

INDEX

RESISTOR

公司簡介.....
COMPANY PROFILE

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

色碼表.....4
COLOR CODE

晶片電阻.....5
CHIP RESISTOR (SMD)

排列電阻.....10
SIP RESISTOR NETWORKS (SIP)

綫繞電阻(有感&無感).....12
WIRE WOUND RESISTOR (INDUCTIVE TYPE & NON-INDUCTIVE TYPE) (KNP/NKNP)

不燃性綫繞保險絲電阻器.....14
WIRE WOUWD FUSIBLE RESISIOR (FKNP)

不燃性金屬氧化皮膜固定電阻器.....16
METAL OXIDE FILM FIXED RESISTOR (MOF)

保險絲電阻.....18
FUSIBLE METAL FILM RESISTOR (FR)

金屬皮膜固定電阻器(精密電阻).....20
METAL FILM FIXED RESISTOR (MF)

碳素皮膜固定電阻器.....22
CARBON FILM FIXED RESISTOR (CF)

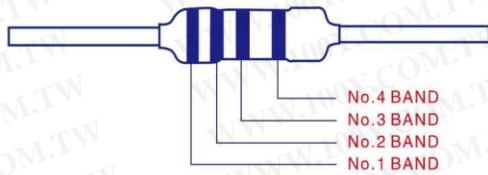
跳繞/零歐姆.....24
JUMPER WIRE ZERO OHM (JW)

成型加工尺寸.....25
KNP/MOF/FR/MF/CF OTHER TYPES

水泥型電阻器.....	26
<i>CEMENT TYPE RESISTOR (CR-TYPE)</i>	
金屬片無感水泥型電阻器.....	30
<i>NON-INDUCTIVE METAL PLATE RESISTOR (MPR)</i>	
不燃性氧化金屬皮膜固定電阻器.....	31
<i>FLAMEPROOF METAL OXIDE FILM RESISTOR</i>	
高壓金屬玻璃釉電阻(高壓電阻).....	32
<i>METAL GLAZE HIGH VOLTAGE RESISTOR (MGR)</i>	
高壓脈衝電阻器.....	34
<i>HIGH VOLTAGE PULSE RESISTOR (MRT)</i>	
低阻值電阻器(銅錳綫&銅鎳綫).....	36
<i>MILLIOHM RESISTOR COPPER-MANGANESE WIRE&COPPER-NICKEL WIRE) (SHUNT)</i>	
電力型不燃性波浪繞綫電阻.....	38
<i>NON FLAMMABLE WAVE-SHAPE RIBBON-WOUND</i>	
電力型不燃性低阻值繞綫電阻器.....	40
<i>NON FLAMMABLE LOW OHM WIRE WOUND RESISTOR (DQ)</i>	
電力型不燃性平型繞綫電阻.....	42
<i>NON FLAMMABLE FLAT WIRE WOUND RESISTOR (ZR)</i>	
電力型鋁殼繞綫電阻.....	44
<i>LARGE CAPACITY METAL-CLAD WIRE WOUND RESISTOR (AL)</i>	
黃金鋁殼電阻.....	46
<i>ALUMINUM HOUSE WIRE WOUND RESISTOR (AH)</i>	
編帶T與散裝P之關係說明.....	48
<i>THE DESCRIPTION BETWEEN T AND P (BULK TYPE)</i>	
包裝數量對照表.....	50
<i>PACKING INFORMATION</i>	

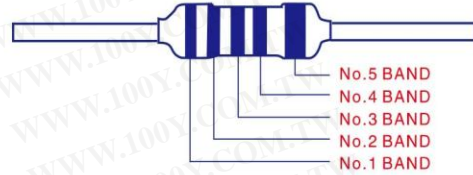
COLOR CODE 色碼表

E-24 SERIES



COLOR	No.1	No.2	No.3	No.4
BLACK 黑	0	0	10 ⁰	
BROWN 棕	1	1	10 ¹	
RED 紅	2	2	10 ²	G(±2%)
ORANGE 橙	3	3	10 ³	
YELLOW 黃	4	4	10 ⁴	
GREEN 綠	5	5	10 ⁵	
BLUE 藍	6	6	10 ⁶	
VIOLET 紫	7	7	10 ⁷	
GRAY 灰	8	8	10 ⁸	
WHITE 白	9	9	10 ⁹	
GOLD 金			10 ⁻¹	J(±5%)
SILVER 銀			10 ⁻²	K(±10%)

E-96 AND E-192 SERIES



COLOR	No.1	No.2	No.3	No.4	No.5
BLACK 黑	0	0	0	10 ⁰	
BROWN 棕	1	1	1	10 ¹	F(±1%)
RED 紅	2	2	2	10 ²	G(±2%)
ORANGE 橙	3	3	3	10 ³	
YELLOW 黃	4	4	4	10 ⁴	
GREEN 綠	5	5	5	10 ⁵	D(±0.5%)
BLUE 藍	6	6	6	10 ⁶	C(±0.25%)
VIOLET 紫	7	7	7	10 ⁷	B(±0.1%)
GRAY 灰	8	8	8	10 ⁸	
WHITE 白	9	9	9	10 ⁹	
GOLD 金				10 ⁻¹	
SILVER 銀				10 ⁻²	

標準電阻值表 STANDARD EIA/MIL RESISTANCE DECADE VALUES

E-24(±2%, ±5%)											
10	11	12	13	15	16	18	20	22	24	27	30
33	36	39	43	47	51	56	62	68	75	82	91
E-96(±1%)											
10.0	10.2	10.5	10.7	11.0	11.3	11.5	11.8	12.1	12.4	12.7	13.0
13.3	13.7	14.0	14.3	14.7	15.0	15.4	15.8	16.2	16.5	16.9	17.4
17.8	18.2	18.7	19.1	19.6	20.0	20.5	21.0	21.5	22.1	22.6	23.2
23.7	24.3	24.9	25.5	26.1	26.7	27.4	28.0	28.7	29.4	30.1	30.9
31.6	32.4	33.2	34.0	34.8	35.7	36.5	37.4	38.3	39.2	40.2	41.2
42.2	43.2	44.2	45.3	46.4	47.5	48.7	49.9	51.1	52.3	53.6	54.9
56.2	57.6	59.0	60.4	61.9	63.4	64.9	66.5	68.1	69.8	71.5	73.2
75.0	76.8	78.7	80.6	82.5	84.5	86.6	88.7	90.9	93.1	95.3	97.6
E-192(±0.1%, ±0.25%, ±0.5%)											
10.0	10.1	10.2	10.4	10.5	10.6	10.7	10.9	11.0	11.1	11.3	11.4
11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	13.0	13.2
13.3	13.5	13.7	13.8	14.0	14.2	14.3	14.5	14.7	14.9	15.0	15.2
15.4	15.6	15.8	16.0	16.2	16.4	16.5	16.7	16.9	17.2	17.4	17.6
17.8	18.0	18.2	18.4	18.7	18.9	19.1	19.3	19.6	19.8	20.0	20.3
20.5	20.8	21.0	21.3	21.5	21.8	22.1	22.3	22.6	22.9	23.2	23.4
23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.7	27.1
27.4	27.7	28.0	28.4	28.7	29.1	29.4	29.8	30.1	30.5	30.9	31.2
31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	35.7	36.1
36.5	37.0	37.4	37.9	38.3	38.8	39.2	39.7	40.2	40.7	41.2	41.7
42.2	42.7	43.2	43.7	44.2	44.8	45.3	45.9	46.4	47.0	47.5	48.1
48.7	49.3	49.9	50.5	51.1	51.7	52.3	53.0	53.6	54.2	54.9	55.6
56.2	56.9	57.6	58.3	59.0	59.7	60.4	61.2	61.9	62.6	63.4	64.2
64.9	65.7	66.5	67.3	68.1	69.0	69.8	70.6	71.5	72.3	73.2	74.1
75.0	75.9	76.8	77.7	78.7	79.6	80.6	81.6	82.5	83.5	84.5	85.6
86.6	87.6	88.7	89.8	90.9	92.0	93.1	94.2	95.3	96.5	97.6	98.8

CHIP RESISTOR

晶片電阻 SMD.



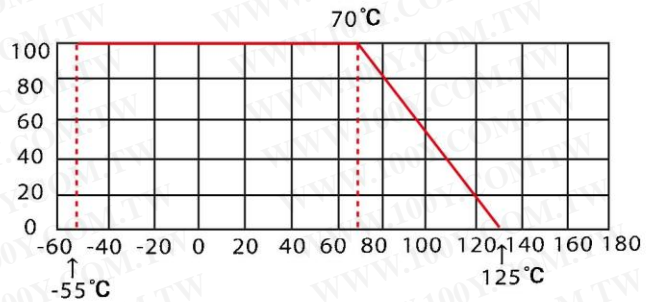
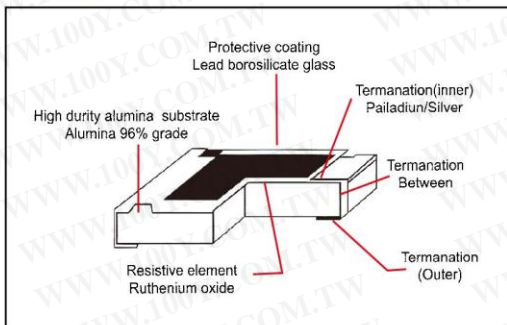
● **特點**

- 尺寸小且重量輕
- 具有高强度安定性和高信賴性
- 阻值公差: $\pm 1\%$, $\pm 2\%$, $\pm 5\%$

● **Feature**

- Small size and light weight
- Excellent mechanical strength and electrical stability
- Resistance Tolerance: $\pm 1\%$, $\pm 2\%$, $\pm 5\%$

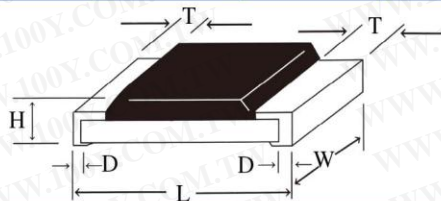
● **結構 Construction**



● **規格 Specifications**

形式 Type	0402	0603	0805	1206	1210	2010	2512
額定功率 Power Rating	1/16W	1/10W	1/8W	1/4W	1/3W	1/2W	1W
阻值範圍 Resistance Range	$\pm 1\%$	100 Ω ~100K Ω	10 Ω ~1M Ω	10 Ω ~1M Ω	10 Ω ~1M Ω	10 Ω ~1M Ω	10 Ω ~1M Ω
	$\pm 5\%$	10 Ω ~1M Ω	1 Ω ~10M Ω	1 Ω ~10M Ω	1 Ω ~10M Ω	1 Ω ~10M Ω	1 Ω ~10M Ω
最大使用電壓 Max. Working Voltage	50V	50V	150V	200V	200V	200V	200V
最大負荷電壓 Max. Overload Voltage	100V	100V	300V	400V	400V	400V	400V

● **尺寸 Dimension**



形式 Type	0402	0603	0805	1206	1210	2010	2512
L	1.0 \pm 0.1	1.6 \pm 0.1	2.0 \pm 0.15	3.1 \pm 0.1	3.1 \pm 0.1	5.0 \pm 0.15	6.4 \pm 0.2
W	0.5 \pm 0.15	0.8 \pm 0.15	1.25 \pm 0.15	1.6 \pm 0.15	2.6 \pm 0.15	2.5 \pm 0.15	3.2 \pm 0.15
H	0.35 \pm 0.1	0.45 \pm 0.1	0.55 \pm 0.1	0.55 \pm 0.1	0.55 \pm 0.1	0.55 \pm 0.1	0.55 \pm 0.1
T	0.2 \pm 0.2	0.3 \pm 0.2	0.4 \pm 0.2	0.5 \pm 0.2	0.5 \pm 0.2	1.0 \pm 0.2	1.3 \pm 0.2
D	0.25 \pm 0.2	0.3 \pm 0.2	0.4 \pm 0.2	0.5 \pm 0.25	0.5 \pm 0.25	0.5 \pm 0.2	0.6 \pm 0.2

CHIP RESISTOR 晶片電阻 SMD.

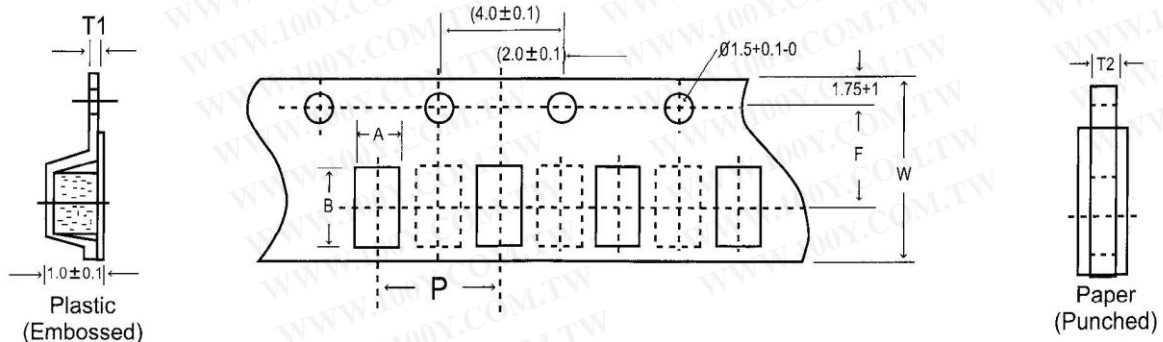
● 品名構成 *Type designation*

SMD		0805(1/8W)		100Ω		J(±5%)		T			
產品名稱		額定功率		公稱抵抗值		容許誤差值		型式			
Product name		Power Rating		Resistance		Tolerance		Packing			
額定功率 Power Rating		容許誤差度 Tolerance		包裝方式 Packing							
0402	0603	0805	1206	1210	2010	2512	F	G	J	T	E
1/16W	1/10W	1/8W	1/4W	1/3W	1/2W	1W	±1%	±2%	±5%	Paper	Emboss

● 特性 *Characteristics*

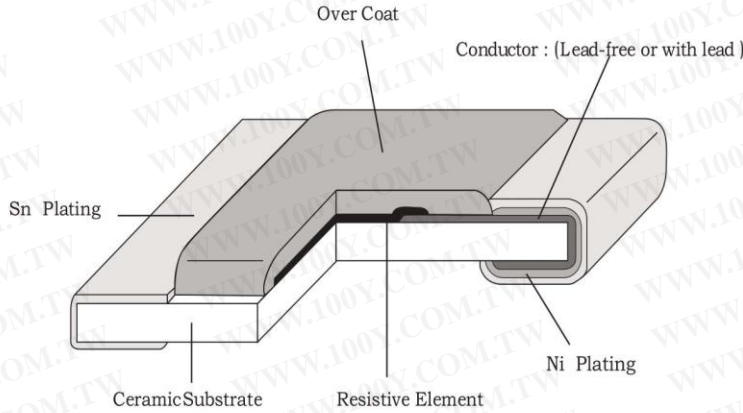
項目 Item	規格值 Specification	試驗方法 Test Method	JIS.C.5202
溫度特性 Temperature Coefficient	±1%:100PPM/°C ±2%, ±5%:200PPM/°C		
短時間過負荷 Short Time Over Load	±(1%+0.05Ω)	額定電壓的2.5倍，5秒 2.5 times power voltage, for 5 seconds	
負荷壽命 Load Life	±(3%+0.05Ω)	在溫度70°C環境中加額定電壓1.5小時“ON”，0.5小時“OFF” Power voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-55°C~125°C，5次循環 -55°C~125°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±(3%+0.05Ω)	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% PH for 1000 hrs.	
焊錫耐熱 Heat Resistance of Solder	±(1%+0.05Ω)	溫度255°C，3秒 255°C for 3 seconds	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	

● *Tape Specification*



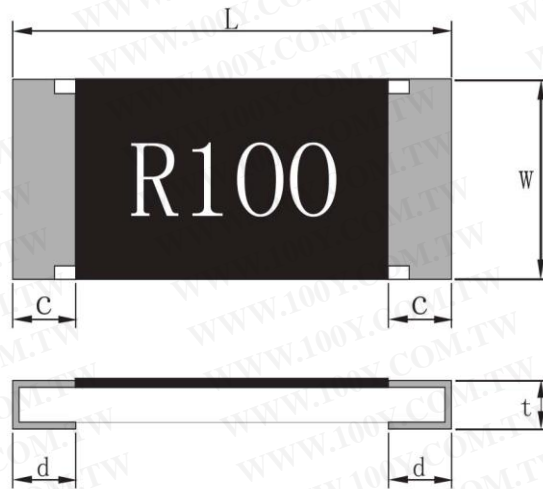
● 結構:

Construction:



● 尺寸:

Dimensions:



UNIT: mm

Type	L	W	C	d	t
RL04	1.00 ^{+0.10} / _{-0.05}	0.50 ±0.05	0.20 ±0.10	0.25 ±0.10	0.35 ±0.05
RL06	1.60 ±0.10	0.80 ±0.10	0.30 ±0.20	0.35 ±0.20	0.45 ±0.10
RL10	2.00 ±0.10	1.25 ±0.10	0.40 ±0.20	0.35 ±0.20	0.50 ±0.10
RL12	3.10 ±0.20	1.55 ±0.10	0.50 ±0.30	0.40 ±0.20	0.55 ±0.10
RL20	5.00 ±0.20	2.50 ±0.20	0.60 ±0.30	0.50 ±0.25	0.55 ±0.10
RL25	6.30 ±0.20	3.20 ±0.20	0.60 ±0.30	0.50 ±0.25	0.55 ±0.10

●品名規格:Type Designation

<u>RL</u>	<u>10</u>	<u>F</u>	<u>TN</u>	<u>R100</u>
Product Code	Size Power Rating	Tolerance	Packaging	Nominal Resistance
品名	規格、功率	誤差	包裝	阻值

