



## 厚膜片式网络电阻器

### THICK FILM CHIP NETWORK RESISTOR

#### ■ 特长 Features

- 体积小、重量轻。 • Miniature and light weight.
- 适应再流焊与波峰焊。 • Suit for reflow and wave flow solder.
- 电性能稳定，可靠性高。 • Stable electrical capability, high reliability.
- 装配成本低，并与自动装贴设备匹配。 • Low assembly cost, suit for automatic SMT equipment.
- 机械强度高、高频特性优越。 • Superior mechanical and frequency characteristics.
- 符合 ROHS 指令要求 • According with RoHS standard



#### ■ 品名构成 Type Designation

##### ● RCM 系列 RCM Series (8P4R、4P2R)

RCM	L	08	W	103	J	T				
产品代号 Product Code	型号代号 Type Code		端子数 Terminal Number	端子形状 Terminal Style		电阻值代号 Resistance Value Code	电阻值误差精度代号 Resistance Tolerance Code		包装方法代号 Packing Style Code	
厚膜片式网络电阻器 Thick Film Chip Network Resistor	代号 Code	型号 Type	04	代号 Code	端子形状 Terminal Style	三位数 (E-24 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. eg: 103=10K Ω	代号 Code	误差精度 Tolerance	代号 Code	包装方法 Packing Style
	T	0402 型 0402 Type	08	W	凸电极直角 convex type with corner		F	±1%	T	编带包装 Tape & Reel
	L	0603 型 0603 Type		V	凸电极缺角 convex type without corner		G	±2%	B	塑料盒包装 Bulk Case
C	1206 型 1206 Type					J (跨接电阻 chip jumper)	≤50m Ω	C	塑料袋包装 Case	

##### ● ML 系列 ML Series (10P8R)

ML	06	10		R	103	J	T			
产品代号 Product Code	型号代号 Type Code		端子数 Terminal Number	端子形状 Terminal Style		电路结构代号 Circuit Code	电阻值误差精度代号 Resistance Tolerance Code		包装方法代号 Packing Style Code	
厚膜片式网络电阻器 Thick Film Chip Network Resistor	代号 Code	型号 Type	10	代号 Code	端子形状 Terminal Style	R  S	代号 Code	误差精度 Tolerance	代号 Code	包装方法 Packing Style
	06	1206 外型 1206 Type		无表示	凸电极直角 convex type with corner		J	±5%	T	编带包装 Tape & Reel
				V	凸电极缺角 convex type without corner		B		B	塑料盒包装 Bulk Case
								C	塑料袋包装 Case	

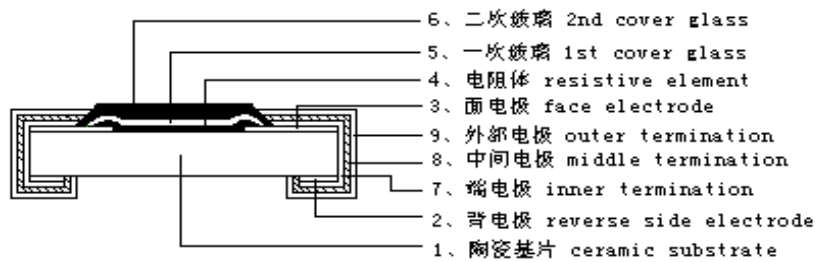


■ 参考标准 Reference Standard

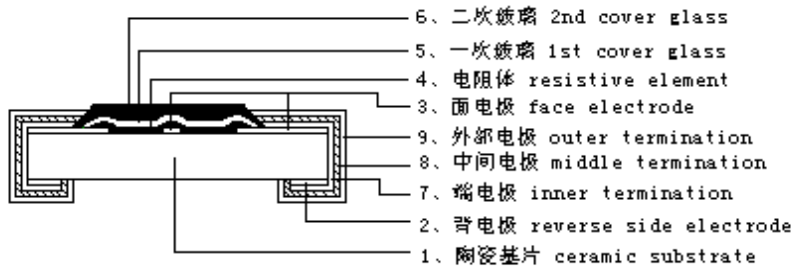
- GB/T 5729-2003
- GB/T 9546-1995
- JIS C 5223-1995
- JIS C 5201-1998
- JIS C 5202-1990

