

### ■ 合金超低阻值片式固定電阻器

#### Metal Strip Low Ohmic Chip Fixed Resistor

#### ● 特點 Features

- \* 最高功率可達4W  
The highest power is up to 4W.
- \* 最低TCR為 ± 50 ppm/°C  
The lowest TCR is ± 50 ppm/°C.
- \* 適應再流焊與波峰焊  
Suit for re-flow and wave flow solder.
- \* 裝配成本低, 并與自動裝貼設備匹配  
Low assembly cost, suit for automatic SMT equipment.
- \* 適于作電流探測用電阻器, 如電源電路、發動機用電路等  
Current detecting resistors for power supply, motor circuits, etc
- \* 機械强度高、高頻特性優越  
Superior mechanical and frequency characteristics
- \* 符合RoHS指令要求  
Compliant with RoHS directive



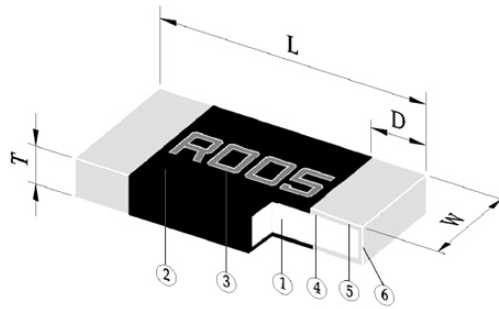
#### ● 應用領域 Application

開關電源、過電流保護、電壓調節器、電源轉換器、充電器、汽車引擎控制器、便攜式設備等。  
Switching Power Supply, Over Current Protection, Voltage Regulation Module (VRM), DC-DC Converter, Charger, Automotive Engine Control, Portable Devices etc.

#### ● 品名構成 Type Designation

MG	N		12		K		R002	F		T	
產品代號 Product Code	額定功率系列代號 Power Rating Series Code		型號代號 Type Code		電阻溫度系數代號 T.C.R Code		電阻值代號 Resistance Value Code	電阻值誤差精度代號 Resistance Tolerance Code		包裝方式代號 Packaging Style Code	
合金超低阻值片式固定電阻器 Metal Strip Low Ohmic Chip Fixed Resistor	代號 Code	額定功率系列 Power rating series	代號 Code	型號 Type	代號 Code	T.C.R (ppm/°C)	單位Ω, 小數點用R表示; 單位mΩ, 小數點用M表示; Units Ω: Decimal point should be expressed "R"; Units mΩ: Decimal point should be expressed by 'M'.  例如Example: R001=0.001Ω R004=0.004Ω R020=0.020Ω 6M50=6.50mΩ	代號 Code	誤差精度 Tolerance	代號 Code	包裝方法 Packaging Style
	L	2W	12	2512	H	±50		D	±0.5%	T	編帶包裝 Tape & Reel
	N	3W	2725	2725	X	±75		F	±1%		
	U	4W	2728	2728	K	±100		G	±2%		
				J	±150	J	±5%				
				L	±250						

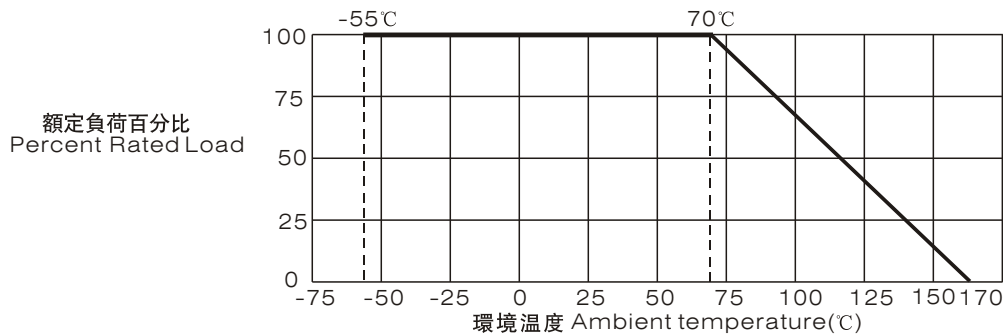
### • 规格尺寸 Dimensions



- ①合金层 Alloy Plate
- ②保护 Overcoat
- ③标记 Marking
- ④铜层 Internal Electrode(Cu)
- ⑤Ni层 Barrier Layer(Ni)
- ⑥Sn层 Solder Plating(Sn)

