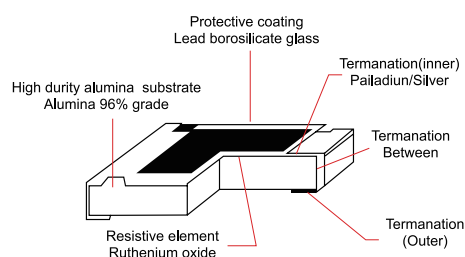


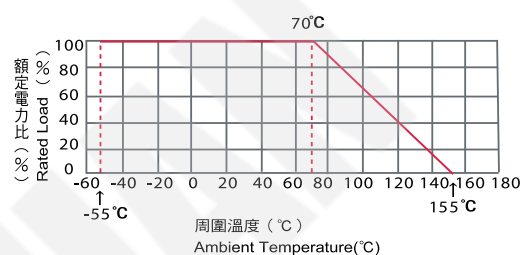
特點 Features

- 精度低至 $\pm 0.1\%$
Tolerance to $\pm 0.1\%$
- 低溫度係數
Low TCR to $\pm 5\text{PPM}/^\circ\text{C}$
- 適用無鉛回流焊及波峰焊制程
Suit for reflow and wave soldering
- 符合 RoHS2.0 標準和 REACH 標準
RoHS2.0 compliant and REACH compliant

結構圖 Construction



負載遞減曲線 Power Derating Curve

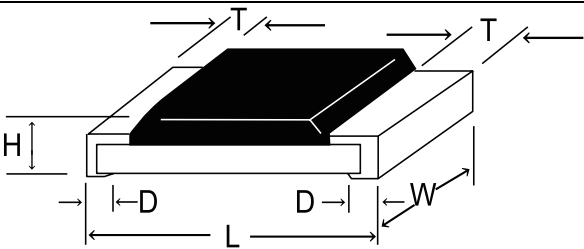


規格 Specifications

型 式 Type	定格電力 Rated power	最高使用電壓 Maximum working voltage	最高過負荷電壓 Maximum overload voltage	耐電壓 Dielectric Withstanding Voltage	溫度係數 T.C.R. (PPM/ $^\circ\text{C}$)	阻值範圍(Ω) Resistance Range(Ω)		使用溫度範圍 Operating Temperature
						$\pm 0.1\%$	$\pm 0.25\%$ $\pm 0.5\%$	
0402	1/16W	25V	50V	100V	± 5	100~2K	100~2K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	50~12K	50~12K	
					± 25	10~332K	10~332K	
					± 50	10~332K	10~332K	
0603	1/10W	75V	150V	300V	± 5	100~4K	100~4K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	10~50K	10~50K	
					± 25	4.7~1M	1~1M	
					± 50	4.7~1M	1~1M	
0805	1/8W	150V	300V	500V	± 5	100~15K	100~15K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	10~100K	10~100K	
					± 25	4.7~2M	1~2M	
					± 50	4.7~2M	1~2M	
1206	1/4W	200V	400V	500V	± 5	100~15K	100~15K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	10~200K	10~200K	
					± 25	4.7~3M	1~3M	
					± 50	4.7~3M	1~3M	
1210	1/3W	200V	400V	500V	± 5	100~15K	100~15K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	10~200K	10~200K	
					± 25	4.7~3M	1~3M	
					± 50	4.7~3M	1~3M	
2010	1/3W 1/2W	200V	400V	500V	± 5	100~25K	100~25K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	50~200K	50~200K	
					± 25	4.7~3M	1~3M	
					± 50	4.7~3M	1~3M	
2512	3/4W	200V	400V	500V	± 5	100~25K	100~25K	-55 $^\circ\text{C}$ ~155 $^\circ\text{C}$
					± 10	50~200K	50~200K	
					± 25	4.7~3M	1~3M	
					± 50	4.7~3M	1~3M	

