

## PRECISION METAL FILM RESISTORS

### 精密型金屬皮膜電阻器



#### Features

1. Low T.C. : 25ppm、50ppm、100ppm.
2. High precision :  $\pm 0.25\%$ 、 $\pm 0.5\%$ 、 $\pm 1\%$ 、 $\pm 5\%$ .
3. Temperature stable, low noise, good reliability.
4. 0.1% / 25ppm : case by case.

#### 特色

1. 低溫度係數 : 25ppm、50ppm、100ppm。
2. 高精密度 :  $\pm 0.25\%$ 、 $\pm 0.5\%$ 、 $\pm 1\%$ 、 $\pm 5\%$ 。
3. 溫度穩定，低雜音，可靠性良好。
4. 可客製化 0.1% / 25ppm。

## ELECTRICAL AND MECHANICAL PERFORMANCE

### 電氣及機械特性

| 特性 Characteristics                  | 規格值 Standards  | 試驗方法 Test Methods  |
|-------------------------------------|--|--|
| 阻值容許誤差 Resistance Tolerance         | $\pm 1\%$ (F) or $\pm 0.5\%$ (D)   | -  |
| 溫度係數 Resistance Temp. Coeff.        | $\pm 25$ ppm / $^{\circ}\text{C}$ 、 $\pm 50$ ppm / $^{\circ}\text{C}$ 、 $\pm 100$ ppm / $^{\circ}\text{C}$ 、 | -65 $^{\circ}\text{C}$ ~ 175 $^{\circ}\text{C}$  |
| 額定負載 Power Rating Load              | Surface temp. 175 $^{\circ}\text{C}$ Max.<br>最高表面溫度 175 $^{\circ}\text{C}$ , $\Delta R/R \leq \pm 1\%$       | Rated voltage for 30 minutes<br>額定電壓 / 30分鐘  |
| 短時間過負載 Short Time Overload          | $\pm 0.5\%$  | 2.5 times of rated voltage<br>for 5 seconds.<br>2.5 倍額定電壓 / 5秒   |
| 耐電壓 Dielectric Withstanding Voltage | No evidence of mechanical damage<br>or insulation breakdown.<br>無機械性能損壞及絕緣擊穿現象                               | Max. Overload Voltage for 1 min.<br>施加最高過負載電壓 1 分鐘<br>( RN 1 W & 1 WL : AC 350V ;<br>RN 1/4 WS : AC 300V )         |
| 絕緣電阻 Insulation Resistance          | 10,000M $\Omega$   | DC 100V or 500V megger   |
| 端子強度 Terminal Strength              | No evidence of mechanical damage.<br>無機械性能損壞現象   | 1 kg   |
| 焊錫性 Solder-ability                  | Minimum 95% coverage<br>焊錫面積 $\geq 95\%$   | 235 $\pm$ 5 $^{\circ}\text{C}$ for 2 seconds   |
| 浸錫耐熱性 Resistance to Soldering Heat  | No evidence of mechanical damage.<br>無機械性能損壞現象, $\Delta R/R \leq \pm 1\%$                                    | 270 $\pm$ 5 $^{\circ}\text{C}$ for 10 $\pm$ 1 seconds<br>350 $\pm$ 10 $^{\circ}\text{C}$ for 3.5 $\pm$ 0.5 seconds |

## ENVIRONMENTAL CHARACTERISTICS

### 耐環境特性

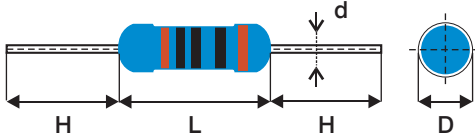
| 特性 Characteristics            | 規格值 Standards                | 試驗方法 Test Methods  |
|-------------------------------|------------------------------|--|
| 溫度週率 Temp. Cycle              | $\Delta R/R \leq \pm 0.25\%$ | -65 $^{\circ}\text{C}$ ( 30 min.) $\rightarrow$ Room Temp.( 3 min.)<br>$\rightarrow$ +175 $^{\circ}\text{C}$ ( 30 min.)<br>$\rightarrow$ Room Temp.( 3 min.) / ( 5 cycles) |
| 負載壽命 Load Life                | $\Delta R/R \leq \pm 2\%$    | Rated power load 90 minutes ON<br>30 minutes OFF<br>70 $^{\circ}\text{C}$ 1000 hours   |
| 耐濕壽命 Moisture-proof Load Life | $\Delta R/R \leq \pm 1.5\%$  | Rated power load 90 minutes ON<br>30 minutes OFF<br>40 $^{\circ}\text{C}$ 95% RH 1000 hours  |
| 不燃性 Nonflammability           | not flamed                   | 16 times of rated wattage for 5 min.<br>(RN 1W & RN 1WL).  |