■ 结构图 Constructi on

● RCMT/RCML/RCMC:

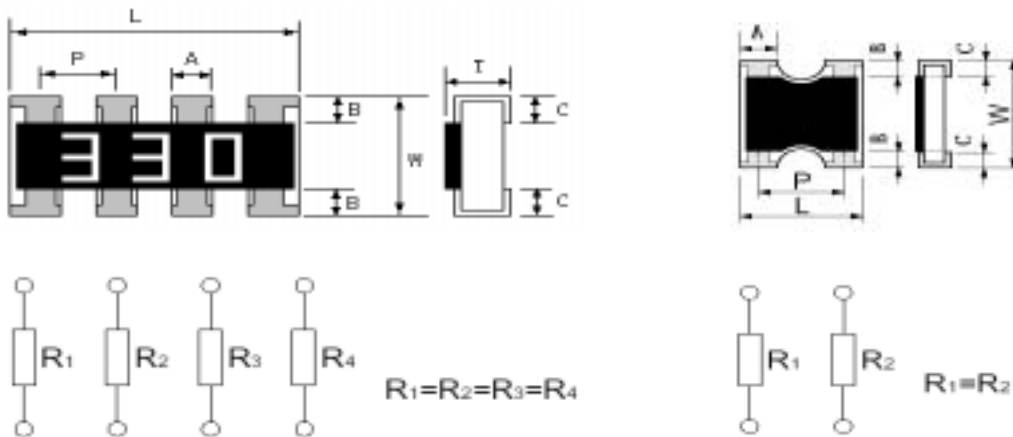


● MLO6:



■ 规格尺寸及等效电路 Dimensions and equivalent circuit

● RCMT/RCML/RCMC:

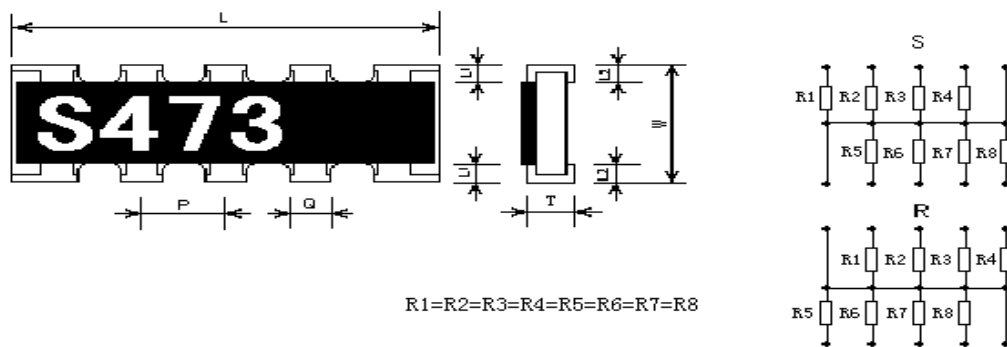




单位 unit: mm

类型 Type	L	W	T	P	A	B	C	端子形状 Terminal Style	
								常规 Normal	非常规 Special
RCMT04	1.00±0.10	1.00±0.10	0.35±0.10	0.65±0.05	0.33±0.10	0.15±0.10	0.25±0.10	W	/
RCMT08	2.00±0.10	1.00±0.10	0.45±0.10	0.50±0.05	0.30±0.15	0.15±0.10	0.25±0.20	W	/
RCML08	3.20±0.15	1.60±0.15	0.50±0.10	0.80±0.10	0.50±0.15	0.30±0.20	0.30±0.15	W	V
RCMC08	5.08±0.20	3.10±0.20	0.60±0.10	1.27±0.10	0.80±0.15	0.50±0.20	0.50±0.15	V	/