04-0402(1005) 1/16W
06-0603(1608) 1/8W
10-0805(2012) 1/4W
12-1206(3216) 1/2W
20-2010(5025) 3/4W
25-2512(6432) 1W

J- ±5%
G- ±2%
J- ±5%

T- Paper Tape
E- Embossed Tape
N- Lead Free

3 Digits e.g 5%
(E24)R10=0.1Ω
4 Digits e.g 1%
(E96)R100=0.1Ω

●特性:Characteristics

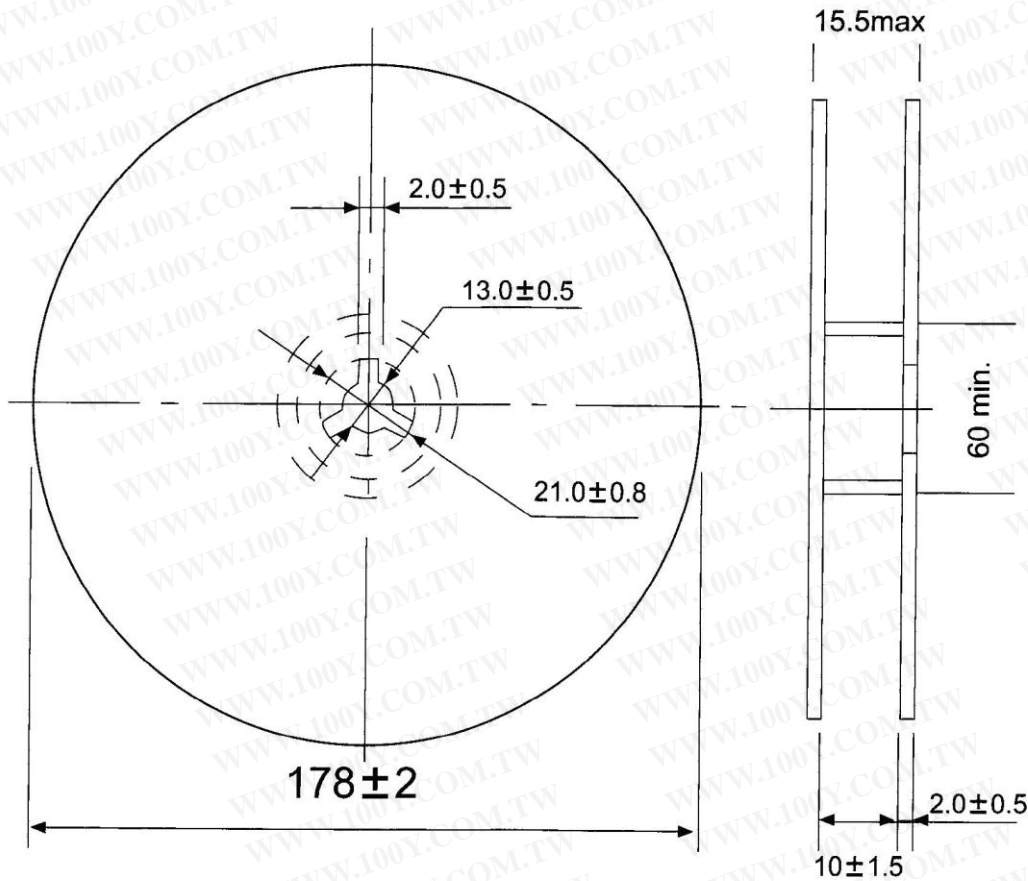
特性 Characteristics	RL04	RL06	RL10	RL12	RL20	RL25
額定功率 Power Ratings(w)	1/16W	1/8W	1/4W	1/2W	3/4W	1W
阻值 Resistance Value(mΩ)	200~910	100~910				
溫度特性 T.C.R(ppm/°C)	±300	±200				
使用溫度範圍 Operation Temperature Range(°C)	-55~+155					
阻值誤差 Resistance Tolerance(%)	±1% 、±2% 、±5%					
絕緣阻值 Insulation Resistance (MΩ)	Over 100					
最大工作電壓 Maximum Working Voltage(v)	$\sqrt{P \times R}$					

CHIP RESISTOR

晶片電阻 SMD

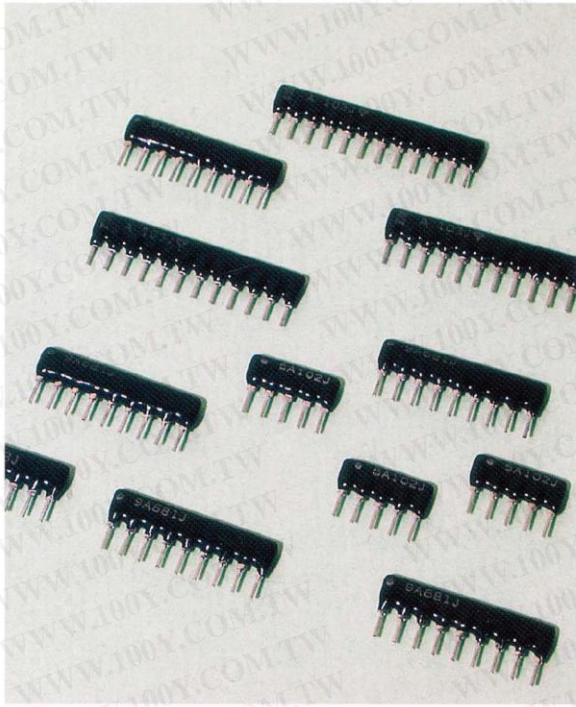
Type	A	B	W	F	T1	T2	P
0402	0.65±0.1	1.15±0.1	8.0±0.2	3.5±0.05	-----	0.45±0.1	4.0±0.05
0603	1.10±0.1	1.9±0.1	8.0±0.2	3.5±0.05	-----	0.6±0.1	4.0±0.05
0805	1.65±0.2	2.4±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
1206	2.0±0.2	3.6±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
1210	2.8±0.2	3.5±0.2	8.0±0.2	3.5±0.05	-----	0.75±0.1	4.0±0.05
2010	2.9±0.2	5.4±0.2	12.0±0.1	5.5±0.5	0.2±0.05	-----	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	-----	4.0±0.05

REEL



Unit:mm

SIP RESISTOR NETWORKS 排列電阻

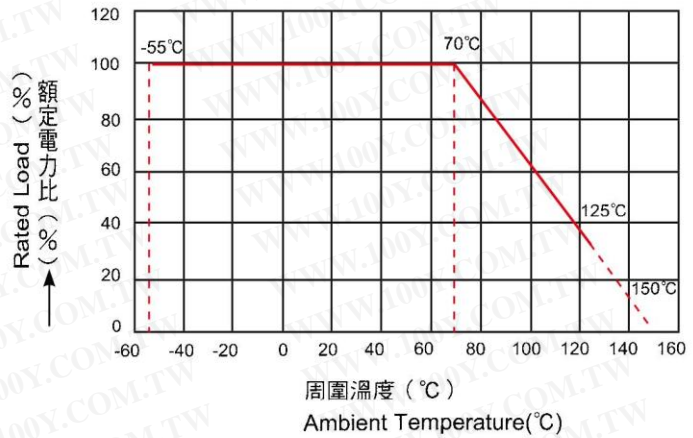


特點

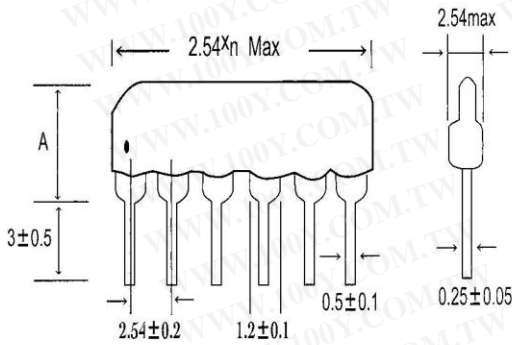
- 小型且高密度包裝
- 可依客戶設計需求製造

Feature

- Small size and high precision package.
- Customer's design are welcomed.



描述 General specifications



A	
0.125W	5.08 Max
0.25W	7.62 Max

腳數 Pin Number

網路形式 Circuit Type	腳數 Pin Number
A Type	3~13
B Type	2~7
T Type	6~18
E Type	4~24
L Type	2~12
D Type	3~13

規格 Specifications Rating

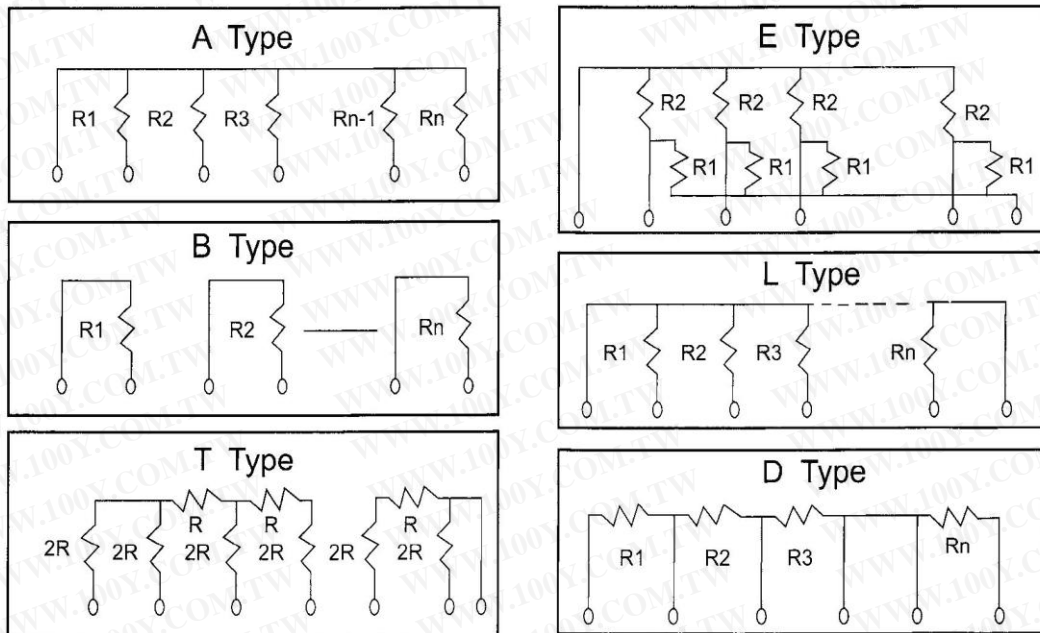
額定功率(PIN) Power Rating of Element	最大工作電壓 Max Working Voltage	最大負荷電壓 Max Overload Voltage	阻值範圍 Resistance Range	阻值公差 Resistance Tolerance
0.125W(1/8)	150V	250V	10Ω~1.0MΩ	F(±1%),G(±2%),J(±5%)
0.25W(1/4)	200V	280V	10Ω~1.0MΩ	

SIP RESISTOR NETWORKS 排列電阻

● 品名構成 *Type designation*

SIP	1/8W	8P7R	A(B)	472	J(±5%)
產品名稱	額定功率	腳數 & 電阻數	網路形式	電阻值	電阻公差
Product name	Power Rating	Pin & Resistor Number	Circuit Type	Resistance Code	Resistance Tolerance

● 網路形式 *Circuit Type*



● 特性 *Characteristics*

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C~125°C		
絕緣阻抗 Insulation Resistance	10000MΩ min	導腳與本體間使用DC 100V測試是否絕緣 Measured at DC 100V,between all pins and body	
溫度特性 Temperature Coefficient	±200PPM/°C		
短時間過負荷 Short Time Over Load	±(1%+0.05Ω)	額定電壓的2.5倍, 5秒 2.5 times rated voltage, 5 sec	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-40°C~85°C, 5次循環 -40°C~85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±(3%+0.05Ω)	在溫度40°C, 溼度95%RH環境額定電壓1.5小時「ON」, 0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C, 3秒 255°C for 3 seconds	

WIREWOUND

RESISTOR (INDUCTIVE TYPE & NON-INDUCTIVE TYPE)

綫繞電阻(有感&無感)

(KNP/NKNP)

STANDARD TYPE	標準品	灰色
MINIATURE TYPE	小型品	粉紅色



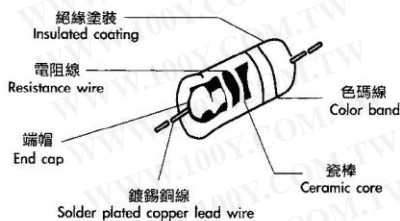
● 特點

- 綫繞電阻是由電阻線纏繞瓷棒而成
- 雜音低
- 阻值公差：±2%, ±5%
- 第5道色碼用於識別KNP（有感）, NKNP（無感）

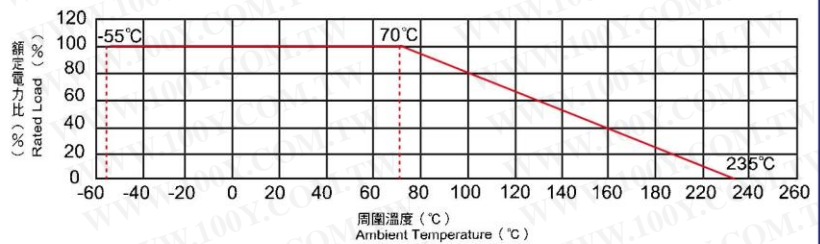
● Feature

- The fabric of wirewound Resistor is to wind the resistance wire on a ceramic core.
- Low noise
- Resistance tolerance : ±2%, ±5%
- There are 5 color bands on surface. KNP and NKNP are distinguished by 5th color band.

● 結構 Construction

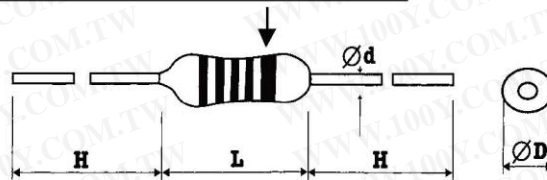


● 負載遞減曲綫 Power Derating Curve



● 描述 General Specifications

第5道色碼，「黑色」表示有感綫繞，「綠色」表示無感綫繞電阻
The 5th color band; KNP type in "Black", NKNP type in "Green"



電阻表面塗裝 Coating Color: 標準品以「灰色」表示，小型品以「粉紅色」表示
Standard type in "Gray" color, Mini-type in "Pink" color

額定功率 Power Rating		尺寸 (公釐) Dimension (mm)				KNP 阻值範圍 (Ω) Resistance Range (Ω)	NKNP 阻值範圍 (Ω) Resistance Range (Ω)	絕緣耐電壓 Dielectric Withstanding Voltage
標準品 STD type	小型品 Mini-type	ØD	L	H	Ød±0.05			
1/2W	1WS	3.5±0.5	9.0±0.5	26±2	0.50	0.05Ω~30Ω	0.05Ω~6Ω	300V
1W	2WS	4.5±0.5	11.5±1.0	35±3	0.70	0.05Ω~40Ω	0.05Ω~8Ω	350V
2W	3WS	5.0±1.0	15.5±1.0	33±3	0.70	0.05Ω~50Ω	0.05Ω~10Ω	350V
3W	5WS	6.0±1.0	17.5±1.0	38±3	0.70	0.1Ω~250Ω	0.1Ω~50Ω	400V
5W		8.0±1.0	24.5±1.0	35±3	0.70	0.1R~250R	0.1R~50R	400V

WIREWOUND RESISTOR (INDUCTIVE TYPE & NON-INDUCTIVE TYPE)

綫繞電阻(有感&無感) (KNP/NKNP)

● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C ~ +255°C		
絕緣電阻 Insulation Resistance	10000MΩ minimum		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential respectively specified in the list for 60 seconds	
溫度特性 Temperature Coefficient	±350PPM/°C (±500PPM/°C < 1Ω)	試驗溫度：室溫 + 100°C Test Temperature: Room Temperature + 100°C	
短時間過負荷 Short Time Over Load	±(2% + 0.05Ω)	額定電壓的2.5倍，5秒 2.5 times rated voltage for 5 seconds	
溫度循環 Temperature Cycling	±(5% + 0.05Ω)	-40°C ~ 85°C，5次循環 -40°C ~ 85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±5%	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
負荷壽命 Load Life	±5%	在溫度70°C，環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	
焊錫耐熱 Heat Resistance of Solder	±(1% + 0.05Ω)	溫度350°C，3秒 350°C for 3 seconds	

FKNP WIRE WOUND FUSIBLE RESISTOR Flame-proof

不燃性繞綫保險絲電阻器 FKNP



- **特點：**
 - * 熔斷特性佳
 - * 抗浪涌
 - 不燃性結構
 - ※ 顏色
 - * 標準品:灰色
 - * 小型品:粉紅色
 - * 第5道色碼區分: “白色” 表示繞綫保險絲電阻
- **Features:**
 - * Fusing characteristics stability
 - * Surge Voltage
 - Complete flame proof : construction
 - ※ Color:
 - * Standard type in Gray
 - * Mini-type in Pink
 - * The 5th color band in “white” wire wound fusible resistor

● **規格: Specifications**

種類 Type		定格電力 Rated power	最大開路電壓 Maximum Open Voltage	絕緣耐電壓 Dielectric withstanding voltage	阻值範圍(Ω) Resistance Range(Ω)
Normal size	FKNP1/2W	0.5W	250V	350V	0.1Ω~47Ω
	FKNP1W	1W	250V	400V	0.1Ω~47Ω
	FKNP2W	2W	250V	400V	0.1Ω~56Ω
	FKNP3W	3W	300V	400V	0.1Ω~100Ω
Small size	FKNP1WS	1W	250V	350V	0.1Ω~47Ω
	FKNP2WS	2W	250V	400V	0.1Ω~47Ω
	FKNP3WS	3W	300V	400V	0.1Ω~56Ω
	FKNP5WS	5W	300V	400V	0.1Ω~100Ω

