isopropyl alcohol for 2 min. 输出 Power : 0.3W/cm ² , 频率 f : 28kHz, 温度阻燃性 Temp : 35°C ± 5°C
难燃性 Flame retardant	应不发火和自动发火。 No evidence of flaming or self-flaming.	-	耐火性：把试验火焰在主体上烧15秒钟，取下15秒钟，5次循环。 Flame test : The test flame shall be applied and removed for each 15s respectively to repeat the cycle 5 times. 过载耐燃性：把相当于额定功率2倍、4倍、8倍、16倍、32倍的电力(AC)分别施加1分钟直至断线。 但施加电压不应超过最高使用电压的4倍。 Overload flame retardant : Power (AC) corresponding to 2, 4, 8, 16 and 32 times the power rating shall be applied for each 1min. until disconnection occurs. However the applied voltage shall not exceed the value of 4 times the maximum operating voltage.

高功率型电阻器
High Power Type Resistors

■ 使用注意事项 Precautions for Use

- 保护漆颜色，标示，外形尺寸根据生产场所的不同有区别，请确认产品规格书。
- 由于包装涂层是难燃性特种涂料，对外部冲击比较脆弱，使用时应注意。清洗应在最小限度。清洗后涂层膜比较弱，因此在充分干燥前在涂层膜上不要施加外力。由于干燥后才恢复原来的强度，因此应注意在清洗后约20分钟内，不施加外力到电阻的涂层膜上。
- Be careful to handle these resistors because outer coatings are comparatively weak to outer shock due to flameproof special coats. Please wash them to a minimum. No external force is given to the coating films until they are well dried because the coating films become weaker right after washing. The original strength will be returned after they are dried, so please pay attention not to apply any external force onto the coating film of resistors for 20 minutes after drying. Especially no PC boards shall be piled up.
- Coating color, marking and dimensions are different depending on the manufacturing base. Verify them on the delivery specification.

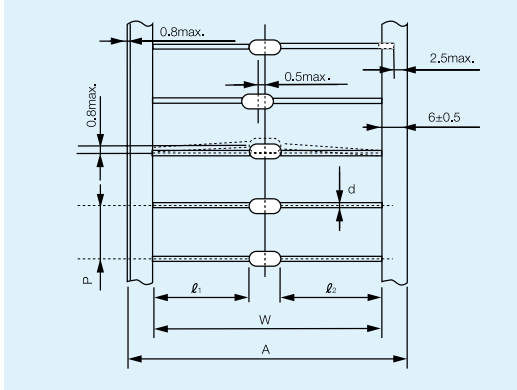
POWER TYPE

MOS 小型氧化金属膜固定电阻器 Fixed Metal Oxide Film Resistors (Small type)

MOSX 小型金属膜固定电阻器 Fixed Metal Film Resistors (Small type)

■ 二次加工 Secondary Processed Products (mm)

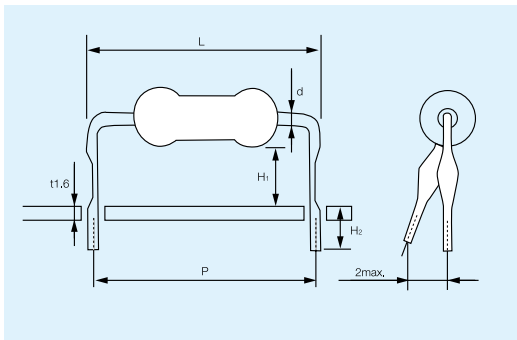
轴向编带 Axial Taping



型号 Type	W	A±1	20节距的累计 20 Pitch Accumulation	P	d (公称值) (Nominal)
MOS	26 ⁺¹ ₋₀	—	100±2	5±0.3	0.6
MOSX					
1/2CT26	52±1	65	101.6±2	5.08±0.38	
1/2CT52					
1CT52					
1CT528					
2CT52					
3CT521	63±1	—	203.2±3	10.16±0.8	—
3CT631					