型号 Type	L (mm)	W (mm)	T (mm)	D (mm)	备注
2512	6.45±0.20	3.20±0.20	0.80±0.15	0.95±0.30	/
	6.45±0.20	3.20±0.20	0.80±0.15	1.65±0.30	適用R001~R004,0M50
2725	6.80±0.20	6.40±0.20	1.20±0.20	1.25±0.20	/
	6.80±0.20	6.40±0.20	1.20±0.20	1.70±0.20	適用0M25、0M50、R001
2728	6.80±0.20	7.20±0.20	1.00±0.20	1.20±0.20	/

### • 负荷下降曲线 Derating Curve



使用溫度範圍：  
Operating  
Temperature  
Range:  
-55°C~170°C

注：當電阻使用的環境溫度超過70°C時，其額定負荷(額定功率)按上述曲線下降。

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

### • 額定值 Ratings

型号 Type	70°C下額定功率 Rating Power at 70°C (W)	元件極限電流 Limiting Element Current (A)	最大過負荷電流 Max.Over Load Current (A)	阻值範圍 Resistance Range
2512	2	63.25	126.49	0.5mΩ ≤ R ≤ 50mΩ
	3	77.46	154.92	0.5mΩ ≤ R ≤ 10mΩ
2725	4	126.49	252.98	0.25mΩ ≤ R ≤ 3mΩ
2728	4	28.28	56.57	5mΩ ≤ R ≤ 33mΩ

注Note:

- 1、電流為直流或交流有效值。  
Current of DC or AC RMS value.
- 2、額定電流=√P/R 或元件極限電流兩者中的較小值。  
I= √P/R or Limiting element current whichever is lower.  
I: 額定電流 Rated current(A)  
P: 額定功率 Rated power(W)  
R: 標稱阻值 Normal resistance(Ω)

# 合金超低阻值片式固定電阻器

## METAL STRIP LOW OHMIC CHIP FIXED RESISTOR

### ● 額定值 Ratings

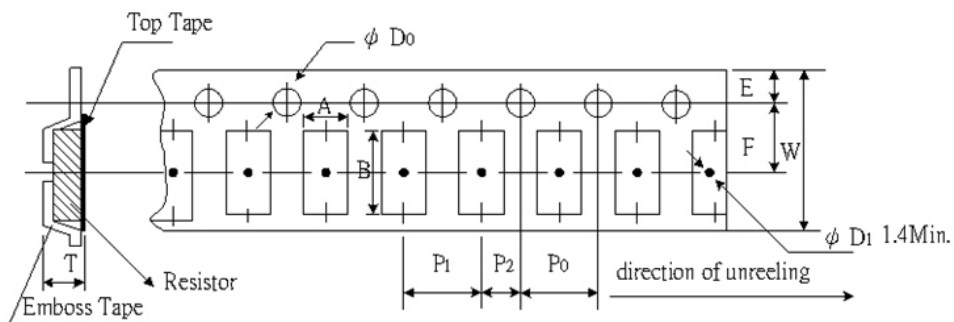
型號 Type	額定功率 Rating Power	使用溫度範圍 Operating Temp. Range	阻值範圍 Resistance Range				TCR (PPM/°C)
			±0.5%	±1%	±2%	±5%	
2512	2W 3W	-55°C ~ +170°C	0M50				±250
			R001, R002				±100
	R003				±75		
	R004~R010				±50		
	2W	-55°C ~ +170°C	R011~R050				±50
2725	4W	-55°C ~ +170°C	0M25, 0M50				±150
			R001				±100
			R002, R003				±50
2728	4W	-55°C ~ +170°C	R005, R010, R020, R025, R033				±75