※ 參考規格 Reference Standards  
IEC 60115-1  
JIS C 5201-1

Unit : mm

## Dimensions

### 尺寸



| Rated Wattage | D±1     | L±1     | H±3 | d±0.1 | Resistance Range(Ω) | Max. Working Voltage |
|---------------|---------|---------|-----|-------|---------------------|----------------------|
| 1/8W          | 1.7±0.2 | 3.7max. | 28  | 0.45  | 10~1M               | 150V                 |
| 1/4WS         | 1.7±0.2 | 3.7max. | 28  | 0.45  | 10~1M               | 200V                 |
| 1/4W          | 2.4±0.5 | 6.4     | 28  | 0.6   | 10~2M               | 250V                 |
| 1/2WS         | 2.4±0.5 | 6.4     | 28  | 0.6   | 10~2M               | 300V                 |
| 0.6W          | 2.4±0.5 | 6.4     | 28  | 0.6   | 10~2M               | 350V                 |
| 1/2W          | 3.5     | 9       | 28  | 0.65  | 10~2M               | 350V                 |
| 1W            | 4.5     | 11      | 28  | 0.8   | 10~2M               | 500V                 |
| 1WL           | 5.0     | 15      | 28  | 0.8   | 10~2M               | 500V                 |

- Note:**
- To prevent electric corrosion, the resistance over 100KΩ should be limited at 50V.
  - Too low or too high ohmic values can be supplied only case by case.
  - Max. Overload Voltage is 2 times of Max. Working Voltage.
  - RN 1W & RN 1WL is coated by flameproof paint.

## Derating Curve

### 電力輕減曲線

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with the curve below.



## Surface Temperature Rise

### 表面溫度上昇曲線



## How to order

### 訂貨方式

It is composed by Type, Rated Wattage, Nominal Resistance, Tolerance, Temperature Coefficient and Package. e.g.

RN    1/4W    10Ω    F    50ppm    T/B  
 a.            b.            c.            d.            e.            f.

- a. : Type(種類): Precision Metal Film Resistors are Called "RN".  
 b. : Rated Wattage(額定電力) : Shown by "W", such as 1/8W, 1/4WS, 1/4W, 1/2WS, 0.6W, 1/2W, 1W, 1WL.  
 c. : Nominal Resistance(公稱電阻值) : 10Ω.  
 d. : Tolerance(容許誤差): ±0.5%(D), ±1%(F).  
 e. : Temperature Coefficient (溫度係數) : ±25ppm/°C, ±50ppm/°C, Nil : ±100ppm/°C  
 f. : Package (包裝方式):  
 T/R=tape & reel (捲裝); T/B=tape in box(帶裝); Nil= Bulk(散裝).

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Metal Film Resistors - Through Hole](#) category:*

*Click to view products by [Tyohm](#) manufacturer:*

Other Similar products are found below :

[FRN25J330R](#) [FRN50J1R0S](#) [H4100RBYA](#) [H415RBZA](#) [H41K1BYA](#) [H41K5BYA](#) [H41M0BDA](#) [H420R5BCA](#) [H421R5BZA](#) [H4221RBYA](#)  
[H424K3BDA](#) [H442K2BDA](#) [H45K62BZA](#) [H4634RBZA](#) [H473R2BZA](#) [H4931KBZA](#) [H8160KFDA](#) [H8274KBZA](#) [H82K0FDA](#) [H82K0FZA](#)  
[H87K5DYA](#) [RLR05C1501GPB14](#) [RLR05C6201GS](#) [RLR20C3240FRB14](#) [RLR20C51R0GMB14](#) [RLR32C7R50FMB14](#) [RNC55H4642FPB14](#)  
[HR01623J](#) [HR01682J](#) [270-1.69M-RC](#) [LR0204F110R](#) [LR0204F18R](#) [LR0204F20K](#) [LR0204F20R](#) [LR0204F510R](#) [LR1F121R](#) [LR1F133K](#)  
[LR1F383R](#) [LR1F3K01](#) [LR1F4K75](#) [LR2F330RJIT](#) [LR2F51R](#) [LR2F910R](#) [ERX-2SZJR20E](#) [SQMR74K7J](#) [FMF-25FTF52-100K](#)  
[FRN50J100RS](#) [FRN50J470RS](#) [H4100RBZA](#) [H414R3BZA](#)