FKNP WIRE WOUND FUSIBLE RESISTOR **Flame-proof**

不燃性繞綫保險絲電阻器 **FKNP**

※額定電壓 = $\sqrt{\text{額定功率} \times \text{阻抗值}}$

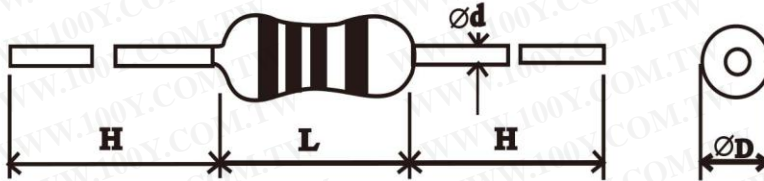
※RCWV Rated voltage = $\sqrt{\text{Power rating} \times \text{Resistance value}}$

額定電力 Power Rating	倍數 Times	×32	熔斷時間 Fusing time
1/2W		0.1 Ω ~ 100 Ω	60 秒以下 Under 60 sec.
1W			
2W			
3W/ 5WS			

※額定電壓 = $\sqrt{\text{額定功率} \times \text{阻抗值} \times \text{倍數}}$

※Fusing Voltage = $\sqrt{\text{Power rating} \times \text{Resistance value} \times \text{Times}}$

※熔斷後阻值變大100倍以上



Unit: mm

種類 Type	Type	尺寸 Dimensions			
普通型 Normal Size	小型化 Small Size	L	ψD	ψd	H
FKNP1/2W	FKNP1WS	9.0 ± 0.5	3.2 ± 0.5	0.50 ± 0.05	26.0 ± 2.0
FKNP1W	FKNP2WS	11.5 ± 1.0	4.5 ± 0.5	0.70 ± 0.05	25.0 ± 2.0
		11.5 ± 1.0	4.5 ± 0.5	0.70 ± 0.05	35.0 ± 2.0
		11.5 ± 1.0	4.5 ± 0.5	0.70 ± 0.05	42.0 ± 2.0
FKNP2W	FKNP3WS	15.0 ± 1.0	5.0 ± 0.5	0.70 ± 0.05	23.0 ± 2.0
		15.0 ± 1.0	5.0 ± 0.5	0.70 ± 0.05	33.0 ± 2.0
FKNP3W	FKNP5WS	17.5 ± 1.0	6.0 ± 0.5	0.70 ± 0.05	38.0 ± 2.0

METAL OXIDE FILM FIXED RESISTOR (MOF)

不燃性金屬氧化皮膜固定電阻器

STANDARD TYPE
標準品 灰色
MINIATURE TYPE
小型品 粉紅色



● 緒論

金屬氧化皮膜在穩定性與不燃性上有絕佳的效用，它擁有不可燃及長時間穩定性，而所有電氣測試都依據MIL-STD-202F及JIS 5202規範。

● Introduction

The Metal Oxide Resistor offer excellent performance. The coating is flame-proof insulation paint and it offers excellent long-term stability. All electronic test method are in accordance with MIL-STD-202F or JIS C 5202.

● 描述 General Specifications



● 特點

- 價格便宜，傳導性佳
- 長時間的穩定性
- 寬廣的阻值範圍：0.1Ω至100KΩ
- 阻值公差：±1%，±2%，±5%

● Feature

- Low cost, prompt delivery
- Long term stability
- Wide resistance range : 0.1Ω to 100KΩ
- Resistance tolerance : ±1%, ±2%, ±5%

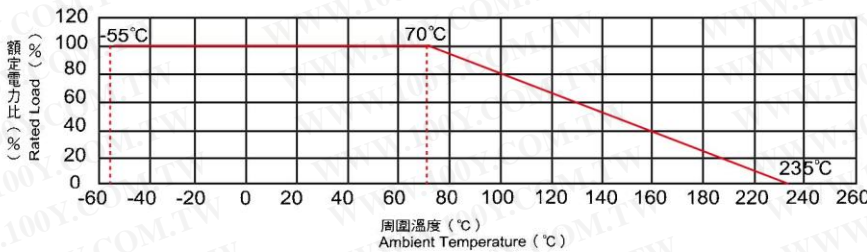
電阻表面塗裝Coating Color:標準品以「灰色」表示，小型品以「粉紅色」表示
Standard type in "Gray" color, Mini-type in "Pink" color

額定功率 Power Rating	尺寸 (公釐) Dimension(mm)				阻值範圍 (Ω) Resistance Range (Ω)	最大工作電壓 Max Working Voltage (RCWV*)	最大負荷電壓 Max Overload Voltage	絕緣耐電壓 Dielectric Withstanding Voltage
	ØD	L	H	Ød±0.05				
1/4W	2.3±0.5	6.5±0.5	28±2	0.45	0.1~100K	250V	400V	250V
1/2WS	2.3±0.5	6.5±0.5	28±2	0.45	0.1~100K	250V	400V	250V
1/2W	3.2±0.5	9.0±0.5	26±2	0.50	0.1~100K	250V	400V	350V
1WS	3.2±0.5	9.0±0.5	26±2	0.50	0.1~100K	350V	600V	350V
1W	4.5±1.0	11.5±1.0	35±3	0.70	0.1~100K	350V	600V	400V
2WS	4.5±1.0	11.5±1.0	35±3	0.70	0.1~100K	350V	600V	400V
2W	5.0±1.0	15.5±1.0	33±3	0.70	0.1~100K	350V	600V	400V
3WS	5.0±1.0	15.5±1.0	33±3	0.70	0.1~100K	350V	600V	400V
3W	6.0±1.0	17.5±1.0	38±3	0.70	0.1~100K	500V	800V	400V
5WS	6.0±1.0	17.5±1.0	38±3	0.70	0.1~100K	500V	800V	400V
5W	8.0±1.0	24.5±1.0	35±3	0.70	0.1~100K	750V	1000V	400V

METAL OXIDE FILM FIXED RESISTOR (MOF)

不燃性金屬氧化皮膜固定電阻器

● 負載遞減曲線 Power Derating Curve



● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方法 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C ~ +235°C		
絕緣電阻 Insulation Resistance	10000 MΩ minimum		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential respectively specified in the list for 60 seconds	
溫度特性 Temperature Coefficient	±350PPM/°C (±500PPM/°C < 1Ω)	試驗溫度：室溫+100°C Test Temperature: Room Temperature+100°C	
短時間過負荷 Short Time Over Load	±(1%+0.05Ω)	額定電壓的2.5倍，5秒 2.5 times rated voltage for 5 seconds	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-40°C~85°C，5次循環 -40°C~85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±5%	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
負荷壽命 Load Life	±5%	在溫度70°C環境，額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	
焊錫耐熱 Heat Resistance of Solder	±(1%+0.05Ω)	溫度350°C，3秒 350°C for 3 seconds	

FUSIBLE METAL FILM RESISTOR (FR)

保險絲電阻

STANDARD TYPE
標準品
MINIATURE TYPE
小型品



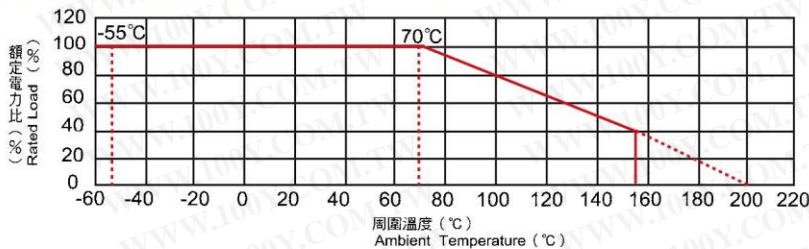
● 特點

- 確實的熔斷特性
- 不燃性結構
- 阻值範圍：0.1Ω至1KΩ
- 阻值公差：±5%
- 第5道色碼用以識別Fusible Metal Film

● Feature

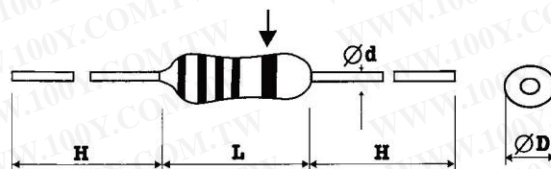
- The fusible resistor is applied to safety circuit in a wide range of electronic sets.
- Complete flame proof construction
- Resistance range : 0.1Ω to 1KΩ
- Resistance tolerance : ±5%
- There are 5 color bands on surface. The 5th band is in white color means fusible metal film resistor.

● 負載遞減曲線 Power Derating Curve



● 描述 General Specifications

第5道色碼，「白色」表示保險絲形電阻
The 5th color band; Fuse type in "White"



電阻表面塗裝 Coating Color: 標準品以「灰色」表示，小型品以「粉紅色」表示
Standard type in "Gray" color, Mini-type in "Pink" color

額定功率 Power Rating	尺寸 (公釐) Dimension(mm)				阻值範圍 (Ω) Resistance Range (Ω)	最大開路電壓 Maximum Open Voltage (V)	最大繼續過負荷電壓 Maximum Intermittent Overload Voltage	絕緣耐電壓 Dielectric Withstanding Voltage
	ØD	L	H	Ød±0.05				
1/4W	2.3±0.5	6.5±0.5	28±2	0.45	0.1Ω~1KΩ	150V	3 times of rated voltage	250V
1/2WS	2.3±0.5	6.5±0.5	28±2	0.45	0.1Ω~1KΩ	250V		250V
1/2W	3.2±0.5	9.0±0.5	26±2	0.50	0.1Ω~1KΩ	250V		350V
1WS	3.2±0.5	9.0±0.5	26±2	0.50	0.1Ω~1KΩ	250V		350V
1W	4.5±1.0	11.5±1.0	35±3	0.70	0.1Ω~1KΩ	250V		400V
2WS	4.5±1.0	11.5±1.0	35±3	0.70	0.1Ω~1KΩ	250V		400V
2W	5.0±1.0	15.5±1.0	33±3	0.70	0.1Ω~1KΩ	250V		400V
3WS	5.0±1.0	15.5±1.0	33±3	0.70	0.1Ω~1KΩ	300V		400V
3W	6.0±1.0	17.5±1.0	38±3	0.70	0.1Ω~1KΩ	300V		400V
5WS	6.0±1.0	17.5±1.0	38±3	0.70	0.1Ω~1KΩ	300V		400V

FUSIBLE METAL FILM RESISTOR (FR)

保險絲電阻

● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C ~ +155°C		
絕緣電阻 Insulation Resistance	1000MΩ minimum		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover of insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential respectively specified in the list for 60 seconds	
溫度特性 Temperature Coefficient	±200PPM/°C (±500PPM/°C < 1Ω)	試驗溫度：室溫+100°C Test Temperature: Room Temperature+100°C	
短時間過負荷 Short Time Over Load	±(2%+0.05Ω)	額定電壓的2.5倍，5秒 2.5 times rated voltage for 5 seconds	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-40°C~85°C，5次循環 -40°C~85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±5%	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
負荷壽命 Load Life	±5%	在溫度70°C，環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	
焊錫耐熱 Heat Resistance of Solder	±(1%+0.05Ω)	溫度350°C，3秒 350°C for 3 seconds	

● 熔斷特性 Fusing Characteristics

Times 倍數 額定功率 Power Rating	X 16	X 25	X 32	熔斷時間 Fusing Time
	1/4W	2.1Ω~1K	1.1Ω~2Ω	0.1Ω~1Ω
1/2W				
1W				
2W				
3W				

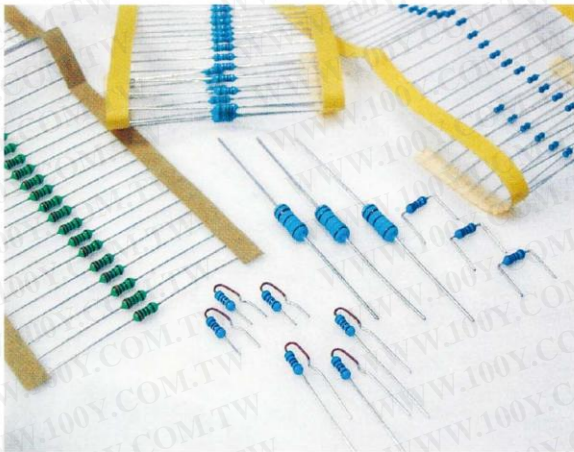
* 熔斷電壓 = $\sqrt{\text{額定功率} \times \text{阻抗值} \times \text{倍數}}$

* Fusing Voltage = $\sqrt{\text{Power rating} \times \text{Resistance value} \times \text{Times}}$

METAL FILM

FIXED RESISTOR (MF)

金屬皮膜固定電阻器(精密電阻)



STANDARD TYPE
標準品
MINIATURE TYPE
小型品

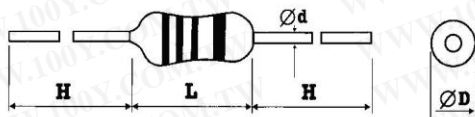
● 特點

- 高品質
- 標準公差：±0.5%，±1%，±2%，±5%
- 溫度係數：±25PPM，±50PPM，±100PPM

● Feature

- High quality
- Standard tolerance: ±0.5%，±1%，±2%，±5%
- Temperature coefficient: ±25PPM，±50PPM，±100PPM

● 描述 General Specifications

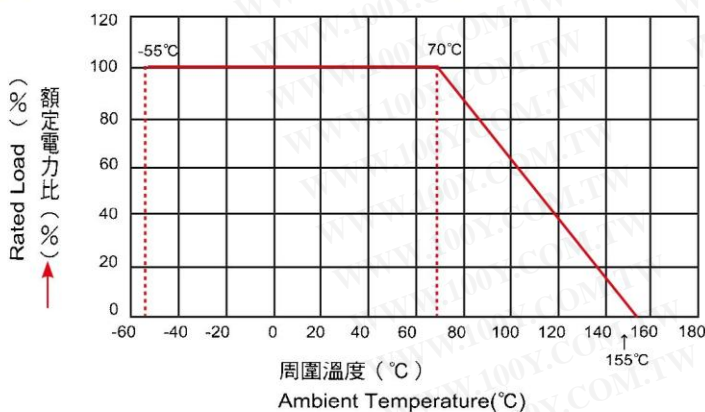


額定功率 Power Rating	尺寸(公釐) Dimension(mm)				阻值範圍(Ω) Resistance Range(Ω)	最大工作電壓 Max Working Voltage (RCWV*)	最大負荷電壓 Max Overload Voltage	絕緣耐電壓 Dielectric Withstanding Voltage
	ØD	L	H	Ød±0.05				
1/6W、1/8W	1.8±0.2	3.2±0.5	28±2	0.40	1~10MΩ	150V	300V	300V
1/4W	2.3±0.5	6.5±0.5	28±2	0.45	1~10MΩ	250V	500V	350V
1/2WS	2.3±0.5	6.5±0.5	28±2	0.45	1~10MΩ	250V	500V	350V
1/2W	3.2±0.5	9.0±0.5	26±2	0.50	1~10MΩ	350V	700V	400V
1WS	3.2±0.5	9.0±0.5	26±2	0.50	1~10MΩ	350V	700V	400V
1W	4.5±1.0	11.5±1.0	35±3	0.70	1~10MΩ	350V	800V	450V
2WS	4.5±1.0	11.5±1.0	35±3	0.70	1~10MΩ	350V	800V	450V
2W	5.0±1.0	15.5±1.0	33±3	0.70	1~10MΩ	500V	800V	500V
3WS	5.0±1.0	15.5±1.0	33±3	0.70	1~10MΩ	500V	1000V	500V

* 額定電壓 = $\sqrt{\text{額定功率} \times \text{阻抗值}}$ ，額定電壓相當於其最大工作電壓

* RCWV = $\sqrt{\text{Power rating} \times \text{Resistance value}}$ or max RCWV listed above whichever less.

