

# THICK FILM CHIP RESISTOR 厚膜晶片電阻器

# RCT

0201  
0402  
0603  
0805  
1206  
1210  
1218  
1812  
2010  
2512



- PACKING 包裝 : TAPE ON REEL 卷帶裝
- TOLERANCE 誤差 :  $\pm 1\%$ ,  $\pm 5\%$
- RESISTANCE VALUE RANGE 阻值範圍 : 1 OHM – 100 MEG OHM

## CONSTRUCTION 結構



## RECOMMENDED LAND PATTERN



Unit: mm

| TYPE 型號 | A    | B    | C    |
|---------|------|------|------|
| RCT01   | 0.30 | 0.25 | 0.30 |
| RCT02   | 0.50 | 0.45 | 0.60 |
| RCT03   | 0.90 | 0.60 | 0.90 |
| RCT05   | 1.20 | 0.70 | 1.30 |
| RCT06   | 2.00 | 0.90 | 1.60 |
| RCT10   | 2.00 | 0.90 | 2.80 |
| RCT20   | 3.80 | 0.90 | 2.80 |
| RCT25   | 3.80 | 1.60 | 3.50 |

## DIMENSIONS 尺寸



| SIZE 尺寸 | L           | W           | T           | C           | D           |
|---------|-------------|-------------|-------------|-------------|-------------|
| 0201    | 0.60 ± 0.03 | 0.30 ± 0.03 | 0.23 ± 0.03 | 0.15 ± 0.05 | 0.15 ± 0.05 |
| 0402    | 1.00 ± 0.10 | 0.50 ± 0.05 | 0.35 ± 0.05 | 0.20 ± 0.10 | 0.25 ± 0.15 |
| 0603    | 1.60 ± 0.10 | 0.80 ± 0.10 | 0.45 ± 0.10 | 0.25 ± 0.15 | 0.30 ± 0.20 |
| 0805    | 2.00 ± 0.10 | 1.25 ± 0.10 | 0.50 ± 0.10 | 0.35 ± 0.20 | 0.30 ± 0.20 |
| 1206    | 3.10 ± 0.10 | 1.60 ± 0.10 | 0.55 ± 0.10 | 0.45 ± 0.20 | 0.40 ± 0.25 |
| 1210    | 3.10 ± 0.10 | 2.50 ± 0.10 | 0.55 ± 0.10 | 0.45 ± 0.25 | 0.45 ± 0.25 |
| 1218    | 3.00 ± 0.10 | 4.60 ± 0.10 | 0.55 ± 0.15 | 0.45 ± 0.25 | 0.45 ± 0.25 |
| 1812    | 4.60 ± 0.10 | 3.00 ± 0.10 | 0.55 ± 0.10 | 0.55 ± 0.25 | 0.50 ± 0.25 |
| 2010    | 5.00 ± 0.20 | 2.50 ± 0.15 | 0.55 ± 0.10 | 0.60 ± 0.25 | 0.50 ± 0.25 |
| 2512    | 6.35 ± 0.20 | 3.10 ± 0.15 | 0.55 ± 0.10 | 0.60 ± 0.25 | 0.60 ± 0.25 |