### ● 特性 Characteristics

項目 Item	標準 Specifications	測試方法 (IEC60115-1) Test Methods (IEC60115-1)
可焊性 Solderability	可焊面積 ≥ 95% 95% Cover Min	IEC 60115-1 4.17 245°C ± 5°C 錫槽, 保持3s ± 0.3s. Lead-free solder bath at 245°C ± 5°C for 3s ± 0.3s.
電阻溫度係數 T.C.R	在規定值內 Within specified T.C.R	IEC 60115-1 4.8 +20°C/+125°C/+20°C
溫度快速變化 Rapid Change of Temperature	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.19 -55°C(30分鐘) ~ 常溫(5分鐘) ~ 125°C(30分鐘) 100個循環。 -55°C(30min) ~ normal temperature(5min) ~ 125°C(30min) 100 cycles.
耐焊接熱 Resistance to Soldering Heat	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.18 270°C ± 5°C 錫槽, 保持10s ± 1s. Lead-free solder bath at 270°C ± 5°C for 10s ± 1s.
短時間過負載 Short Time Overload	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.13 2W、3W、4W:4倍額定功率, 持續5秒 2W、3W、4W:4× rated power for 5s
基板彎曲試驗 Substrate Bending Test	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.33 彎曲距離(Bending distance): 2mm 保持時間(Duration): 60s ± 5s.
穩態濕熱 Damp Heat Steady State	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.24 40°C ± 2°C, 93% ± 3%RH, 1000h, 額定電流或元件極限電流(取最小值), 通1.5小時/斷0.5小時。 40°C ± 2°C, 93% ± 3%RH, 1000h, rated current or limiting element current whichever is lower for 1.5h ON/0.5h OFF.
70°C 耐久性 Endurance at 70°C	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.25.1 70°C ± 2°C, 1000小時, 額定電流或元件極限電流(取最小值), 通1.5小時/斷0.5小時。 70°C ± 2°C, 1000h, rated current or limiting element current whichever is lower for 1.5h ON/0.5h OFF.
上限類別溫度耐久性 Endurance at Upper Category Temperature	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.25.3 170°C ± 2°C, 1000小時 170°C ± 2°C, 1000h
耐溶劑 Component Solvent Resistance	無可見損傷 No mechanical damage ΔR ≤ ±1.0%R	IEC 60115-1 4.29 異丙醇 (IPA), 23°C ± 5°C, 浸10小時。 Iso-propyl alcohol (IPA), 23°C ± 5°C, 10h.

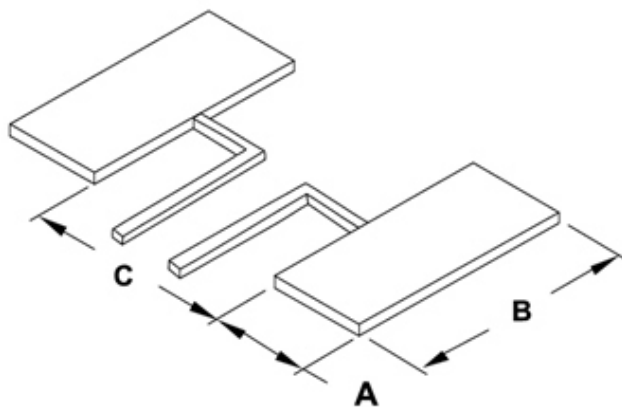
• 包装 Packaging

編帶包裝 Tape and Reel



型號 Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P <sub>0</sub> (mm)	P <sub>1</sub> (mm)	P <sub>2</sub> (mm)	$\phi Do$ (mm)	T (mm)	Quantity (EA)
2512	3.50±0.20	6.80±0.20	12.0±0.20	1.75±0.10	5.5±0.05	4.0±0.10	4.0±0.10	2.00±0.05	1.50±0.10	1.20±0.15	4000
2725	6.80±0.20	7.20±0.20	12.0±0.20	1.75±0.10	5.5±0.05	4.0±0.10	8.0±0.10	2.00±0.05	1.50±0.10	1.45±0.15	1000
2728	7.70±0.20	7.20±0.20	16.0±0.20	1.75±0.10	5.5±0.05	4.0±0.10	12.0±0.10	2.00±0.05	1.50±0.10	1.45±0.15	3000

• 推荐焊盘尺寸 Solder Pad Dimensions



型號 Type	A (mm)	B (mm)	C (mm)	備注
2512	1.80±0.25	3.60±0.25	3.80±0.13	/
	2.80±0.25	3.60±0.25	2.30±0.13	適用R001~R004,0M50
2725	3.18±0.25	6.86±0.25	1.30±0.13	/
2728	2.75±0.25	7.80±0.25	3.50±0.13	/

单击下面可查看定价，库存，交付和生命周期等信息

[>>FH\(风华高科\)](#)