● 負載遞減曲線 Power Derating Curve



METAL FILM FIXED RESISTOR (MF)

金屬皮膜固定電阻器(精密電阻)

● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C ~ +155°C		
絕緣電阻 Insulation Resistance	10000MΩ minimum		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential respectively specified in the list for 60 seconds	
溫度特性 Temperature Coefficient	±100PPM°C	試驗溫度：室溫+100°C Test Temperature: Room Temperature+100°C	
短時間過負荷 Short Time Over Load	±(1%+0.05Ω)	額定電壓的2.5倍，5秒 2.5 times rated voltage for 5 seconds	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-30°C~85°C，5次循環 -30°C~85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±1%	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
負荷壽命 Load Life	±1%	在溫度70°C，環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	
焊錫耐熱 Heat Resistance of Solder	±(0.25%+0.05Ω)	溫度350°C，3秒 350°C for 3 seconds	

CARBON FILM FIXED RESISTOR (CF)

碳素皮膜固定電阻器



STANDARD TYPE
標準品
MINIATURE TYPE
小型品

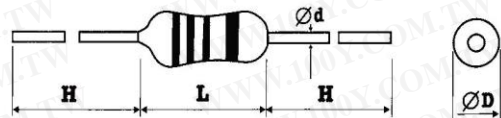
● 特點

- 價格便宜，傳導性佳
- 長時間的穩定性
- 寬廣的阻值範圍：1Ω至10MΩ
- 阻值公差：±2%，±5%，±10%

● Feature

- Low cost, prompt delivery
- Long term stability
- Wide resistance range : 1Ω to 10MΩ
- Resistance tolerance : ±2%, ±5%, ±10%

● 描述 General Specifications

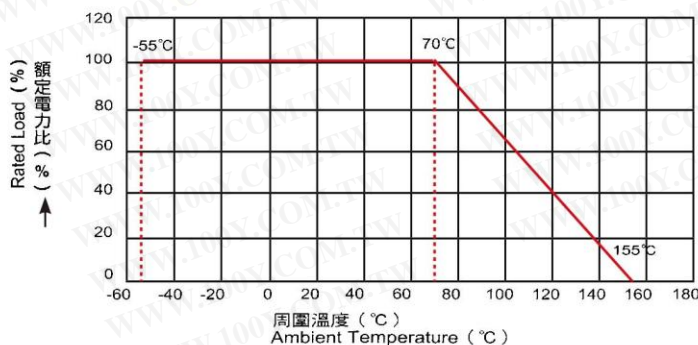


額定功率 Power Rating	尺寸 (公釐) Dimension(mm)				阻值範圍 (Ω) Resistance Range (Ω)	最大工作電壓 Max Working Voltage (RCWV*)	最大負荷電壓 Max Overload Voltage	絕緣耐電壓 Dielectric Withstanding Voltage
	ØD	L	H	Ød±0.05				
1/6W、1/8W	1.8±0.2	3.2±0.5	28±2	0.40	1~10MΩ	200V	400V	300V
1/4W	2.3±0.5	6.5±0.5	28±2	0.45	1~10MΩ	250V	500V	350V
1/2WS	2.3±0.5	6.5±0.5	28±2	0.45	1~10MΩ	250V	500V	350V
1/2W	3.2±0.5	9.0±0.5	26±2	0.50	1~10MΩ	350V	700V	400V
1WS	3.2±0.5	9.0±0.5	26±2	0.50	1~10MΩ	350V	700V	400V
1W	4.5±1.0	11.5±1.0	35±3	0.70	1~10MΩ	500V	800V	450V
2WS	4.5±1.0	11.5±1.0	35±3	0.70	1~10MΩ	500V	800V	450V
2W	5.0±1.0	15.5±1.0	33±3	0.70	1~10MΩ	500V	1000V	450V
3WS	5.0±1.0	15.5±1.0	33±3	0.70	1~10MΩ	500V	1000V	450V
3W	6.0±1.0	17.5±1.0	38±3	0.70	1~10MΩ	500V	1000V	500V

* 額定電壓 = √額定功率 × 阻抗值，額定電壓相當於其最大電壓

* RCWV = √Power rating × Resistance value or max RCWV listed above whichever less.

● 負載遞減曲線 Power Derating Curve



CARBON FILM FIXED RESISTOR (CF)

碳素皮膜固定電阻器

● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
使用溫度範圍 Operating Temperature Range	-55°C~+155°C		
絕緣電阻 Insulation Resistance	10000MΩ minimum		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential respectively specified in the list for 60 seconds	
溫度特性 Temperature Coefficient	詳細列於下表 Specified in below list	試驗溫度：室溫+100°C Test Temperature:Room Temperature+100°C	
短時間過負荷 Short Time Over Load	±(1%+0.05Ω)	額定電壓的2.5倍，5秒 2.5 times rated voltage for 5 seconds	
溫度循環 Temperature Cycling	±(1%+0.05Ω)	-40°C~85°C，5次循環 -40°C~85°C for 5 cycles	
耐濕負荷 Load Life in Moisture	±5%	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs.	
負荷壽命 Load Life	±5%	在溫度70°C，溼度95%RH環境額定電壓1.5小時「ON」，0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
焊錫性 Solderability	覆蓋至少95% At least 95% coverage	溫度255°C，3秒 255°C for 3 seconds	
焊錫耐熱 Heat Resistance of Solder	±(1%+0.05Ω)	溫度350°C，3秒 350°C for 3 seconds	

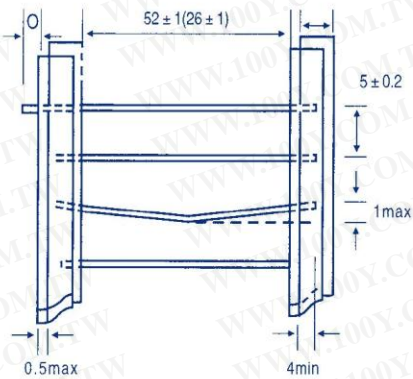
● 溫度特性 Temperature characteristics:

Temperature Coefficient	±350PPM/°C	+0~-500PPM/°C	+0~-700PPM/°C	+0~-1500PPM/°C
Resistance Value	<150KΩ	160KΩ~390KΩ	430KΩ~910KΩ	1MΩ~10MΩ

JUMPER WIRES ZERO OHM (JW)

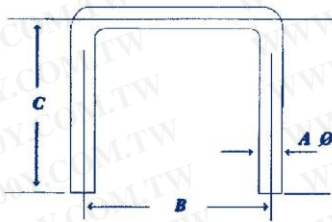
跳繞/零歐姆

跳繞 JUMPER WIRES



类型 TYPE	$L \pm 1$	d $\begin{matrix} +0.01 \\ -0.05 \end{matrix}$
JW05	61.5	0.5
JW06	61.5	0.6
JW07	61.5	0.7

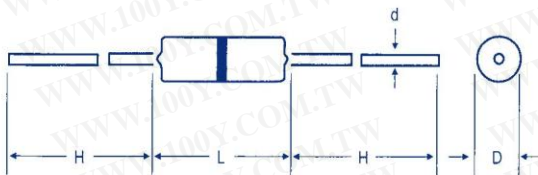
Unit:mm



类型 TYPE	L	D	H	$d \pm 0.05$
ZO 1/6W	3.2 ± 0.2	1.5 ± 0.2	28 ± 2.0	0.45
ZO 1/4W	6.5 ± 0.5	2.3 ± 0.5	28 ± 2.0	0.52

Unit:mm

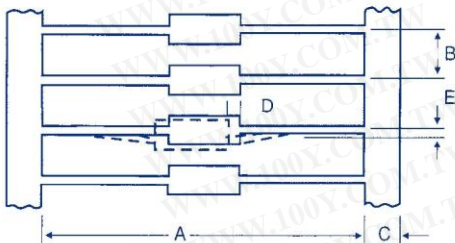
零歐姆 ZERO OHM



瓦特 Wattage	Size Type	A	$B \pm 0.5$	$C \pm 1$	D Max	E Max	
		$\leq 1/4W$	T-26	$26 \begin{matrix} +1 \\ -0 \end{matrix}$	5	5	0.6
		T-52	$52 \begin{matrix} +1 \\ -0 \end{matrix}$	5	5	0.6	1.2
	1/2W	T-52	$52 \begin{matrix} +1 \\ -0 \end{matrix}$	5	5	0.6	1.2
	1W	T-73	$73 \begin{matrix} +1.5 \\ -0 \end{matrix}$	5	5	0.6	1.2

Unit:mm

編帶尺寸 TAPE TYPE DIMENSIONS



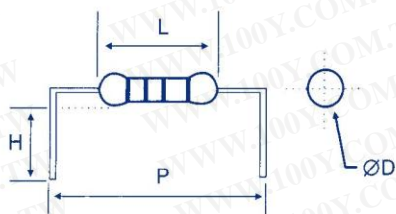
成型編帶尺寸 PN-TYPE RADIAL TAPE TYPE DIMENSIONS

尺寸 DIMENSIONS									
A($\pm 0.05M/M$)	0.50C	0.50 ϕ	0.50C	0.50 ϕ	0.50 ϕ	0.50 ϕ	0.50 ϕ	0.50 ϕ	0.50 ϕ
	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ	0.68 ϕ 1.0 ϕ
B($\pm 0.5M/M$)	2.5M/M	5M/M	7.5M/M	10M/M	12.5M/M	15M/M	17.5M/M	20M/M	22.5M/M
C($\pm 0.5M/M$)	8M/M	8M/M	8M/M	8M/M	8M/M	8M/M	8M/M	8M/M	8M/M

KNP/MOF/FR/MF/CF 成型加工尺寸

KNP/MOF/FR/MF/CF OTHER TYPES

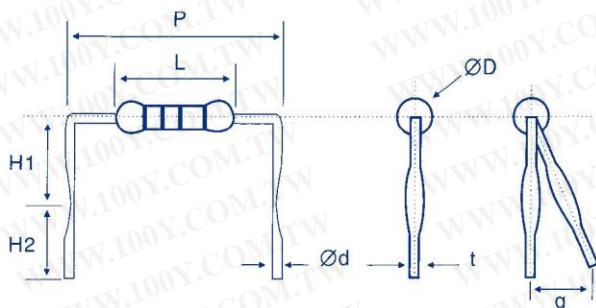
● M型 M-TYPE



瓦特數 Watts	尺寸 DIMENSIONS			
	ØD	L	P±1.0	H±1.0
1/6W;1/4WS	1.8±0.2	3.2±0.2	6	8
1/4W;1/2WS	2.3±0.5	6.5±0.5	10	8
1/2W;1WS	3.2±0.5	9.0±0.5	12.5	10
1W;2WS	4.5±0.5	11.5±1.0	15	10
2W;3WS	5±0.5	15.5±1.0	20	10
3W;5WS	6±0.5	17.5±1.0	25	10
5W	8±1.0	24.5±1.0	30	10

Unit:mm

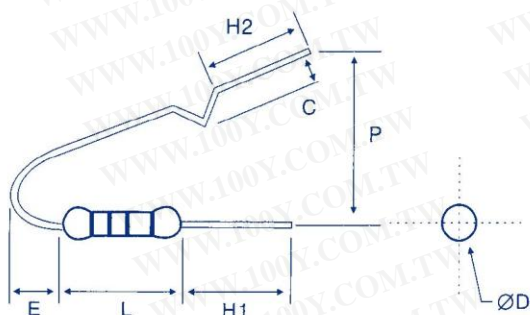
● MB型 MB-TYPE



瓦特數 Watts	尺寸 DIMENSIONS								
	ØD	L	P±1.0	H1±1	H2±1	d±0.05	t±0.2	q Max	
1/2W;1WS	3.2±0.5	9.0±0.5	12.5/15	10.5	4.5	0.6	1.2	3	
1W;2WS	4.5±0.5	11.5±1.0	15	10.5	4.5	0.75	1.25	3	
2W;3WS	5±0.5	15.5±1.0	20	10.5	4.5	0.75	1.25	3	
3W;5WS	6±0.5	17.5±1.0	25	10.5	4.5	0.75	1.25	3	
5W	8±1.0	24.5±1.0	30	10.5	4.5	0.75	1.25	3	

Unit:mm

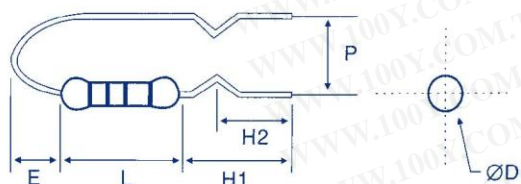
● FK₂型 FK₂-TYPE



瓦特數 Watts	尺寸 DIMENSIONS					
	ØD	L	P±2.0	E Max	H1±1.0	H2±Max
1/2W;1WS	3.2±0.5	9.0±0.5	6	3.5	5-8	7
1W;2WS	4.5±0.5	11.5±1.0	8	3.5	5-8	7
2W;3WS	5±0.5	15.5±1.0	8	3.5	5-8	7
3W;5WS	6±0.5	17.5±1.0	8	3.5	5-8	7

Unit:mm

● FKK型 FKK-TYPE



瓦特數 Watts	尺寸 DIMENSIONS					
	ØD	L	P±1.0	E Max	H1±1	H2±1
1/2W;1WS	3.2±0.5	9.0±0.5	5-7	3.5	8	4.5
1W;2WS	4.5±0.5	11.5±1.0	5-9	3.5	8	4.5
2W;3WS	5±0.5	15.5±1.0	5-9	3.5	8	4.5
3W;5WS	6±0.5	17.5±1.0	5-10	3.5	8	4.5

Unit:mm

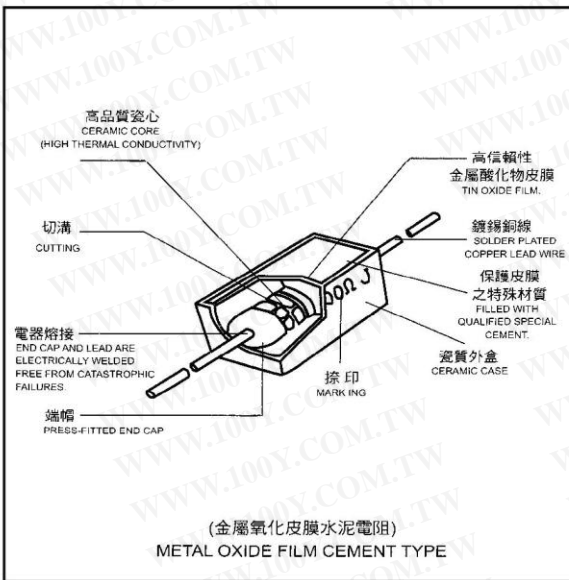
CEMENT TYPE RESISTOR CR-TYPE

水泥型電阻器

FEATURE

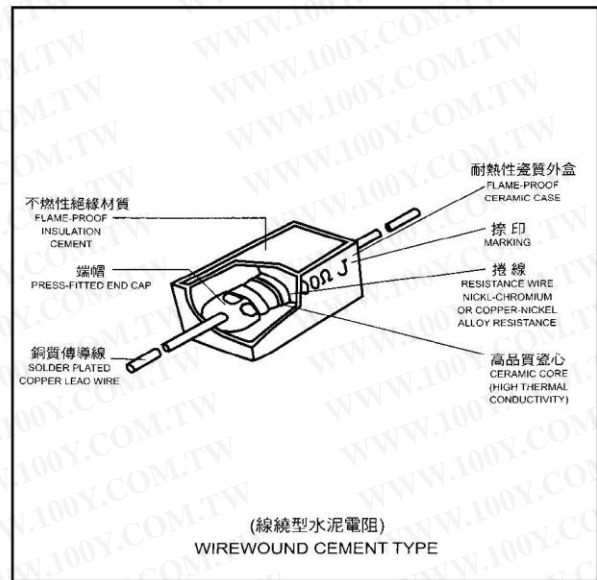
- Low noise
- Excellent insulation being used in P.C.B.
- Instant overload capability. Long term stability.
- Excellent heat dissipation. Small linear temperature coefficient.
- Metal oxide film cutting core can offer high range resistance (1Ω~100KΩ)
- Operating temperature range
Wirewound: -55°C~+155°C
Metal oxide film: -30°C~+150°C
- Rated Ambient Temperature: 2W~10W 70°C
15W The above 25°C

CONSTRUCTION

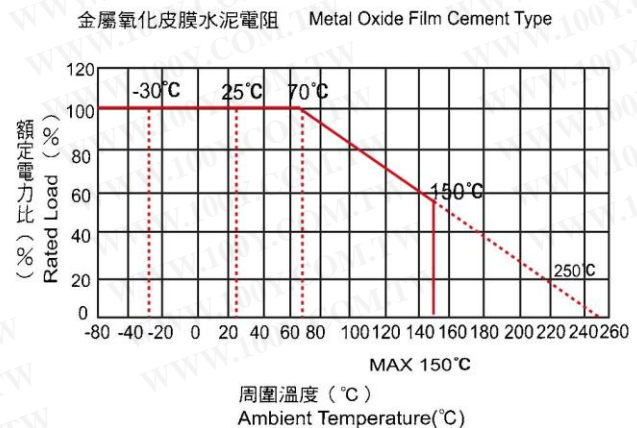
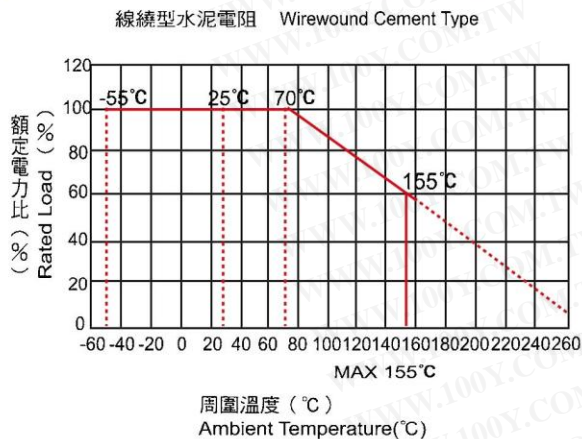


特點

- 雜音低
- 使用於電路板上絕緣度佳
- 耐短時間過負載，阻值長時間無變化
- 耐熱性優電阻溫度係數呈直線變化
- 使用氧化金屬皮膜代替線繞，可製作高阻抗電阻 (1Ω~100KΩ)
- 工作溫度範圍
線繞：-55°C~+155°C
金屬氧化皮膜：-30°C~+150°C
- 定格周圍溫度：2W~10W 70°C
15W以上 25°C



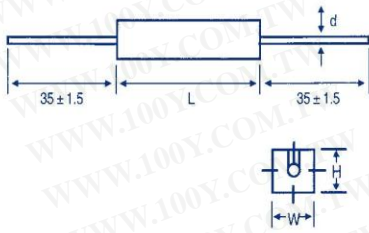
負載遞減曲線 Power Derating Curve



CEMENT TYPE RESISTOR

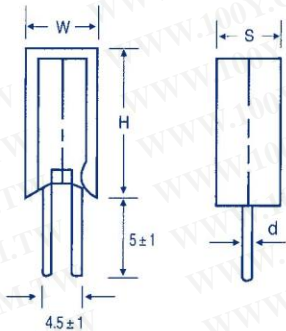
水泥型電阻器

CR-L



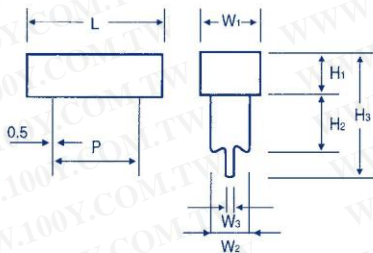
瓦特 Watt	尺寸 Dimensions(mm)			
	L	W	H	d±0.1
2	18±1.0	7.0±1.0	7.0±1.0	0.6
3	22±1.0	8.0±1.0	8.0±1.0	0.8
5	22±1.0	9.5±1.0	9.5±1.0	0.8
7	35±1.5	9.5±1.0	9.5±1.0	0.8
10	48±1.5	9.5±1.0	9.5±1.0	0.8
15	48±1.5	13±1.2	13±1.2	0.8
20	60±2.0	13±1.2	13±1.2	0.8
30	75±2.5	19±1.2	17±1.2	0.8
40	89±2.5	19±1.2	19±1.2	0.8