## SPECIFICATIONS 規格

| TYPE 型號                               | RCT01        | RCT02       | RCT03 | RCT05 | RCT06       | RCT10 | RCT12 | RCT18 | RCT20 | RCT25 |
|---------------------------------------|--------------|-------------|-------|-------|-------------|-------|-------|-------|-------|-------|
| SIZE 尺寸                               | 0201         | 0402        | 0603  | 0805  | 1206        | 1210  | 1218  | 1812  | 2010  | 2512  |
| POWER RATING AT 70°C<br>額定功率          | 1/20W        | 1/16W       | 1/10W | 1/8W  | 1/4W        | 1/3W  | 1W    | 1/2W  | 1/2W  | 1W    |
| MAX RCWV<br>最高使用電壓                    | 15V          | 50V         | 50V   | 150V  | 200V        | 200V  | 200V  | 200V  | 200V  | 200V  |
| MAX OVERLOAD VOLTAGE<br>最高負荷電壓        | 30V          | 100V        | 100V  | 300V  | 400V        | 400V  | 400V  | 400V  | 400V  | 400V  |
| JUMPER < 50mΩ<br>最高使用電流               | 0.5A         | 1A          | 1A    | 1A    | 2A          | 2A    | 2A    | 2A    | 2A    | 2A    |
| OPERATING TEMPERATURE RANGE<br>使用溫度範圍 | -55 ~ +125°C |             |       |       |             |       |       |       |       |       |
| STANDARD VALUE RANGE<br>阻值範圍          | 0Ω           | 0 ~ 50mΩ    |       |       |             |       |       |       |       |       |
|                                       | ±1% (E-96)   | 10Ω ~ 2.2MΩ |       |       | 10Ω ~ 2.2MΩ |       |       |       |       |       |
|                                       | ±5% (E-24)   | 1Ω ~ 3.3MΩ  |       |       | 1Ω ~ 22MΩ   |       |       |       |       |       |

Remarks : Non-standard resistance values, high precision tolerances and low TCR items are available upon request.  
不常規阻值、高精度誤差和低TCR產品亦可提供。

## ELECTRICAL CHARACTERISTICS 電器特性

ALL MEASUREMENTS ARE TAKEN AT 25°C AT 1KHZ AND 65% RELATIVE HUMIDITY, UNLESS OTHERWISE STATED  
所有測試必須在環境溫度25°C及濕度65%的條件下進行

| PERFORMANCE TEST<br>性能測試             | 1%              | 5%             | TEST METHOD<br>測試方法  |
|--------------------------------------|-----------------|----------------|--|
| TEMPERATURE CYCLING<br>高低温試驗         | ± (0.5%+0.05 Ω) | ± (1%+0.05 Ω)  | MIL-STD-202F, Method 107<br>Cycle between -55°C and +125°C for 5 cycles  |
| SHORT TIME OVERLOAD<br>短時間過負荷        | ± (1%+0.05 Ω)   | ± (2%+0.1 Ω)   | MIL-R-55342D, Para 4.7.5<br>Apply rated voltage 2.5 times for 5 seconds  |
| RESISTANCE TO SOLDERING HEAT<br>耐焊性  | ± (1%+0.05 Ω)   | ± (1%+0.05 Ω)  | JIS C 5202 6.4 / IEC 60115-14.18<br>Unmounted chip with a solder bath, 270°C ± 5°C, 10 ± 1 sec   |
| LOADING LIFE IN MOISTURE<br>恒溫恒濕壽命試驗 | ± (0.5%+0.05 Ω) | ± (2%+0.05 Ω)  | MIL-STD-202F, Method 106E<br>40°C, 1000hrs at RCWV, 1.5hrs on, 0.5hr off   |
| LOAD LIFE<br>耐久性                     | ± (1%+0.05 Ω)   | ± (3%+0.1 Ω)   | MIL-STD-202F, Method 108A<br>70°C, 100hrs at RCWV, 1.5hrs on, 0.5hr off  |
| SOLDERABILITY<br>焊錫性                 | Coverage ≥ 95%  | Coverage ≥ 95% | JIS C 5202 6.5 / IEC 60115-14.17<br>Termination Sn base (lead free); Unmounted chip completely immersed in a lead free solder bath, 245°C ± 5°C, 3 ± 1 sec                 |
| BENDING STRENGTH<br>彎曲強度             | ± (1%+0.05 Ω)   | ± (1%+0.05 Ω)  | JIS C 5202 6.1.4 / IEC 60115-14.33<br>Resistors mounted on a 90mm glass epoxy resin PCB (FR4), bending once 3mm for 10sec, 5mm for WR04, WR02<br>Pulling test: > 500 grams |

Marking 阻值表示



1.1. ± 5% (IECE - 24 Series) 0603, 0805, 1206 and bigger sizes (0402 no marking) are with 3-digit marking.

± 5% (IECE-24系列) 0603、0805、1206及以上規格(0402無字碼)均用三字碼表示。

e.g. 6R8=6.8Ω; 100=10×10<sup>0</sup>=10Ω; 472=47×10<sup>2</sup>=4700Ω=4.7KΩ

1.2. ± 1%.

a. 0805, 1206 and bigger sizes are with 4-digit marking.

