

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.	± 25 ppm / $^{\circ}\text{C}$ 、 ± 50 ppm / $^{\circ}\text{C}$ 、 ± 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. 最高表面溫度 175 $^{\circ}\text{C}$, $\Delta R/R \leq \pm 1\%$	Rated voltage for 30 minutes 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 for 5 seconds. 2.5 倍額定電壓 / 5秒
耐電壓 Dielectric Withstanding Voltage	No evidence of mechanical damage or insulation breakdown. 無機械性能損壞及絕緣擊穿現象	Max. Overload Voltage for 1 min. 施加最高過負載電壓 1 分鐘 (RN 1 W & 1 WL : AC 350V ; RN 1/4 WS : AC 300V)
絕緣電阻 Insulation Resistance	10,000M Ω	DC 100V or 500V megger
端子強度 Terminal Strength	No evidence of mechanical damage. 無機械性能損壞現象	1 kg
焊錫性 Solder-ability	Minimum 95% coverage 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. 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 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.) \rightarrow +175 $^{\circ}\text{C}$ (30 min.) \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 30 minutes OFF 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 30 minutes OFF 40 $^{\circ}\text{C}$ 95% RH 1000 hours
不燃性 Nonflammability	not flamed	16 times of rated wattage for 5 min. (RN 1W & RN 1WL).

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

Unit : mm

Dimensions

尺寸



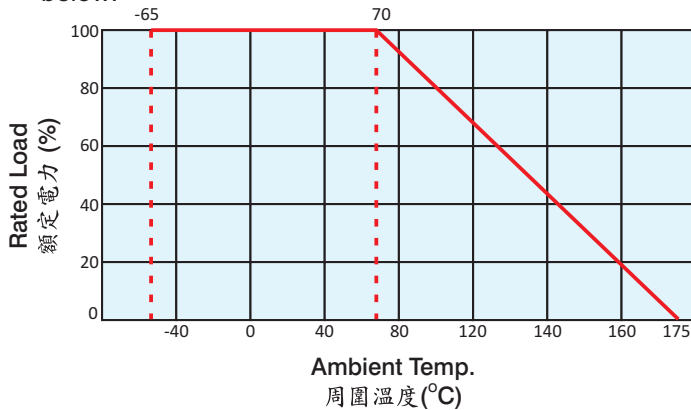
Rated Wattage	D±1	L±1	H±3	d±0.1	Resistance Range(Ω)	Max. Working Voltage
1/8W	1.7±0.2	3.7max.	28	0.45	10~1M	150V
1/4WS	1.7±0.2	3.7max.	28	0.45	10~1M	200V
1/4W	2.4±0.5	6.4	28	0.6	10~2M	250V
1/2WS	2.4±0.5	6.4	28	0.6	10~2M	300V
0.6W	2.4±0.5	6.4	28	0.6	10~2M	350V
1/2W	3.5	9	28	0.65	10~2M	350V
1W	4.5	11	28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

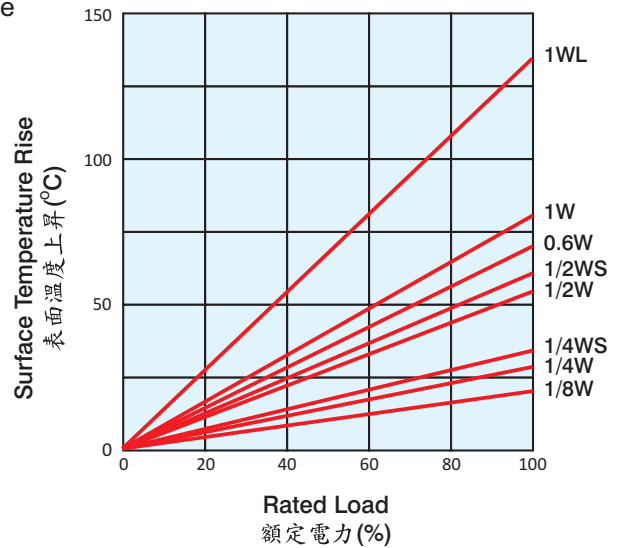
電力輕減曲線

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).

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