CR-M



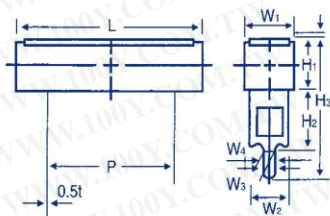
瓦特 Watt	尺寸 Dimensions(mm)			
	W	H	S	d±0.1
2	11.5±1.0	20.5±1.0	7.5±1.0	0.6
3	12.0±1.0	25.0±1.0	8.5±1.0	0.8
5	13.0±1.0	25.0±1.0	9.5±1.0	0.8
7	13.0±1.0	38.0±1.5	9.5±1.0	0.8
10	13.0±1.0	52.0±2.0	9.5±1.0	0.8
10	16.0±1.0	36.0±2.0	11.5±1.0	0.8

CR-YA



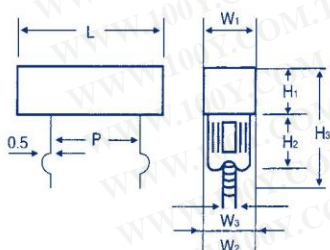
瓦特 Watt	尺寸 Dimensions(mm)							
	L	P±1.5	W1±1	W2±0.2	W3±0.2	H1±1	H2±0.2	H3±1.5
3	24±1.0	12	9.5	5.3	0.9	9.5	10	25.5
5	27±1.0	15	9.5	5.3	0.9	9.5	10	25.5
7	35±1.5	22.5	9.5	5.3	0.9	9.5	10	25.5
10	48±1.5	34	9.5	5.3	0.9	9.5	10	25.5

CR-YB



瓦特 Watt	尺寸 Dimensions(mm)								
	L	P±1.5	W1±1.2	W2±0.2	W3±0.2	W4±0.2	H1±1.2	H2±0.2	H3±1.2
15	48±1.5	32.5	12.5	10	2.7	3	12.5	15	36
20	63±2	44	12.5	10	2.7	3	12.5	15	36

CR-YC

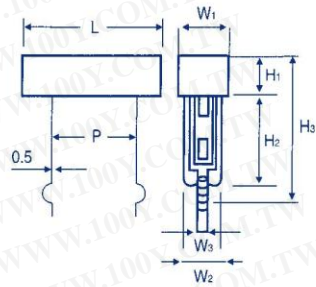


瓦特 Watt	尺寸 Dimensions(mm)							
	L	P±1.5	W1±1	W2±0.2	W3±0.2	H1±1	H2±0.2	H3±1.5
3	24±1.0	12	9.5	7.3	1.6	9.5	10	25
5	27±1.0	15	9.5	7.3	1.6	9.5	10	25
7	35±1.5	22.5	9.5	7.3	1.6	9.5	10	25
10	48±1.5	35	9.5	7.3	1.6	9.5	10	25

CEMENT TYPE RESISTOR

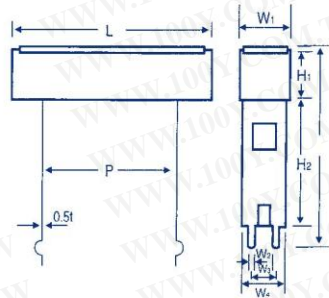
水泥型電阻器

CR-YD



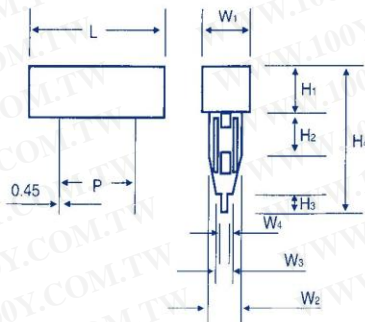
瓦特 Watt	尺寸 Dimensions(mm)							
	L	P±1.5	W1±1	W2±0.2	W3±0.2	H1±1	H2±0.2	H3±1.5
3	24±1.0	12	9.5	7.5	1.6	9.5	25	39
5	27±1.0	15	9.5	7.5	1.6	9.5	25	39
7	35±1.5	22.5	9.5	7.5	1.6	9.5	25	39
10	48±1.5	34	9.5	7.5	1.6	9.5	25	39
15	48±1.5	32.5	12.5	10	3	12.5	30	47.5
20	63±2.0	44	12.5	10	3	12.5	30	47.5

CR-YD1



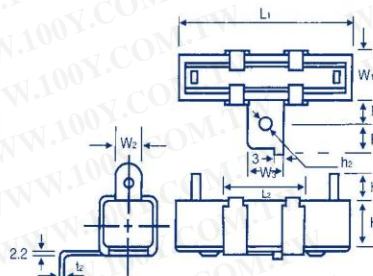
瓦特 Watt	尺寸 Dimensions(mm)								
	L	P±1.5	W1±1	W2	W3	W4	H1	H2	H3
15	48±1.5	32.5	12.5	2	5	10	12.5	30	47.5
20	63±2.0	44	12.5	2	5	10	12.5	30	47.5

CR-YE



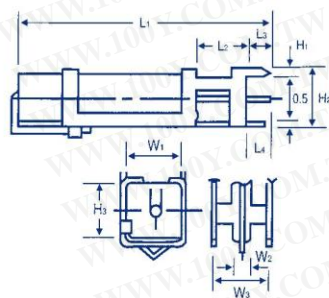
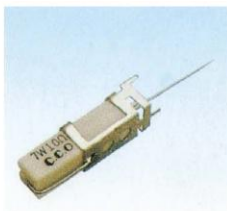
瓦特 Watt	尺寸 Dimensions(mm)									
	L	P±1.5	W1±1	W2±0.2	W3±0.2	W4±0.2	H1±1.0	H2±0.2	H3±0.5	H4±1.5
3	24±1.0	12	9.5	7.4	5.5	3	9.5	7.5	4.5	30.4
5	27±1.0	15	9.5	7.4	5.5	3	9.5	7.5	4.5	30.4
7	35±1.5	22.5	9.5	7.4	5.5	3	9.5	7.5	4.5	30.4
10	48±1.5	35	9.5	7.4	5.5	3	9.5	7.5	4.5	30.4

CR-HG



瓦特 Watt	尺寸 Dimensions(mm)											
	L1	L2±1.0	W3±0.2	P2	P3	h2	h2	W1	W2	H1	H2	
10	48±1.5	23	12	6	8	0.6	4	9.5±1.0	5	9.5±1.0	6±1.5	
15	48±1.5	23	12	7	8	0.8	4	12.5±1.2	6	12.5±1.2	7.5±2.0	
20	63±2.0	23	12	7	10	0.8	4	12.5±1.2	6	12.5±1.2	7.5±2.0	
30	75±2.5	39	18	9	10	0.8	4.2	19±1.5	7.5	19±1.5	10±2.0	
40	88±2.5	29	18	9	10	0.8	4.2	19±1.5	7.5	19±1.5	10±2.0	

CR-V



瓦特 Watt	尺寸 Dimensions(mm)								
	L1	L2±0.2	L3±0.2	H1±0.2	H2±0.2	H3±1.0	W1±1.0	W2±0.2	W3±0.5
5	31±1.0	5	4	1.5	11	9.5	9.5	1.5	11.5
7	49±1.5	10	4	1.5	11	9.5	9.5	1.5	11.5
10	62.5±2	10	4	1.5	11	9.5	9.5	1.5	11.5
15	63.5±2	10	4.5	2.5	14.5	13	13	2.5	15.5
20	75±2	10	4.5	2.5	17.5	13	13	2.5	15.5

CEMENT TYPE RESISTOR

水泥型電阻器

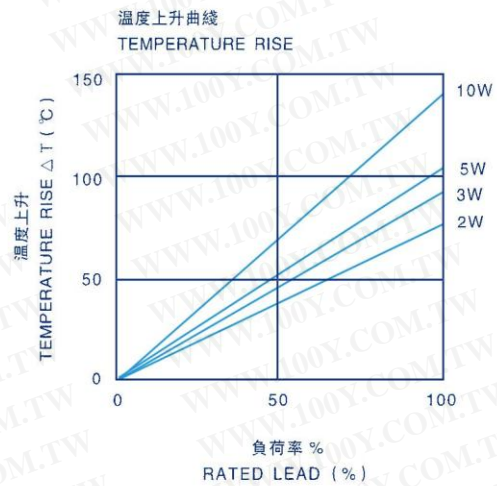
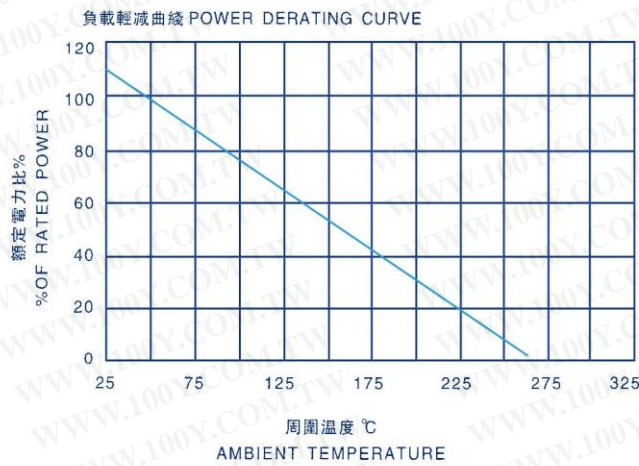
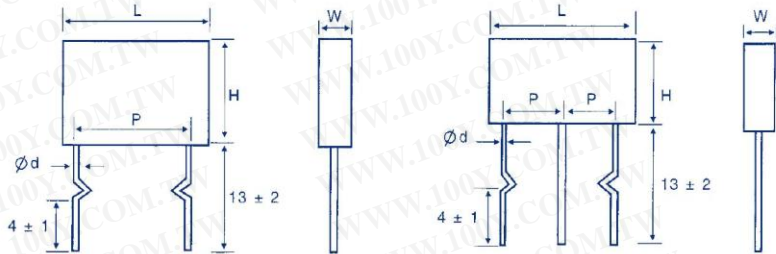
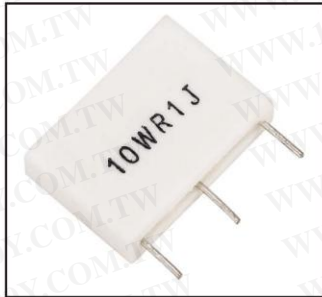
● 特性 Characteristics

特性項目 Characteristics	規格值 Specification	試驗方式 Test Method	JIS.C.5202
溫度特性 Temperature Coefficient	金屬氧化皮膜：±350ppm/°C Metal Oxide Film: ±350ppm/°C 電阻線：±260ppm/°C Resistor Wire: ±260ppm/°C		
短時間過負荷 Short Time Over Load	±(2%+0.05Ω)MAX	定格電力X10倍，5秒。 Rated power X 10 times, 5 seconds	
絕緣阻抗 Insulation Resistance	1000MΩ MIN		
絕緣耐電壓 Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or insulation damage	加AC電壓於各規格中持續1分鐘 AC Potential repectively specified in the list for 60 seconds	
負荷壽命 Load Life	±(5%+0.05Ω)MAX	在溫度70°C，環境額定電壓1.5小時「ON」， 0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs.	
耐濕負荷 Load Life in Moisture	±(5%+0.05Ω)MAX	在溫度40°C，溼度95%RH環境額定電壓1.5小時「ON」， 0.5小時「OFF」持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH. for 1000 hrs.	

NON-INDUCTIVE METAL PLATE RESISTOR

金屬片無感水泥型電阻器 (MPR)

● 尺寸 DIMENSION



類型 TYPE	額定功率 POWER RATING	尺寸 DIMENSIONS(mm)					阻值範圍 RESISTANCE RANGE
		L	H	W	d	P	
	3W	14 ± 1.5	13 ± 1.5	5 ± 1.0	0.8 ± 0.1	10 ± 1	
	5W	14 ± 1.5	18 ± 1.5	5 ± 1.0	0.8 ± 0.1	10 ± 1	
CR-E	3W+3W	26 ± 1.5	13 ± 1.5	5 ± 1.0	0.8 ± 0.1	10 ± 1	0.1Ω ~ 1Ω
	5W+5W	26 ± 1.5	18 ± 1.5	5 ± 1.0	0.8 ± 0.1	10 ± 1	
	7W+7W	26 ± 1.5	20 ± 1.5	5 ± 1.0	0.8 ± 0.1	10 ± 1	

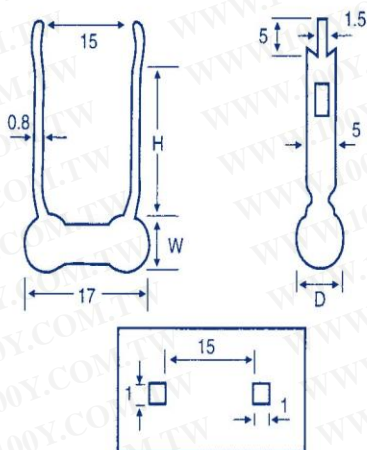
● 特性 Characteristics

特性項目 CHARACTERISTICS	規格值 SPECIFICATIONS	試驗方式 TEST METHODS JIS 5202
溫度特性 TEMPERATURE COEFFICIENT	± 350PPM/C	5.2 條件 B
短時間過負荷 SHORT TIME OVERLOAD	$\Delta R \leq \pm(2\% + 0.05 \Omega)$	2.5倍. 5SEC
耐電壓 DIELECTRIC WITHSTANDING VOLTAGE	500V	5.7
耐溫負荷 LOAD LIFE IN HUMIDITY	$\Delta R \leq \pm(3\% + 0.05 \Omega)$	7.9
負荷壽命 LOAD LIFE	$\Delta R \leq \pm(3\% + 0.05 \Omega)$	7.10
振動試驗 THERMAL SHOCK	$\Delta R \leq \pm(2\% + 0.05 \Omega)$	JIS 5026 6.7

FLAMEPROOF METAL OXIDE FILM RESISTOR

不燃性氧化金屬皮膜固定電阻器

● 尺寸 DIMENSION



品名 Style	額定功率 Power Rating	D(mm)	W(mm)	H(mm)
FA3W-YC1	3W	7.5	7.0	15.0
FA3W-YC2	3W	7.5	7.0	25.5
FA5W-YC1	5W	7.5	7.0	15.0
FA5W-YC2	5W	7.5	7.0	25.5

● 規格 SPECIFICATIONS

品名 Style	額定功率 Power Rating	最大工作電壓 Max Working Voltage	最大負荷電壓 Max Overload Voltage	阻值範圍 Resistance Range	誤差 Tolerance
FA3W	3W	500V	600V	1-100K	K(±10%) J(±5%)
FA5W	5W	500V	800V	1-10K	K(±10%) J(±5%)

METAL GLAZE

HIGH VOLTAGE RESISTOR (MGR)

高壓金屬玻璃釉電阻(高壓電阻)



特點

- 耐高電壓和耐脈衝
- 阻值範圍：100KΩ~39MΩ
- 阻值公差：±1%，±5%

Feature

- Supply high stable against enviroment conditions and overload
- Wide resistance range : 100KΩ to 39MΩ
- Resistance tolerance : ±1% , ±5%

描述 General Specifications



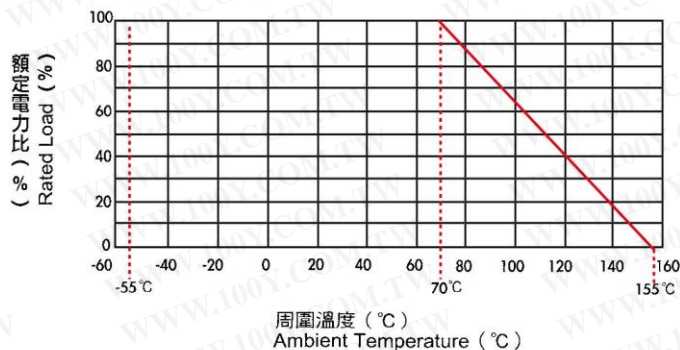
額定功率 Power Rating	尺寸 (公釐) Dimension(mm)				阻值公差 Resistance Tolerance	阻值範圍 (Ω) Resistance Range (Ω)
	ØD	L	H	Ød		
1/4W	2.3±0.5	6.5±0.5	27±3	0.45±0.05	F(±1%), J(±5%)	100K~39M
1/2W	3.2±0.5	9.0±1.0	26±3	0.5±0.05	F(±1%), J(±5%)	100K~39M
1W	4.5±0.5	11.5±1.0	30±3	0.7±0.1	F(±1%), J(±5%)	100K~39M
2W	5.0±0.5	15.5±1.0	33±3	0.7±0.1	F(±1%), J(±5%)	100K~39M

額定功率 Power Rating	最大工作電壓 Max Working Voltage	最大負荷電壓 Max Overload Voltage	絕緣耐電壓 Dielectric Withstanding Voltage	浪涌電壓 Surge Withstanding Voltage	
				100KΩ~1MΩ	1.1MΩ~6.2MΩ
1/4W	500V	700V	500V	100KΩ~1MΩ	3000V
				1.1MΩ~6.2MΩ	4000V
				6.8MΩ~39MΩ	6000V
1/2W	700V	1000V	700V	100KΩ~1MΩ	4000V
				1.1MΩ~6.2MΩ	5000V
				6.8MΩ~39MΩ	8000V
1W	1000V	1400V	1000V	100KΩ~1MΩ	5000V
				1.1MΩ~6.2MΩ	6000V
				6.8MΩ~39MΩ	9000V
2W	1000V	1400V	1000V	100KΩ~1MΩ	8000V
				1.1MΩ~6.2MΩ	9000V
				6.8MΩ~39MΩ	10000V