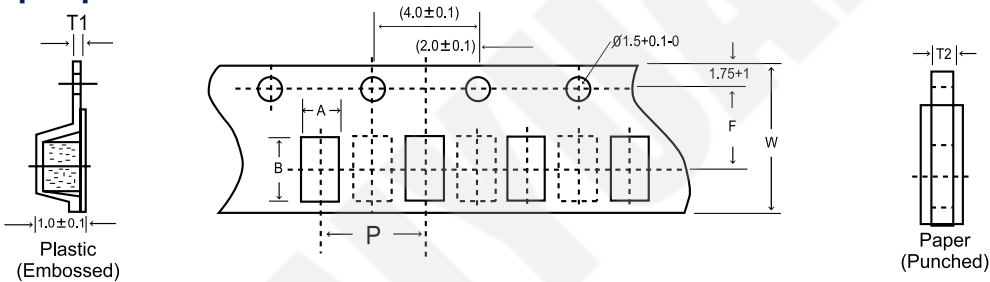
高精密薄膜晶片電阻器

尺寸 Dimension



型式 Type	L	W	H	T	D
0402	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20
0805	2.00±0.15	1.25+0.15/-0.10	0.55±0.10	0.30±0.20	0.40±0.20
1206	3.10±0.15	1.55+0.15/-0.10	0.55±0.10	0.40±0.20	0.45±0.20
1210	3.10±0.10	2.60±0.20	0.55±0.10	0.40±0.20	0.45±0.20
2010	5.00±0.10	2.50±0.20	0.55±0.10	0.50±0.25	0.50±0.20
2512	6.35±0.10	3.20±0.20	0.55±0.10	0.50±0.25	0.50±0.20

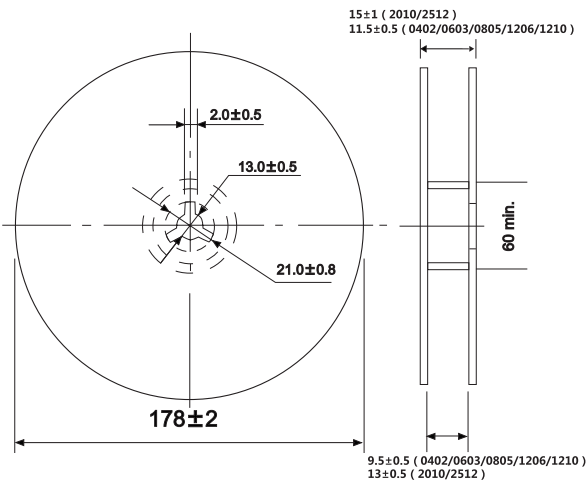
紙帶尺寸 Tape Specification



單位 Unit : mm

型式 Type	A	B	W	F	T1	T2	P
0402	0.65±0.1	1.15±0.1	8.0±0.2	3.5±0.05	-----	0.45±0.1	4.0±0.05
0603	1.10±0.1	1.9±0.1	8.0±0.2	3.5±0.05	-----	0.6±0.1	4.0±0.05
0805	1.65±0.2	2.4±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
1206	2.0±0.2	3.6±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
1210	2.8±0.2	3.5±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
2010	2.9±0.2	5.5±0.2	12.0±0.1	5.5±0.5	0.2±0.05	1.0±0.1	4.0±0.05
2512	3.6±0.2	6.9±0.2	12.0±0.1	5.5±0.5	0.2±0.05	1.0±0.1	4.0±0.05

塑膠圓盤尺寸 Reel Dimensions



單位 Unit : mm

高精密薄膜晶片電阻器

品名構成 Product Identification

TSMC

種類

Type

0805

額定功率

Power Rating

0402	0603	0805	1206
1210	2010	2512	

10K

公稱電阻值

Nominal Resistance Value

E-96 Series

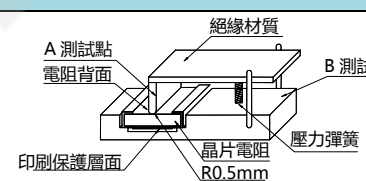
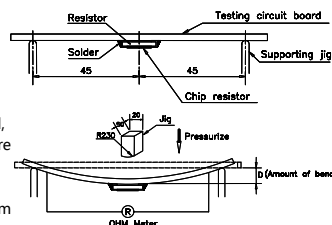
F