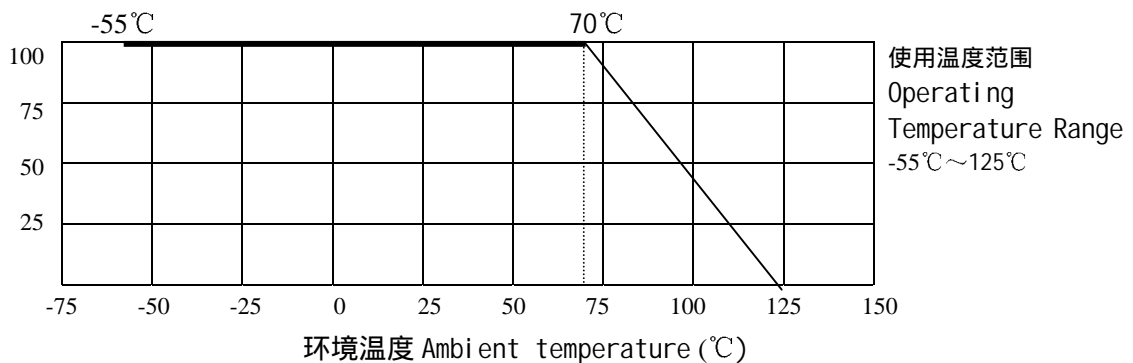
●ML06:



单位 unit: mm

类型 Type	L	W	T	L1	L2	P	Q	端子形状 Terminal Style	
								常规 Normal	非常规 Special
ML06	3.20±0.20	1.60±0.15	0.55±0.10	0.30±0.15	0.30±0.15	0.64±0.10	0.32±0.10	凸电极直角	V

■负荷下降曲线 Derating Curve



当电阻使用的环境温度超过 70°C 时，其额定负荷（额定功率或额定电流）按上述曲线下降。

For resistors operated in ambient over 70°C, rated load (power rating or current rating) shall be derated in accordance with the above figure.



■ 额定值 Ratings

项 目 Item	RCMT04	RCMT08	RCML08	RCMC08	ML06
额定功率 Power Rating	1/16W		1/16W	1/8W	1/32W
最大工作电压 Max. Working Voltage	50V		50V	200V	25V
最大过负荷电压 Max. Overload Voltage	100V		100V	400V	50V
跨接电阻额定电流 Jumper Rated Current	1A		1A	2A	/
跨接电阻最大过负荷电流 Jumper Max. Overload Current	2A		3A	5A	/
电阻温度系数 Resistance Temperature Coefficient	10Ω ≤ R ≤ 1MΩ : ±200ppm/°C 1Ω ≤ R < 10Ω, 1MΩ < R ≤ 10MΩ : ±400ppm/°C		10Ω ≤ R ≤ 1MΩ : ±100ppm/°C 1Ω ≤ R < 10Ω, 1MΩ < R ≤ 10MΩ : ±250ppm/°C		±250ppm/°C
阻值范围 Resistance Range	0Ω (跨接电阻 chip jumper), 1Ω~10MΩ (E-24 系列 series)		0Ω (跨接电阻 chip jumper), 1Ω~10MΩ (E-24 系列 series)		33Ω~470KΩ (E-24 系列 series)
阻值误差精度 Resistance Tolerance	±1%, ±2%, ±5%, ±10%, 跨接电阻 chip jumper: ≤50mΩ		±1%, ±2%, ±5%, ±10%, 跨接电阻 chip jumper: ≤50mΩ		±5%
使用温度范围 Operating Temperature Range	-55°C~125°C				
额定温度 Rated Temperature	+70°C				

注: 额定电压 =  $\sqrt{\text{额定功率} \times \text{标称电阻值}}$  或最大工作电压两者中的较小值。

Note: Rated Voltage =  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$  or Max. Working Voltage, whichever is lower.