METAL GLAZE HIGH VOLTAGE RESISTOR

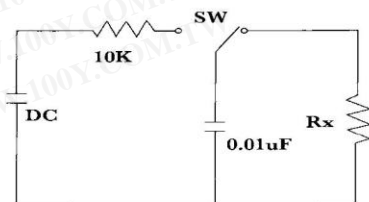
高壓金屬玻璃釉電阻(高壓電阻)

● 負載遞減曲線 Power Derating Curve



● 特性 Characteristics

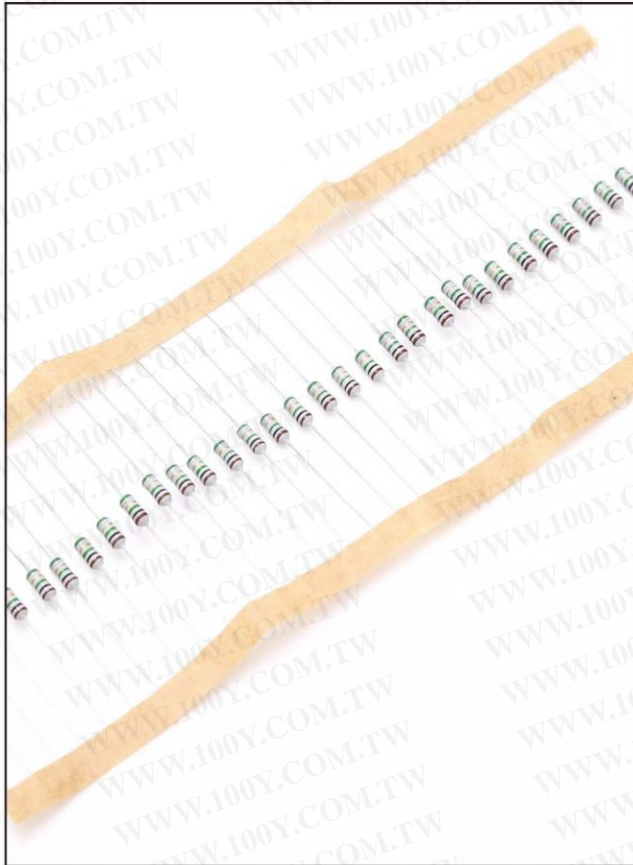
特性項目 Item	規格值 Specification	試驗方法 Test Method
使用溫度範圍 Operating Temperature Range	-55°C ~ +155°C	
溫度特性(JIS C 5202 5.2) Temperature Coefficient	± 250PPM/°C	測試溫度：室溫 + 100°C Test Temperature: Room + 100°C
絕緣耐電壓(JIS C 5202 5.7) Dielectric Withstanding Voltage	無燒損或絕緣性破壞 No flashover or Insulation damage	加AC電壓於各規格中持續60秒 AC Potential respectively specified in the list for 60 seconds
短時間過負荷(JIS C 5202 5.5) Short Time Over Load	± (1% + 0.05Ω)	額定電壓的2.5倍, 5秒 2.5 times rated voltage for 5 seconds
溫度循環(JIS C 5202 7.4) Temperature Cycling	± (1% + 0.05Ω)	-55°C +155°C 5次循環 -55°C ~ +155°C for 5 cycles
耐濕負荷(JIS C 5202 7.9) Load Life in Moisture	± (5% + 0.1Ω)	在溫度40°C 溼度95% RH環境中加額定電壓, 1.5小時「ON」, 0.5小時「OFF」, 持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 40°C, 95% RH for 1000 hrs
負荷壽命(JIS C 5202 7.10) Load Life	± (5% + 0.1Ω)	在溫度70°C 環境中加額定電壓 1.5小時「ON」, 0.5小時「OFF」, 持續1000小時 Rated voltage 1.5hr "on", 0.5hr "off" at 70°C for 1000 hrs
焊錫耐熱(JIS C 5202 6.4) Resistance to Soldering heat	± (1% + 0.05Ω)	溫度 350°C, 3秒 350°C for 3 seconds
焊錫性(JIS C 5202 6.5) Solderability	覆蓋至少95% At least 95% coverage	溫度 255°C, 3秒 255°C for 3 seconds
衝擊耐壓 Surge Withstanding Voltage	無燒損或絕緣性破壞 No flashover or Insulation damage	加入適當電壓2.5秒, "ON", 2.5秒 "OFF" 循環10次 Add to suitable voltage 2.5 seconds "ON", 2.5 seconds "OFF", for 10 times



MRT HIGH VOLTAGE PULSE RESISTOR

Flame-proof

高壓脈沖電阻器



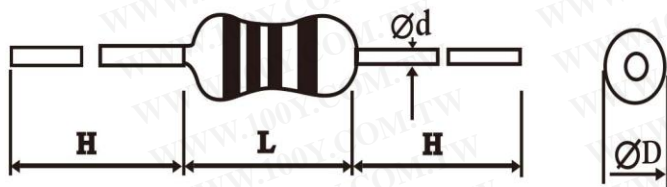
- 特點：
- 耐浪涌特性佳
- 長時間穩定性
- 阻值公差:±5%
- 阻值範圍:100KΩ ~ 5.1MΩ

※顏色 * 標準品: 灰色
 * 第5道色碼區分: “綠色”

- Features
- Surge withstanding voltage
- Long term stability
- Resistance tolerance: ±5%
- Resistance Range: 100KΩ ~5.1MΩ

※ Color: * Standard type in Gray
 * The 5th color band in “Green”

■ 規格: Specifications



額定功率 Power Rating	尺寸 Dimensions			
	L±1.0	φD	φd±0.05	H±2.0
MRT1/4W	6.5	2.3±0.5	0.45	27
MRT1/2W	9.0	3.2±0.5	0.50	26
MRT1W	11.5	4.5±1.0	0.68	25

MRT HIGH VOLTAGE PULSE RESISTOR Flame-proof

高壓脈沖電阻器

種類 Type	定格功率 Rated power	最大工作電壓 Max Working Voltage	最大負荷電壓 Max Overload Voltage	絕緣耐電壓 Dielectric withstanding voltage	沖擊電壓 (浪涌) Surge Withstanding Voltage IEC61000-4-5
1/4W	0.25W	350V	700V	350V	3000V
1/2W	0.5W	500V	1000V	500V	4000V
1W	1W	700V	1400V	500V	5000V

※額定電壓 = $\sqrt{\text{額定功率} \times \text{阻抗值}}$

※RCWV Rated voltage = $\sqrt{\text{Power rating} \times \text{Resistance value}}$

MILLIOHM RESISTOR SHUNT RESISTOR

低阻值電阻器(銅錳綫&銅鎳綫)
(COPPER-MANGANESE WIRE&COPPER-NICKEL WIRE)



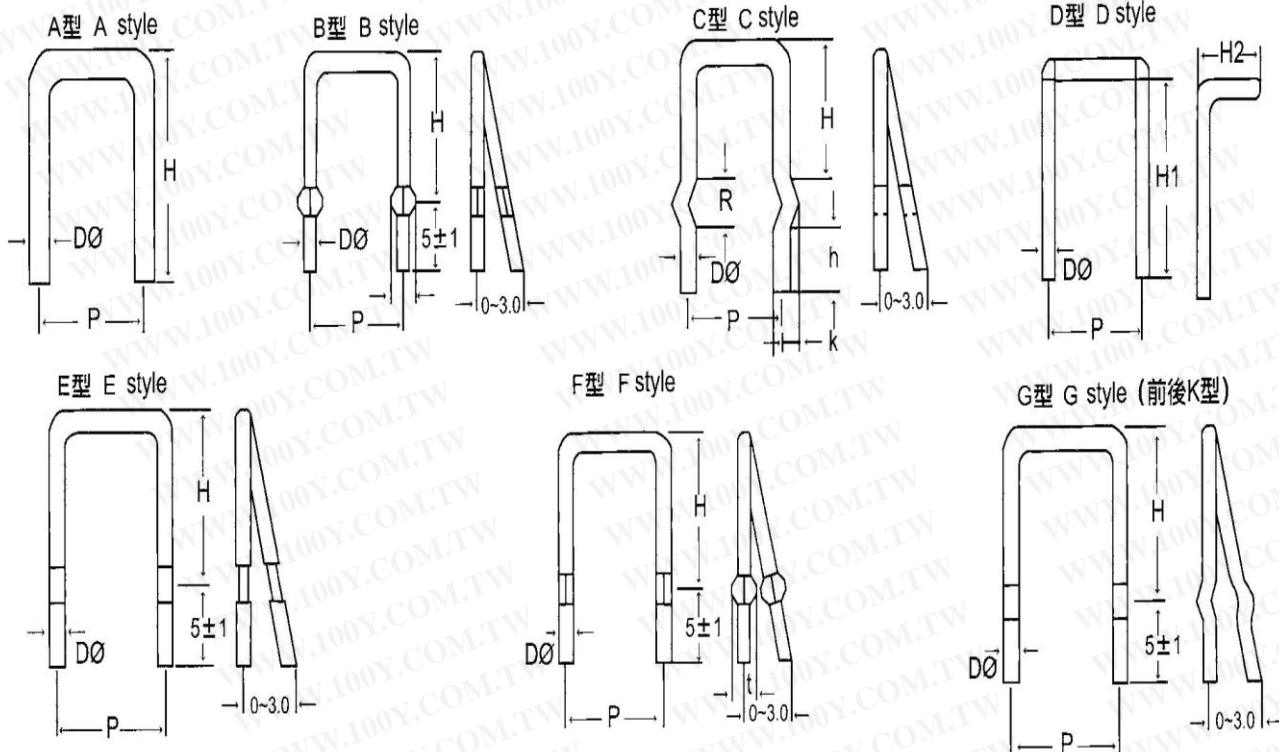
● 規格 Specifications

● 特點

- 適用電源迴路等電流檢出
- 尺寸小且重量輕
- 歡迎客戶訂製
- 使用溫度範圍:-40°C~+200°C

● Feature

- Current detective resistor for power supply circuit, etc.
- Small size and light weight
- Customer's design are welcomed
- Operating temperature range:-40°C~+200°C



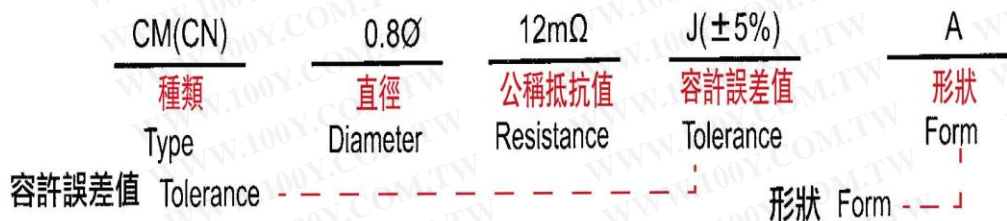
MILLIOHM RESISTOR SHUNT RESISTOR

低阻值電阻器(銅錳綫&銅鎳綫)
(COPPER-MANGANESE WIRE&COPPER-NICKEL WIRE)

● 特性：CHARACTERISTICS

線徑 φd(mm)	最大額定電流 (A) Max Current Rating	阻值範圍 (mΩ) Resistance Range		容許誤差值 Resistance Tolerance	溫度係數 T.C.R(ppm/°c)
		Copper-Manganese	Copper-Nicke		
0.4	2.0	70mΩ~200mΩ	80mΩ~220mΩ	J(±5%) K(±10%)	±100ppm/°c
0.5	2.5	50mΩ~150mΩ	60mΩ~165mΩ		
0.6	3.0	50mΩ~100mΩ	60mΩ~110mΩ		
0.7	4.0	30mΩ~70mΩ	35mΩ~75mΩ		
0.8	4.5	20mΩ~50mΩ	25mΩ~55mΩ		
0.9	5.0	20mΩ~40mΩ	25mΩ~40mΩ		
1.0	5.5	15mΩ~30mΩ	20mΩ~30mΩ		
1.1	6.0	15mΩ~20mΩ	16mΩ~22mΩ		
1.2	7.0	10mΩ~20mΩ	12mΩ~22mΩ		
1.3	7.5	10mΩ~20mΩ	12mΩ~22mΩ		
1.4	8.0	10mΩ~20mΩ	12mΩ~22mΩ		
1.5	9.0	10mΩ~20mΩ	12mΩ~22mΩ		
1.6	9.5	10mΩ~15mΩ	12mΩ~16mΩ		
1.8	11	5mΩ~10mΩ	6mΩ~11mΩ		
2.0	12	5mΩ~10mΩ	6mΩ~11mΩ		
2.3	14	3mΩ~5mΩ	3.5mΩ~5.5mΩ		

● 品名構成 Product Identification



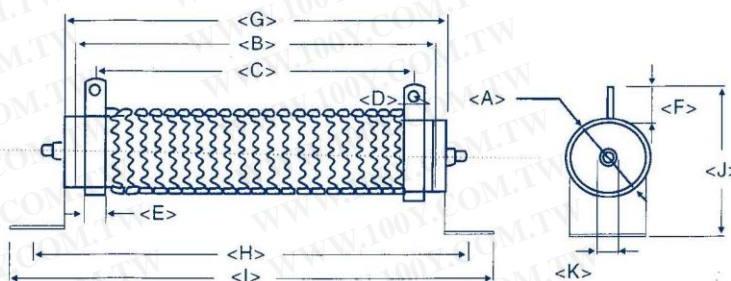
J	K
±5%	±10%

A型	B型	C型	D型
E型	F型	G型	

NON FLAMMABLE WAVE-SHAPE RIBBON-WOUND

電力型不燃性波浪繞綫電阻 (平繞式)

● 尺寸 *DIMENSION*



● 規格型號 *SPECIFICATIONS*

Unit:mm

Power Rating	G ±5	H ±5	A ±1	J ±3	E ±1	D ±1	K ±1
15W	45	65	15	40	6	3.5	4.5
20W	50	70	15	40	6	3.5	4.5
25W	50	80	20	50	6	3.5	5
30W	70	100	20	50	6	3.5	5
40W	87	115	20	50	6	3.5	5
50W	90	115	28	68	9	4.5	6
80W	140	166	28	68	9	4.5	6
100W	170	195	28	68	9	4.5	6
150W	215	240	28	68	9	4.5	6
200W	267	292	28	68	9	4.5	6
250W	267	292	28	68	9	4.5	6
300W	267	300	40	90	10	4.5	6
350W	200	250	50	98	10	6	8
400W	330	365	40	90	10	4.5	6
500W	330	365	50	98	10	6	8
600W	330	365	50	98	10	6	8
700W	400	435	50	95	10	4.5	8
800W	400	435	50	95	10	4.5	8
1000W	300	320	70	135	15	8	8
1500W	415	435	70	135	15	8	8
2000W	510	530	70	135	15	8	8
2500W	600	620	70	135	15	8	8
3000W	600	620	70	135	15	8	8
4000W	430	450	100	185	15	8	8
5000W	500	620	100	185	15	8	8
6000W	600	620	100	185	15	8	8
10000W	600	625	150	350	30	8	10
12000W	660	685	150	350	30	8	10
15000W	660	685	150	350	30	8	10
20000W	1000	1030	150	350	30	8	10

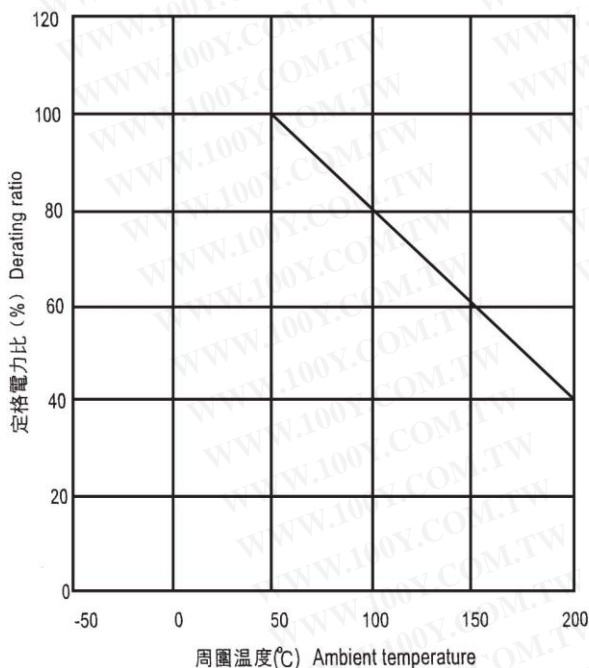
NON FLAMMABLE WARE WARE - SHAPE RIBBON - WOUND

電力型不燃性波浪繞綫電阻 (平繞式)