0805、1206及以上規格阻值均用四字碼表示。

e.g. 82R5=82.5Ω; 1000=100×10<sup>0</sup>=100Ω; 2212=221×10<sup>2</sup>=22100Ω=22.1KΩ。

b. 0603 ± 1% (IECE - 96 Series) are with 3-digit marking. The first 2 digits are the value code; the final character denotes the multiplier of 10n.

0603 ± 1% (IECE-96系列)阻值均採用三字碼表示。前兩位為阻值的數字代碼；後一位為英文大寫字母，表示倍率(10n次幂)。

E-96 Series - Value marking codes are as below table:

E-96系列阻值的數字代碼如下表：

| Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 | Value<br>阻值 | Code<br>代碼 |
|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
| 100         | 01         | 133         | 13         | 178         | 25         | 237         | 37         | 316         | 49         | 422         | 61         | 562         | 73         | 750         | 85         |
| 102         | 02         | 137         | 14         | 182         | 26         | 243         | 38         | 324         | 50         | 432         | 62         | 576         | 74         | 768         | 86         |
| 105         | 03         | 140         | 15         | 187         | 27         | 249         | 39         | 332         | 51         | 442         | 63         | 590         | 75         | 787         | 87         |
| 107         | 04         | 143         | 16         | 191         | 28         | 255         | 40         | 340         | 52         | 453         | 64         | 604         | 76         | 806         | 88         |
| 110         | 05         | 147         | 17         | 196         | 29         | 261         | 41         | 348         | 53         | 464         | 65         | 619         | 77         | 825         | 89         |
| 113         | 06         | 150         | 18         | 200         | 30         | 267         | 42         | 357         | 54         | 475         | 66         | 634         | 78         | 845         | 90         |
| 115         | 07         | 154         | 19         | 205         | 31         | 274         | 43         | 365         | 55         | 487         | 67         | 649         | 79         | 866         | 91         |
| 118         | 08         | 158         | 20         | 210         | 32         | 280         | 44         | 374         | 56         | 499         | 68         | 665         | 80         | 887         | 92         |
| 121         | 09         | 162         | 21         | 215         | 33         | 287         | 45         | 383         | 57         | 511         | 69         | 681         | 81         | 909         | 93         |
| 124         | 10         | 165         | 22         | 221         | 34         | 294         | 46         | 392         | 58         | 523         | 70         | 698         | 82         | 931         | 94         |
| 127         | 11         | 169         | 23         | 226         | 35         | 301         | 47         | 402         | 59         | 536         | 71         | 715         | 83         | 953         | 95         |
| 130         | 12         | 174         | 24         | 232         | 36         | 309         | 48         | 412         | 60         | 549         | 72         | 732         | 84         | 976         | 96         |

倍率字母代碼如下表：

| Code       | A               | B               | C               | D               | E               | F               | G               | X                | Y                | Z                |
|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Multiplier | 10 <sup>0</sup> | 10 <sup>1</sup> | 10 <sup>2</sup> | 10 <sup>3</sup> | 10 <sup>4</sup> | 10 <sup>6</sup> | 10 <sup>6</sup> | 10 <sup>-1</sup> | 10 <sup>-2</sup> | 10 <sup>-3</sup> |

For example 例如：01Y=100×10<sup>-2</sup>=1Ω; 68A=499×10<sup>0</sup>=499Ω; 02D=102×10<sup>3</sup>=102KΩ

Markings of +/- 1% and +/- 5% tolerance are the same in the E-24 Series (but not in the E-96 Series), product label shows the tolerance.

E-24系列阻值容差為+/-1%，且不在E-96系列中，則字碼表示與E-24系列+/-5%字碼相同，僅用標籤注明容差。

For example 例如：120=12×10<sup>0</sup>=12Ω; 475=47×10<sup>5</sup>=4.7MΩ。

1.3. "0" denotes 0 Ohm value resistors.

"0"歐姆晶片電阻字碼均用一個"0"表示。



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