■ 特性 Characteristics

项目 Item	标准 Specifications	测试方法 (JIS C 5202 标准) Test Methods (JIS C 5202)
端头强度 Bending Strength	无可见损伤 No mechanical damage $\Delta R \leq \pm (1.0\%R + 0.05\Omega)$ 跨接电阻 Chip jumper: $R \leq 50m\Omega$	弯曲速度 (Speed): 1mm/s 弯曲距离 (Bending Distance): 3mm
电阻温度系数 T.C.R	在规定值内 within specified T.C.R	测定范围: -55°C~+125°C Measure between -55°C~+125°C
温度循环 Temperature Cycling	无可见损伤 No mechanical damage $\Delta R \leq \pm (1.0\%R + 0.05\Omega)$ 跨接电阻 Chip jumper: $R \leq 50m\Omega$	-55°C (30 分钟) ~ 常温 (5 分钟) ~ 125°C (30 分钟) 5 个循环 -55°C (30min) ~ normal temperature (5min) ~ 125°C (30min) 5 cycles
短时间过负载 Short Time Overload	无可见损伤 No mechanical damage $\Delta R \leq \pm (2.0\%R + 0.05\Omega)$ 跨接电阻 Chip jumper: $R \leq 50m\Omega$	2.5 倍额定电压或最大过负荷电压 (取最小者) 保持 5 秒 2.5 × Rated voltage or Max. Overload Voltage whichever is lower for 5 seconds
稳态湿热 Steady state humidity	无可见损伤 No mechanical damage $\Delta R \leq \pm (3.0\%R + 0.1\Omega)$ 跨接电阻 Chip jumper: $R \leq 100m\Omega$	40°C ± 2°C 90%~95%RH 1000 小时 40°C ± 2°C 90%~95%RH 1000h



续上表

70°C耐久性 Load Life	无可见损伤 No mechanical damage $\Delta R \leq \pm (3.0\%R + 0.1 \Omega)$ 跨接电阻 Chip jumper: $R \leq 100m \Omega$	70°C ± 2°C, 1000 小时, 额定电压通 1.5 小时/断 0.5 小时 70°C ± 2°C, 1000h, Rated voltage 1.5h on/0.5h off
上限类别温度耐久性 Endurance at upper temperature	无可见损伤 No mechanical damage $\Delta R \leq \pm (3.0\%R + 0.1 \Omega)$ 跨接电阻 Chip jumper: $R \leq 100m \Omega$	125°C ± 2°C 1000h
耐溶剂性 Resistance to Solvent	无可见损伤 No mechanical damage $\Delta R \leq \pm (1.0\%R + 0.05 \Omega)$ 跨接电阻 Chip jumper: $R \leq 50m \Omega$	浸入三氯乙烯 10h ± 1h Dip in chloroethylene for 10h ± 1h.
绝缘电阻 Insulation Resistance	1000MΩ Min	在电极与基片间施加 100V 直流电压, 保持 1 分钟, 然后测绝缘电阻值。 Apply DC 100V between substrate and termination for 1 minute, then check insulation resistance.
耐焊接热 Resistance to Soldering Heat	无可见损伤 No mechanical damage $\Delta R \leq \pm (1.0\%R + 0.05 \Omega)$ 跨接电阻 Chip jumper: $R \leq 50m \Omega$	260°C ± 5°C 10s ± 1s
可焊性 Solderability	可焊面积 ≥ 95% 95% Cover Min	235°C ± 5°C 2s ± 0.5s
附着力 Adhesion	外观无可见损伤 No mechanical damage	施加力 5N 10s ± 1s Applying 5N 10s ± 1s

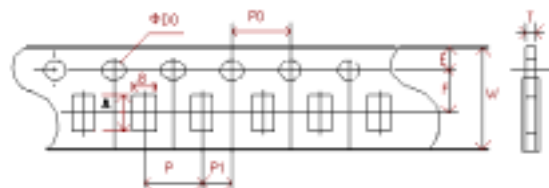
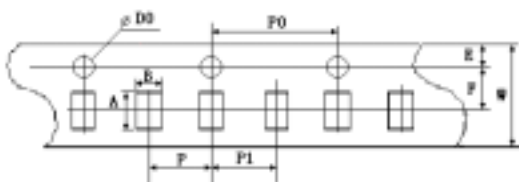
■ 包装 Packaging