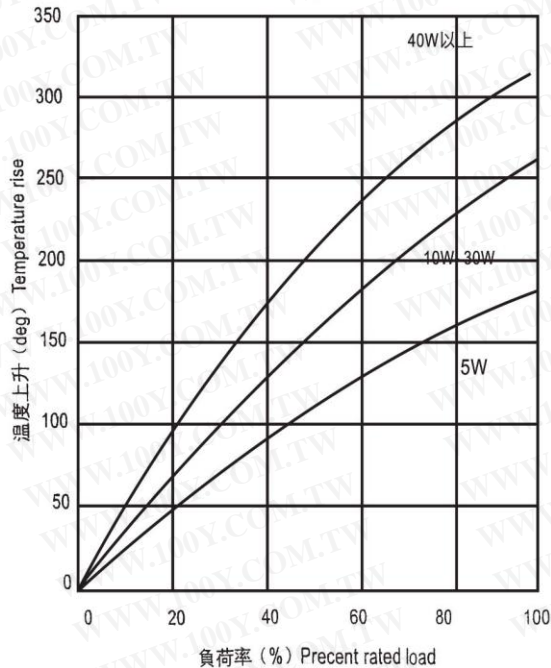
● 特性: CHARACTERISTICS

特性項目 Characteristics	規格值 Specification	檢驗方法 Test method
阻值和阻值的誤差 Resistance and resistance tolerance	Resistance nominal Resistance tolerance $1\Omega \leq R$ $1\Omega > R$	$\pm 5\%$ (J) $\pm 10\%$ (K)
溫度系數 Temperature coefficient	$\pm 200\text{ppm}/^\circ\text{C}$ max.	JIS-C-5202 5-2 b
額定負載 Power rating load	$\Delta R/R \leq \pm(1\% + 0.05\Omega)$ 表面溫度上升 (temperature) 350°C max.	JIS-C-5202 5-4
短時間過載 Short-time overload	定格10倍5秒過載1000% rated power 5 seconds $\Delta R/R \leq \pm(2\% + 0.05\Omega)$	JIS-C-5202 5-5
絕緣阻值 Insulation resistance	DC500V 100M Ω min.	JIS-C-5202 5-6
耐電壓 Dielectric withstanding voltage	AC3000V 1 mintue	JIS-C-5202 5-7

負載減輕曲綫圖 Power Derating Curve



表面溫度上升圖 Temperature Rise



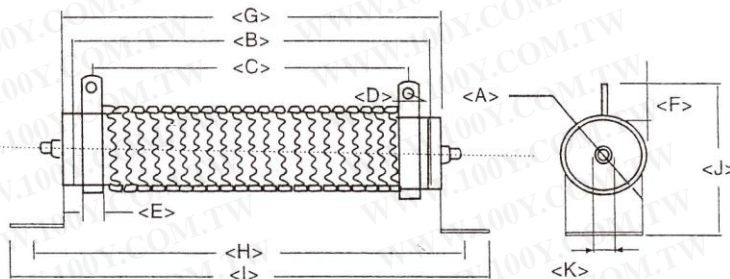
短時間過載表 Short-time Overload Rating

負荷時間 (Second) Load Time	1	2	3	4	5	10	30	60	180	300	600	900
電力增加率 (%) Power Increase	2600	2000	1600	1400	1300	1000	600	450	200	150	120	110

NON FLAMMABLE LOW OHM WIRE WOUND RESISTOR

電力型不燃性低阻繞綫電阻器 (DQ)

DIMENSION



DQR type: 固定電阻, Fixed Resistor
 DSQR type: 可調電阻, Adjustable Resistor
 DNQR type: 無感電阻, Noninductive Resistor

● 描述: General Specifications

定格電力 (W) Power Rating	尺寸 Dimensions (mm)											電阻值範圍(Ω) Resistance Range	備註 Remark
	A±1	B±2	C±2	D±0.1	E±0.2	F±1	G±2	H±2	I±2	J±2	K±0.1		
DQR- 90W	25	110	94	5.2	8	19	120	142	164	58	6	0.1Ω~ 15Ω	
DQR- 90W	28	90	72	5.2	8	17.6	101	125	145	60	6	0.1Ω~ 20Ω	
DQR- 120W	28	110	92	5.2	8	17.6	121	145	165	60	6	0.1Ω~ 25Ω	
DQR- 150W	28	140	122	5.2	8	17.6	151	175	195	60	6	0.1Ω~ 30Ω	
DQR- 180W	28	160	142	5.2	8	17.6	171	195	215	60	6	0.1Ω~ 36Ω	
DQR- 225W	28	195	177	5.2	8	17.6	206	230	250	60	6	0.1Ω~ 40Ω	
DQR- 240W	35	185	167	5.2	8	18	197	219	249	75	8	0.1Ω~ 50Ω	
DQR- 300W	35	210	190	5.2	8	18	222	244	274	75	8	0.3Ω~ 60Ω	
DQR- 375W	40	210	186	5.2	10	17.5	224	245	277	88.8	9	0.3Ω~ 80Ω	
DQR- 450W	40	260	241	5.2	10	17.5	273	294	327	88.8	9	0.3Ω~ 90Ω	
DQR- 600W	40	330	305	5.2	10	17.5	343	362	396	88.8	9	0.3Ω~ 110Ω	
DQR- 750W	50	330	298	6.2	12	17.5	346	367	400	99	10	0.3Ω~ 130Ω	
DQR- 900W	50	400	368	6.2	12	25.5	416	437	470	99	10	0.5Ω~ 170Ω	
DQR- 1000W	50	460	428	6.2	12	25.5	475	497	528	99	10	0.5Ω~ 180Ω	
DQR- 1200W	60	460	420	6.2	15	28	480	502	533	112	10	0.5Ω~ 200Ω	
DQR- 1500W	60	540	500	6.2	15	28	560	582	613	110	10	0.5Ω~ 250Ω	
DQR- 2000W	65	650	615	6.2	15	31	672	696	725	125	10	0.5Ω~ 300Ω	

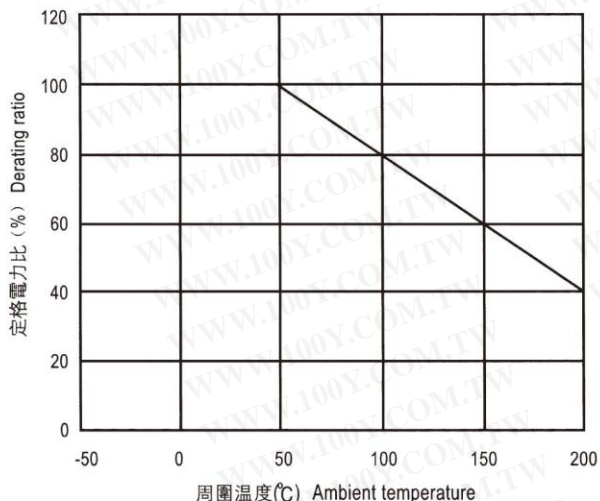
NON FLAMMABLE LOW OHM WIRE WOUND RESISTOR

電力型不燃性低阻繞綫電阻器

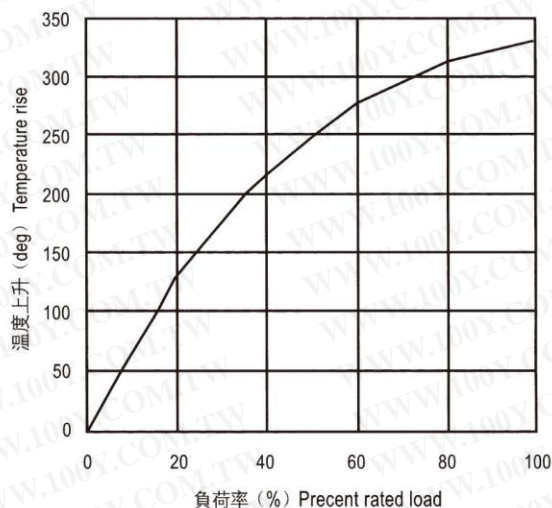
● 特性：CHARACTERISTICS (DQ)

特性項目 Characteristics	規格值 Specification
阻值和阻值的誤差 Resistance and resistance tolerance	Resistance nominal Resistance tolerance $1\Omega > R$ $\pm 10\% (K)$
溫度系數 Temperature Coefficient	$\pm 400\text{ppm}/^\circ\text{C}$ max.
額定負載 Power rating load	$\Delta R/R \leq \pm 1\%$ 表面溫度上升 (temperature) 375°C max.
短時間過載 Short-time overload	定格3倍5秒過載300% rated power 5 seconds $\Delta R/R \leq \pm 2\%$
絕緣阻值 Insulation resistance	DC500V 100M Ω mim.
耐電壓 Dielectric withstanding voltage	AC3000V 1 mintue

負載減輕曲綫圖 Power Derating Curve



表面溫度上升圖 Temperature Rise



短時間過載表 Short-time Overload Rating

負荷時間 (Second) Load Time	5	10	30	60	180	300	600	900	1800
電流增加率 (%) Max.Amps Rated load	400	350	250	200	140	120	110	105	100

NEMA規格續斷周期表 NEMA standard/ON-OFF Cycling

時間周期 Cycling time	5 sec ON	10 sec ON	15 sec ON	15 sec ON	15 sec ON	15 sec ON
電流增加率 (%)	75 sec OFF	70 sec OFF	75 sec OFF	45 sec OFF	30 sec OFF	15 sec OFF
Max.Amps Rated load	290	215	185	160	150	125

NON FLAMMABLE FLAT WIRE WOUND RESISTOR

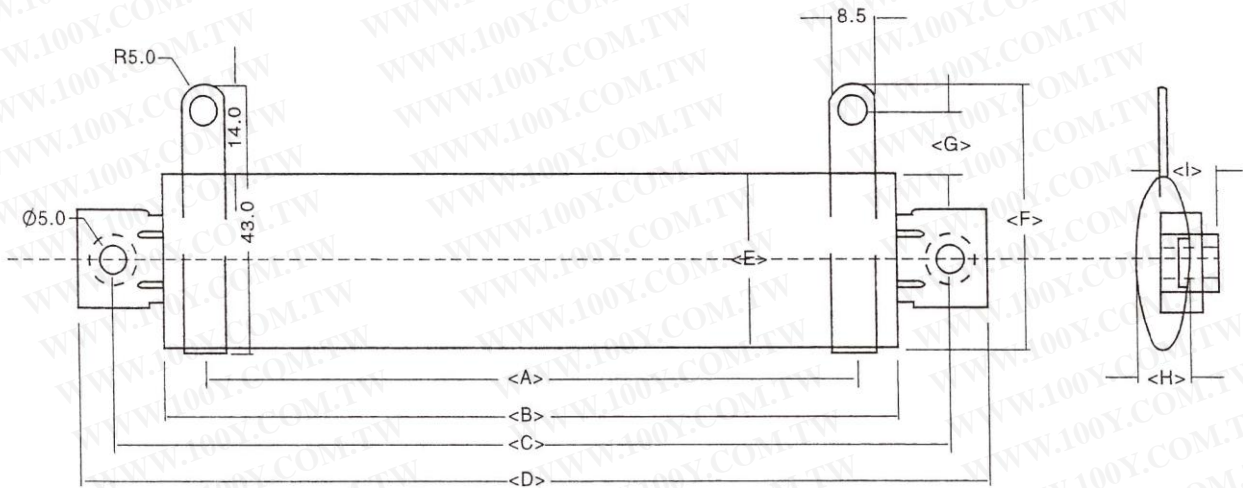
電力型不燃性平型繞綫電阻器

● 描述：GENERAL SPECIFICATIONS (ZR)

ZR type: 固定電阻, Fixed Resistor

NZR type: 無感電阻, Noninductive Resistor

NQZR type: 無感電阻, Noninductive Resistor



定格電力 (W) Power Rating	尺寸 Dimensions (mm)										QZR TYPE(W) Power Rating
	A± 2	B± 2	C± 2	D±0.1	E± 1	F± 1	G± 1	H± 1	1 ± 1		
ZR- 80W	124	140	159	170	28	46	15	10	21.5	120W	
ZR- 100W	144	160	179	190	28	46	15	10	21.5	150W	
ZR- 120W	159	185	204	215	28	46	15	10	21.5	180W	
ZR- 150W	157	185	204	215	35	55	20	10	21.5	225W	
ZR- 200W	192	210	229	240	35	55	20	10	21.5	300W	
ZR- 250W	236	254	273	284	35	55	20	10	21.5	375W	
ZR- 300W	282	300	319	330	35	55	20	10	21.5	450W	

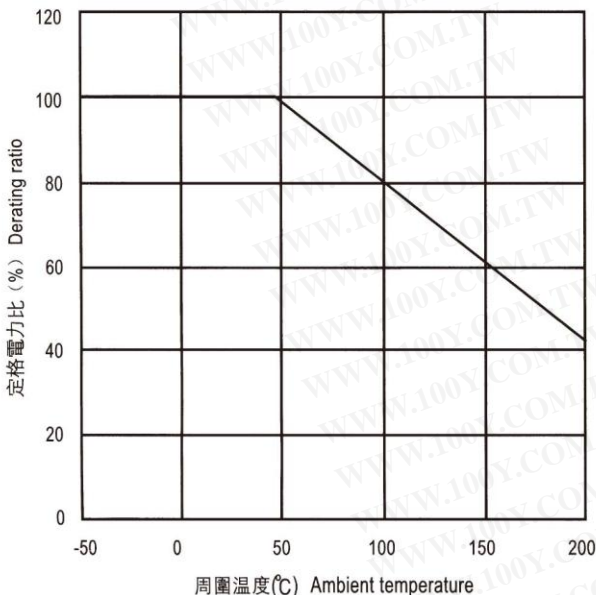
NON FLAMMABLE FLAT WIRE WOUND RESISTOR

電力型不燃性平型繞綫電阻器 (ZR)

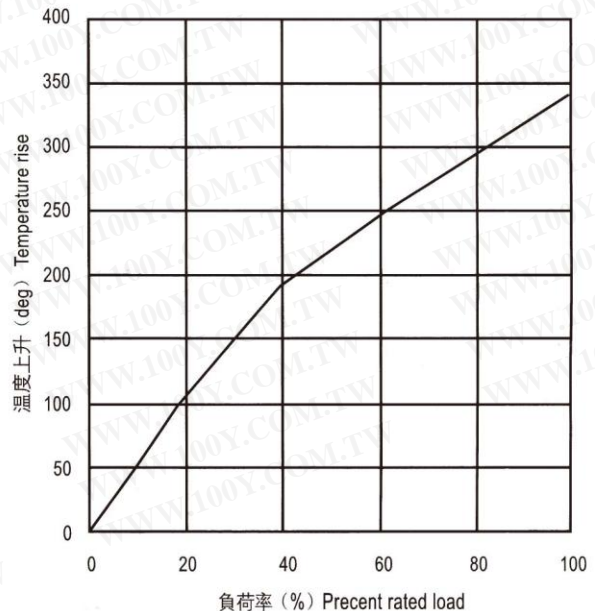
● 特性：CHARACTERISTICS

特性 Characteristics	規格值 Limits
阻值和阻值的誤差 Resistance and resistance tolerance	Resistance nominal Resistance tolerance $1\Omega \leq R$ $\pm 5\%$ (J) $1\Omega > R$ $\pm 10\%$ (K)
溫度系數 Temperature Coefficient	$\pm 200\text{ppm}/^\circ\text{C}$ max.
額定負載 Power rating load	$\Delta R/R \leq \pm(1\% + 0.05\Omega)$ 表面溫度上升 (temperature) 350°C max.
短時間過載 Short-time overload	定格10倍5秒過載1000% rated power 5 seconds $\Delta R/R \leq \pm(2\% + 0.05\Omega)$
絕緣阻值 Insulation resistance	DC500V 100M Ω mim.
耐電壓 Dielectric withstanding voltage	AC2000V 1 mintue

負載減輕曲綫圖 Power Derating Curve



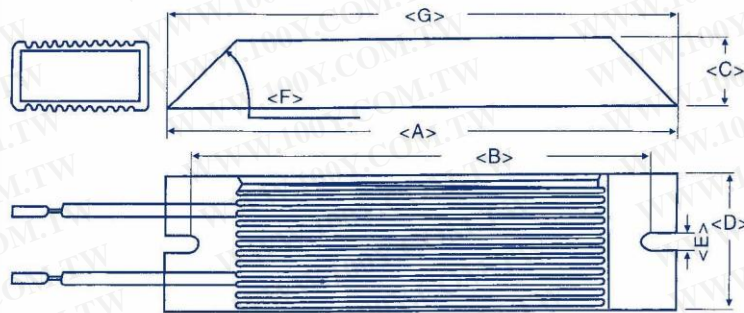
表面溫度上升圖 Temperature Rise



LARGE CAPACITY METAL-CLAD WIRE WOUND RESISOR

電力型鋁殼繞綫電阻器 (AL)

● 尺寸: **DIMENSION**



● 規格型號: **SPECIFICATIONS**

定格電力 (W) Power Rating	尺寸 Dimensions (mm)							形式 Type	電阻值範圍(Ω) Resistance Range
	A±2	B±2	C±1	D±1	E±1	F±1	G±2		
AL-60W	115	100	20	40	5.2	45°	75	A type	0.1~10K
AL-80W	140	125	20	40	5.2	45°	100	A type	0.1~10K
AL-100W	165	150	20	40	5.2	45°	125	A type	0.1~10K
AL-120W	190	175	20	40	5.2	45°	150	A type	0.15~15K
AL-150W	215	200	20	40	5.2	45°	175	A type	0.15~15K
AL-200W	165	150	30	60	5.2	60°	125	A type	0.3~20K
AL-300W	215	200	30	60	5.2	60°	175	A type	0.5~30K
AL-400W	265	250	30	60	5.2	60°	225	A type	0.5~30K
AL-500W	240	225	40	80	5.2	60°	200	A type	0.5~30K
AL-600W	335	320	30	60	5.2	60°	295	A type	1~50K
AL-800W	400	385	40	80	5.2	60°	360	B type	1~50K
AL-1000W	400	385	50	100	30	5.2	380	B type	1~100K