$|\ell_1 - \ell_2| = 1.0 \text{ max.}$

L成形 L Forming

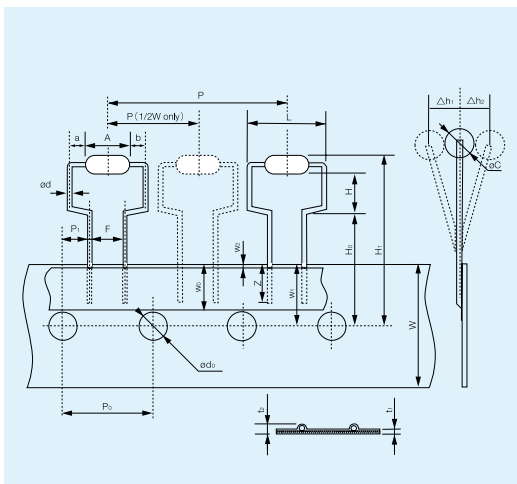


型号 Type	P±1	H ₁ ±1	H ₂ ±1	d (公称值) (Nominal)	L max.	基本包装数量 Standard Quantity (pcs. / box)
MOS	10.0	5.3	4.0	0.6	17.5	2,000
MOSX						
1/2CL10A						
1CL12.5A						
1CL15A						
2CL15A				0.8	17.5	1,000
2CL20A						
3CL20A						
3CL25A						
5CL30A						
5CL35A						

基板孔径 1/2W: $\phi 0.8$

Substrate hole dia 1W and over: $\phi 1.0$

GT径向编带 GT Radial Taping



品种 Product Code	MOS • MOSX					
额定值 Power Rating	1/2C	1C		2C		3C
型号 Type	GT	GT	GT4	GT	GT4	GT
A	6.2±0.5	9.0±1.0		12.0±1.0		15.5±1.0
L	11.5 Max.	14.5 Max.		17.5 Max.		21.0 Max.
ϕC	2.5±0.5	3.0±0.5		4.0±0.5		6.0±1.0
ϕd (nominal)	0.6		0.8			
H	6.5 ^{+1.0} ₋₀	6.5 ^{+1.0} ₋₀	4.0 ^{+1.0} ₋₀	7.5 ^{+1.0} ₋₀	4.0 ^{+1.0} ₋₀	8.5 ^{+1.0} ₋₀
H ₀	16.0±0.5		19.0±0.7			
H ₁ (nominal)	28 Max.	30 Max.	28 Max.	32 Max.	29 Max.	34 Max.
P	12.7±1.0		30.0±1.0			
P ₀	12.7±0.3		15.0±0.3			
P ₁	3.85±0.7		3.75±0.5			
F	5.0±0.5		7.5 ^{+0.8} _{-0.2}			
W			18.0±0.5			
W ₀			5.0 Min.			
W ₁			9.0±0.5			
W ₂			1.0 Max.			
ϕD_0			4.0±0.2			
t ₁			0.6±0.3			
t ₂			1.7 Max.			
$\Delta h_1, \Delta h_2$			2.0 Max.			
a-b			1.0 Max.			
Z			4.0 Min.			

基板孔径 Recommendable PCB hole : $\phi 0.8$

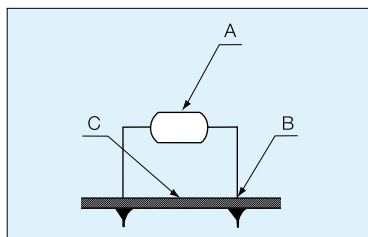
基板插入节距 PCB inserted pitch : 5.0

1/2W, 2W, 3W : $\phi 1.0$

1W, 2W, 3W : 7.5

■ 表面温度上升 Surface Temperature Rise

L成形 L Forming



测定方法 Test methods
 热电偶 Thermo couple
 IC Wire $\phi 0.1$
 YEW-2575
 基板 Substrate
 ICB-97
 1.6×95×138
 铜箔 Copper foil ?2