● 编带包装 Tape and reel

\* 纸带编带 Paper taping

RCMT04、RCMT08

RCML08、ML06



单位 Unit: mm

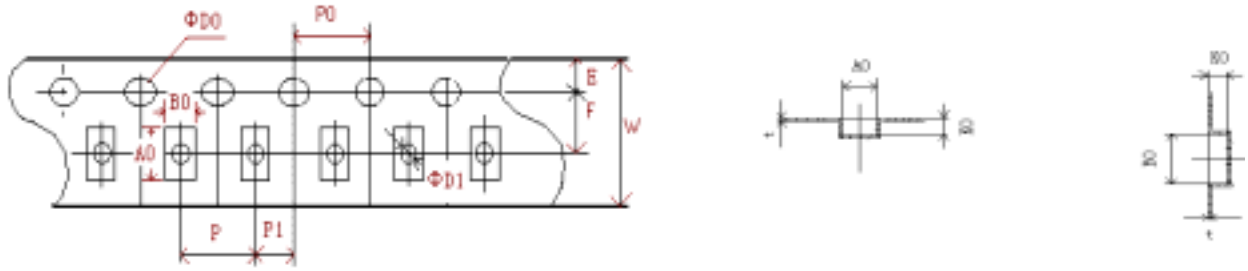
类型 Type	A	B	W	F	E
RCMT04	1.20 ± 0.05	1.20 ± 0.05	8.0 ± 0.20	3.5 ± 0.05	1.75 ± 0.1
RCMT08	2.20 ± 0.10	1.20 ± 0.05	8.0 ± 0.20	3.5 ± 0.05	1.75 ± 0.1
RCML08	3.50 ± 0.2	1.90 ± 0.2	8.0 ± 0.20	3.5 ± 0.05	1.75 ± 0.1
ML06	3.50 ± 0.2	1.90 ± 0.2	8.0 ± 0.20	3.5 ± 0.05	1.75 ± 0.1

单位 Unit: mm

类型 Type	P	P0	P1	D0	T
RCMT04	2.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	0.45 ± 0.05
RCMT08	2.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	0.45 ± 0.05
RCML08	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	0.75 ± 0.1
ML06	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	0.75 ± 0.1



\* 塑料带编带 Embossed tapping



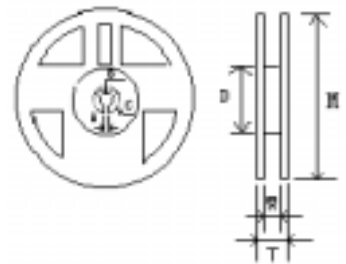
单位 Unit: mm

类型 Type	A0	B0	W	F	E	t
RCMC08	5.40±0.10	3.40±0.10	12.00±0.10	5.50±0.10	1.75±0.10	0.24±0.05
	P	P0	P1	D0	D1	K0
	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.10	1.50±0.10	0.81±0.10

\* 卷盘 Reel

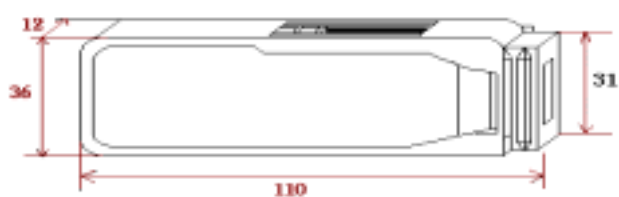
单位 unit: mm

类型 Type	M	W	T	A	B	C	D
RCMT04/RCMT08/RCML08/ML06	178 ±2.0	9.5 ±1.0	12.5 ±1.5	2.0 ±0.5	13.0 ±0.5	21.0 ±0.5	58.0 ±2.0
RCMC08	178 ±2.0	13.0 ±0.5	15.5 ±1.5	2.0 ±0.5	13.0 ±0.5	21.0 ±0.5	57.0 ±2.0



● 塑料盒包装 Bulk case

单位 Unit: mm



■ 包装数量 Packaging quantity

包装方法 Packaging style	编带 Tape and reel			塑料盒 Bulk case		塑料袋散装 Case	
类型 Type	RCMT04 RCMT08	RCML08 ML06	RCMC08	RCML08 ML06	RCMC08	RCMT04/RCMT08 RCML08/ML06	RCMC08
数量 Quantity (PCS)	10000	5000	4000	5000	1000	≤10000	≤4000

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