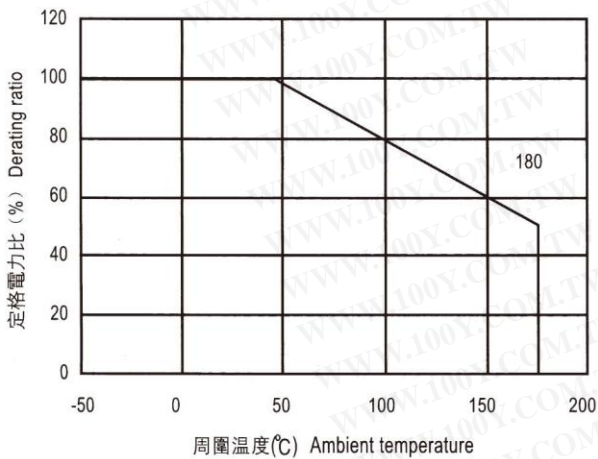
LARGE CAPACITY METAL-CLAD WIRE WOUND RESISOR

電力型鋁殼繞綫電阻器

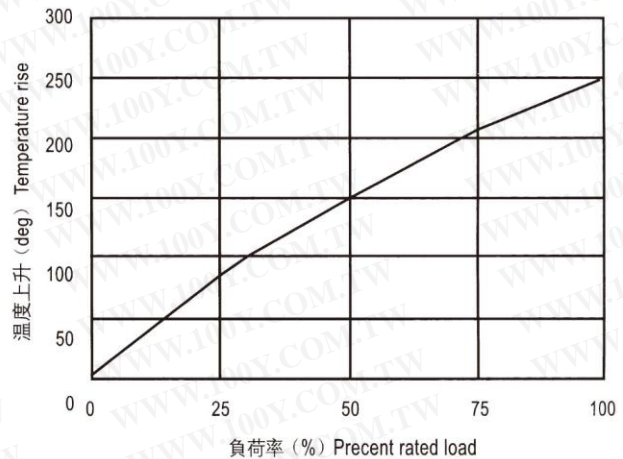
● 特性：CHARACTERISTICS (AL)

特性 Characteristics	規格值 Limits
阻值和阻值的誤差 Resistance and resistance tolerance	Resistance nominal Resistance tolerance $1\Omega \leq R$ $\pm 5\%$ (J) $1\Omega > R$ $\pm 10\%$ (K)
溫度系數 Temperature Coefficient	$\pm 200\text{ppm}/^\circ\text{C}$ max.
額定負載 Power rating load	$\Delta R/R \leq \pm(1\% + 0.05\Omega)$ 表面溫度上升 (temperature) 350°C max.
短時間過載 Short-time overload	$\Delta R/R \leq \pm(2\% + 0.05\Omega)$
絕緣阻值 Insulation resistance	DC500V 100M Ω mim.
耐電壓 Dielectric withstanding voltage	$\Delta R/R \leq \pm(1\% + 0.05\Omega)$ AC2000V 1 mintue

負載減輕曲綫表 Power Derating Curve



表面溫度上升圖 Temperature Rise



ALUMINUM HOUSE WIRE WOUND RESISTOR (AH)

黃金鋁電阻

● 尺寸: **DIMENSION**



● 規格型號: **SPECIFICATIONS**

定格電力 (W) Power Rating	尺寸 Dimensions (mm)										電阻值範圍(Ω) Resistance Range
	A±1	B±1	C±0.8	D±0.1	E±0.1	F±0.1	G±1	H±0.2	I±0.3	J±0.1	
AH-5W	25	15.3	11.3	16.5	8.5	8.2	2.2	1.6	2.4	2.2	1~5K
AH-10W	29	19	14.3	20.4	10	10	5	2	2	2.2	1~10K
AH-25W	53	27.5	18.6	27	14.9	14.9	6.5	2.2	3.2	2.2	1~25K
AH-50W	70	51	39.2	29.2	16	15.5	7	2	3.2	2.2	1~50K
AH-85W	95	75	38	29.3	18.8	15.5	7	2.2	3.4	2.2	1~85K
AH-100W	122	90	70	72	16.5	45	20	5	5.2	m5*25	1~100K

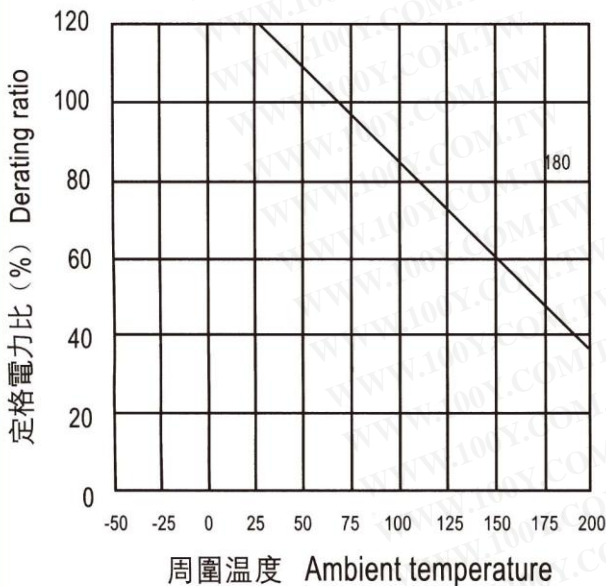
ALUMINUM HOUSED WIRE WOUND RESISTOR (AH)

黃金鋁殼繞線電阻

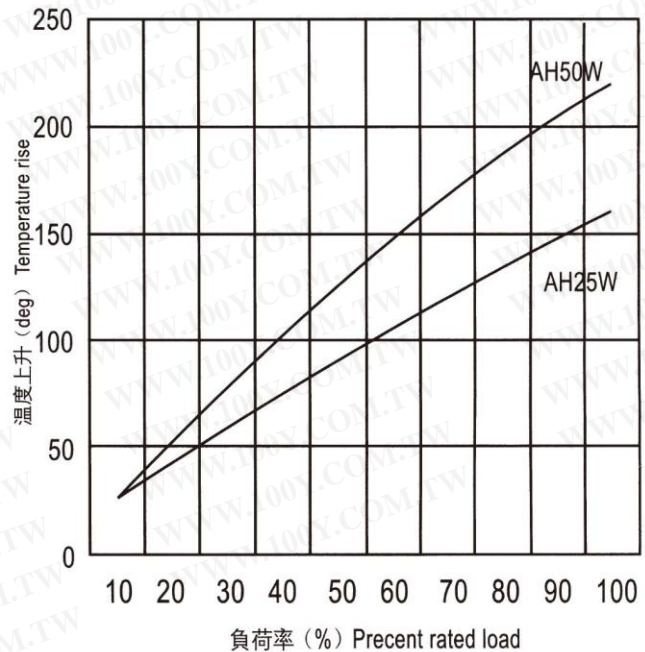
● 特性：CHARACTERISTICS

特性 Characteristics	規格值 Limits
阻值和阻值的誤差 Resistance and resistance tolerance	Resistance tolerance ±1% (F) ±5% (J) ±2% (G) ±10% (K)
溫度系數 Temperature Coefficient	$R < 0.05\Omega \pm 200\text{ppm}/^\circ\text{C}$ $0.05\Omega \leq R < 0.1\Omega \pm 100\text{ppm}/^\circ\text{C}$ $0.1\Omega \leq R < 400\Omega \pm 50\text{ppm}/^\circ\text{C}$ $400\Omega \leq R \pm 30\text{ppm}/^\circ\text{C}$
額定負載 Power rating load	$\Delta R/R \leq \pm(1\% + 0.05\Omega)$
短時間過載 Short-time overload	五倍五秒 $\Delta R/R \leq \pm(0.5\% \pm 0.05\Omega)$
絕緣阻值 Insulation resistance	DC500V 1000 MΩ mim.
耐電壓 Dielectric withstanding voltage	$\Delta R/R \leq \pm(0.2\% + 0.05\Omega)$ AC2000V 1 mintue

負載減輕曲綫表 Power Derating Curve



表面溫度上升曲綫圖 Temperature Rise Curve



※編帶T與散裝P之關係說明:

The description between T and P (Bulk Type):

Figure A 圖 A

P : total length P : 總長度

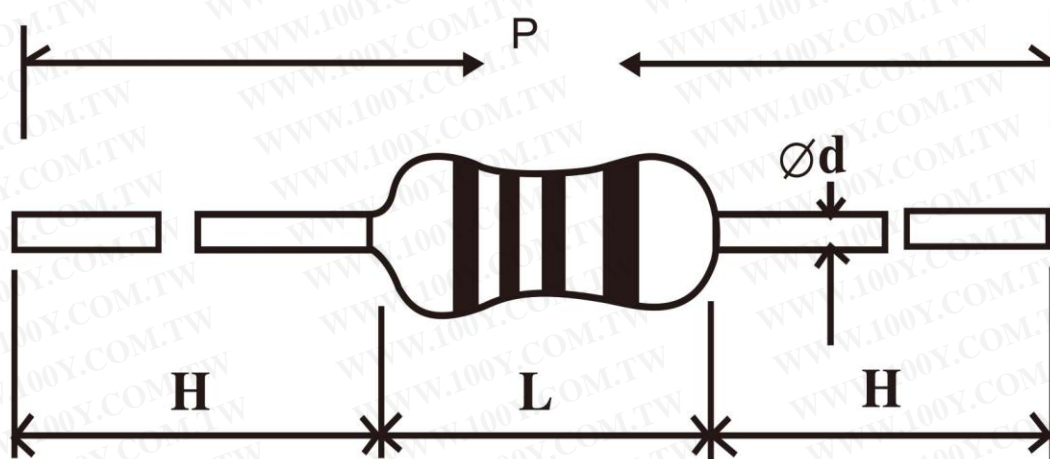
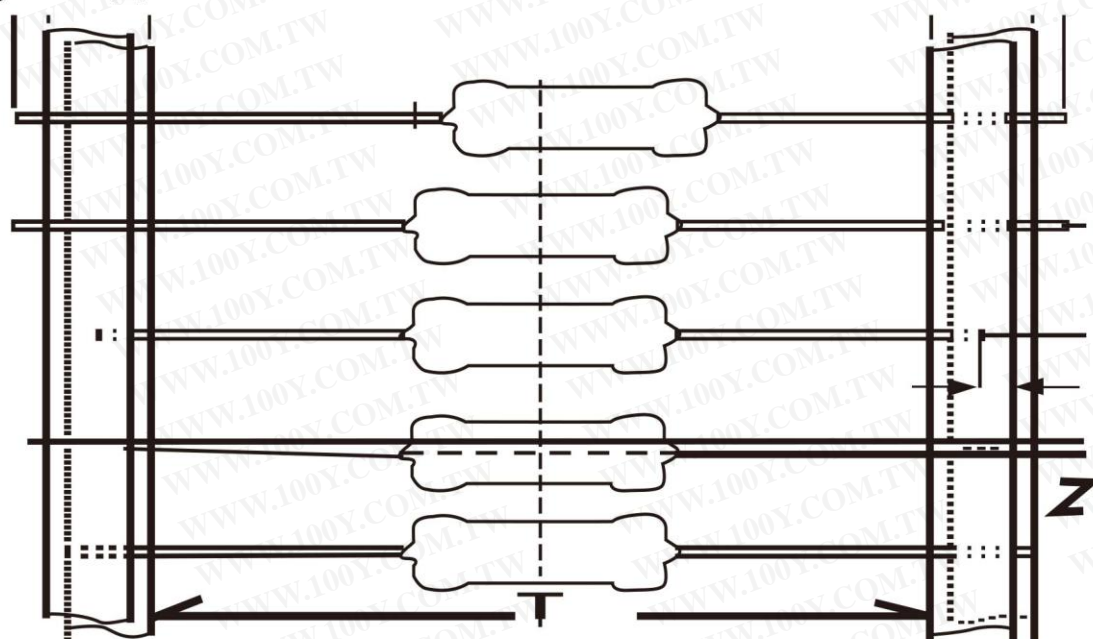


Figure B 圖 B



T: Inner width

T: 內寬

Figure C 圖 C

Type 種類		帶裝 T (inner width) 內寬	帶裝 P Total length 全長
Normal Size 普通型	Small Size 小型化		
1/8W 1/4W	1/4WS 1/2WS	T26	34
		T52	60
1/2W	1WS	T52	60
1W	2WS	T52	60
		T65	73
2W	3WS	T52	60
		T73	81
		T84	94
3W	5WS	T84	94
5W		T84	94

說明:

Description

1. 編帶尺寸: T 代表編帶 例如:T52, 編帶內寬 52mm, 請參見圖 B。

Dimension of Taping: T means taping. For example: T52, it means the inner width is 52mm.

Please kindly see the figure B.

2. 散裝(全長): P 代表散裝 例如:P60 全長 60mm,請參見圖 A。

Bulk packing: P means bulk packing. For example: P60, it means the total length for bulk type is 60mm. please kindly see the figure A.

3. 編帶與散裝換算: 一般將編帶尺寸加 8mm, 等於全長 例:T52 +8=60 (全長), 請參見圖 C。

The conversion from T to P: T (_) +8mm = the total length of "P"

For example : T52 + 8 = 60. Please kindly see the figure C.

包装数量对照表 PACKING INFORMATION

種類 (TYPE)	瓦特 (Watt)	型号 (PACKING TYPE)	PCS/箱 (BOX)	盒/箱 (BOX/ CARTON)	PCS/盒	Nw(Kg)	Gw(Kg)	體積(Inch)
CF;MF;FR	1/6W;1/8W (1/4WS;1/16W)	T/B 0.43mm	100K	20	5K	10.9	11.9	17.6*10.9*12.9
		P	200K	10	20K	20	21	17*12*10.3
		□	200K	10	20K	12	13	17*12*10.3
		T26	120K	24	5K	11	12	16.8*10.8*9.3
CF;MF MOF; FR	1/4W (1/2WS;0.25W)	T/B 0.43mm(Cu)	75K	15	5K	11.5	12.5	17.6*10.9*12.9
		P0.43mm	100K	10	10K	15.5	16.5	17*12*10.3
		T/B 0.46mm	75K	10	10K	12.3	13.3	17*12*10.3
		□	100K	10	10K	12.5	13.5	17*12*10.3
		T26	80K	16	5K	12	13	16.8*10.8*9.3
		F;FK2不剪腳	50K	10	5K	9.5	10.5	17*12*10.3
		F;FK2剪腳	100K	10	10K			17*12*10.3
CF;MF MOF; KNP;FR	1/2W (1WS;0.5W)	T/B 0.50mm	30K	15	2K	9.4	10.4	17.6*10.8*11.1
		T/B 0.52mm(Cu)	30K	15	2K	11	12	17.6*10.8*11.1
		P	50K	10	5K	18	19	17*12*10.3
		□	50K	10	5K	15	16	17*12*10.3
		MB	40K	10	4K	13.5	14.5	17*12*10.3
		F;FK1;FK2;FKK不剪腳	40K	10	4K	14.5	15.5	17*12*10.3
		F;FK1;FK2;FKK剪腳	50K	10	5K	14.5	15.5	17*12*10.3
CF;MF MOF; KNP;FR	1W (2WS)	T/B 0.65mm	15K	15	1K	9.9	10.9	17.6*10.8*11.1
		T65	8K	8	1K	6.5	7.5	18.6*11*8.3
		P60	20K	10	2K	14	15	17*12*10.3
		P73	20K	10	2K	16	17	17*12*10.3
		MB	20K	10	2K	12.5	13.5	17*12*10.3
		□	30K	10	3K	12	13	17*12*10.3
		F;FK1;FK2;FKK不剪腳	15K	10	1.5K			17*12*10.3
		F;FK1;FK2;FKK剪腳	30K	10	3K	13	14	17*12*10.3
CF;MF	2W (3WS)	T/B 0.65mm	15K	15	1K	14.5	15.5	17.6*10.9*12.9
		T73	8K	8	1K	8.5	9.5	18.7*11*8.3
		T94	8K	8	1K			18.7*11*8.3
		P60	20K	10	2K	20	21	17*12*10.3
		P81	15K	10	1K	17.5	18.5	17*12*10.3
		P94	15K	10	1K			17*12*10.3
		MB	20K	10	2K	18	19	17*12*10.3
		F;FK1;FK2;FKK不剪腳	10K	10	1K	12	13	17*12*10.3
		F;FK1;FK2;FKK剪腳	20K	10	2K	20	21	17*12*10.3
MOF;FR	2W (3WS)	T/B52	15K	15	1K	16	17	17.6*10.9*12.9
		T73	8K	8	1K	8.5	9.5	18.7*11*8.3
		T84	8K	8	1K			18.7*11*8.3
		P60	18K	10	1K			17*12*10.3
		P81	10K	10	1K			17*12*10.3
		P94	10K	10	1K			17*12*10.3
		MB	20K	10	2K	18	19	17*12*10.3
		F;FK1;FK2;FKK不剪腳	10K	10	1K	12	13	17*12*10.3
		F;FK1;FK2;FKK剪腳	20K	10	2K	20	21	17*12*10.3

KNP	2W (3WS)	T/B52	15K	15	1K	16	17	17.6*10.9*12.9
		T73	6.4K	8	0.8K			18.7*11*8.3
		T84	6.4K	8	0.8K			18.7*11*8.3
		P60	20K	10	2K			17*12*10.3
		P81	10K	10	1K			17*12*10.3
		P94	10K	10	1K			17*12*10.3
		MB	20K	10	2K	18	19	17*12*10.3
		F;FK1;FK2;FKK不剪腳	10K	10	1K	12	13	17*12*10.3
		F;FK1;FK2;FKK剪腳	20K	10	2K	20	21	17*12*10.3
CF;MF MOF; KNP;FR	3W (5WS5*16)	T84	4K	8	0.5K	9	10	18.7*11*8.3
		P94	8K	10	0.8K	14	15	17*12*10.3
		MB	10K	10	1K	16.5	17.5	17*12*10.3
		FKK;FK1	10K	10	1K	16	17	17*12*10.3
CF;MF MOF;KNP;FR	5W(5WS7*23)	T84	2K	8	0.25K			18.7*11*8.3
		P94	4K	10	0.4K	16.5	17.5	17*12*10.3
		MB	4K	10	0.4K			17*12*10.3
KNP	5WS	T/R55	5K	5	1K	10	11	17.5*11.8*11.8
		T/R55	7.5	15	0.5K	13.5	14.5	17.6*10.8*11.1

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)