電阻值容許誤差

Resistance tolerance

B	C	D
±0.1%	±0.25%	±0.5%

特性 Characteristics

特性項目 Item	規格值 Performance	試驗方法(依據 JIS C 5201-1) Test Methods(Conform to JIS C 5201-1)
溫度係數 Temperature Coefficients	規格值內 Within specified T.C.R	4.8 項參照 Comply with 4.8 $\frac{R_1 - R_0}{R_0(T_1 - T_0)} \times 10^6 (\text{PPM}/^\circ\text{C})$ R ₀ : 室溫(T ₀)所測量之電阻值。 R ₁ : 室溫+100°C(T ₁)後所測量之電阻值。 R ₀ : Resistance value at room temp(T ₀). R ₁ : Resistance value at room temp plus 100°C(T ₁).
短時間過負荷 Short-time Overload	ΔR ≤ ±(0.5%+0.05Ω)	4.13 項參照 Comply with 4.13 額定電壓 ×2.5 倍 5 秒， 不可超過最高過負荷電壓。 Rated voltage ×2.5 times 5s, But not to exceed maximum overload voltage.
耐濕負荷壽命 Load Life in Humidity	ΔR ≤ ±(0.5%+0.05Ω)	4.24 項參照 Comply with 4.24 40±2°C，濕度 90~95%，1000 小時 定格電壓(90 分鐘 ON，30 分鐘 OFF)。 40±2°C, 90 to 95%RH, 1000h Rated voltage (90 min ON, 30 min OFF).
絕緣電阻 Insulation Resistance	10 ⁹ MΩ 以上。 10 ⁹ MΩ or more.	4.6 項參照 Comply with 4.6 施加直流電壓 100V 60 秒。 Resistor shall be tested at DC 100V for 60 Seconds. 
耐電壓 Dielectric Withstanding Voltage	無電弧放電、燒損及絕緣破壞等異狀。 No evidence of flashover mechanical damage, arcing or insulation breakdown.	4.7 項參照 Comply with 4.7 施加個別規定之交流電壓 60 秒。 Resistor shall be tested at AC potential respectively for 60 seconds.
彎折性 Bending Strength	ΔR ≤ ±(0.2%+0.05Ω)	4.33 項參照 Comply with 6.1 將晶片電阻焊於測試 PC 板上，在測試板中央 施力下壓，於負荷下量測阻值變化率。 下壓深度(D): 0402&0603&0805=5mm 1206&1210=3mm 2010&2512=2mm Let the chip resistor on the measure board, push inflection at the middle of measure board, and measure the resistance change between pre-and-post on loading. Push depth(D): 0402&0603&0805=5mm 1206&1210=3mm 2010&2512=2mm 
焊錫附著性 Solderability	電極至少 95%以上新錫覆蓋。 Electrode with new solder by 95% at least.	4.17 項參照 Comply with 4.17 焊錫溫度: 245±5°C 浸錫時間: 3~5 秒 Test temperature of solder: 245±5°C Dipping time in solder: 3~5 seconds
溫度循環 Temperature Cycle	ΔR ≤ ±(0.5%+0.05Ω)	4.19 項參照 Comply with 4.19 低溫側: -55°C/30 分，室溫: 3~5 分鐘 高溫側: +155°C/30 分，室溫: 3~5 分鐘 5 回 Low side: -55°C/30min, Room temp: 3 to 5min High side: +155°C/30min, Room temp: 3 to 5min 5cycles
負荷壽命 Load Life	ΔR ≤ ±(0.5%+0.05Ω)	4.25 項參照 Comply with 4.25.1 70±3°C，1000 小時，定格電壓(90 分鐘 ON，30 分鐘 OFF)。 70±3°C, 1000h, Rated voltage (90 min ON, 30 min OFF).
焊錫耐熱性 Resistance to Soldering Heat	0.1%, 0.25%: ΔR ≤ ±(0.2%+0.05Ω) 0.5%: ΔR ≤ ±(0.5%+0.05Ω)	4.18 項參照 Comply with 4.18 260±5°C，10±1.0 秒，試驗後放置半小時。 260±5°C, 10±1.0 seconds, After test leave for 0.5h.