CCOHM WIRE WOUND RESISTORS

承認書

(APPROVAL SHEET)

客戶名稱 **Client**	
品　　名 **Description**	KNP 7WS & 9WS
規　　格 **Specification**	
料　　號 **Part No**	
備　　注 **Remark**	

核　準 **Approval**	校　對 **Check By**	主　辦 **Prepared By**
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CCOHM WIRE WOUND RESISTORS

1.適用範圍 Applicable Scope

此基準是供應家電,電腦,資訊用之不燃性塗裝型繞線電阻器之規格。

Applicable Scope: This KNP/NKNP type standard specification is for use in consumer electronics computer, telecommunication equipments.....etc

2.形名 Part Number

依據其種類、額定電力、端子型狀、特性、公稱電阻及容許誤差等分別注明。

It is composed by Type, Rated Wattage, Terminal Form, Characteristic, and Nominal Resistance and Tolerance.e.g.

KNP	10W	P(M.F)	T-2(±350PPM/℃)	Ω	J(±5%)
種類	額定電力	端子形狀	特性	公稱電阻值	容差
Type	Rate Wattage	Terminal Form	Characteristic	Nominal Resistance	Tolerance

2-1.種類 Type

不燃性塗裝型繞線有感電阻器以 KNP 表示之, 塗裝型繞線無感電阻器以 NKNP 表示。

Wire Wound Resistor is called "KNP", Non-Inductive Resistor is called "NKNP"

2-2.額定電力 Rated Wattage

額定電力(W)以數字表示，如 1/2W、1W、2W、.....40W。

Shown by "W"、such as 1/2W 、1W、2W、.....40W。

2-3.端子形狀 Terminal Form

視端子區分為 P 形、M 形、F 形。

Upon the shape of terminal, it has P Form and M form , F form

2-4.特性 Characteristic

溫度系數以 "T" 表示之,如:

Temperature Coefficient is its character represented by "T", such as:

±350PPM/℃

2-5.公稱電阻值 Nominal Resistance:

Ω,KΩ為單位,依據 JIS-C6402 為適用原則(E-24 Series)。

Ω,KΩ are its unit which is in accordance with JIS-C6402(E-24)series.

2-6.電阻值及容許誤差 Tolerance

在室溫中依檢測器測量,應在指定電阻值之容許誤差以內。

It is measured by Bridge-method at room temperature and expressed by a capital letter.

F ± 1% G ±2% J ±5%

2-7.使用 CN-49W ϕ0.32 ㎜線材

3,額定功率 Rated power

額定電力是周圍溫度 70℃以下可連續使用之負載電力最大值數,且應使機械性能與電氣性能滿足。又周圍溫度超越上記溫度時,依造圖一之電力輕減曲線而定。

Rated power is the value of Max load voltage specified at the ambient temperature of 70℃ and shall meet the functions of electrical and mechanical performance. When the ambient temp.surpasses above

Mentioned temperature. The value declines as following
DERATING CURVE:

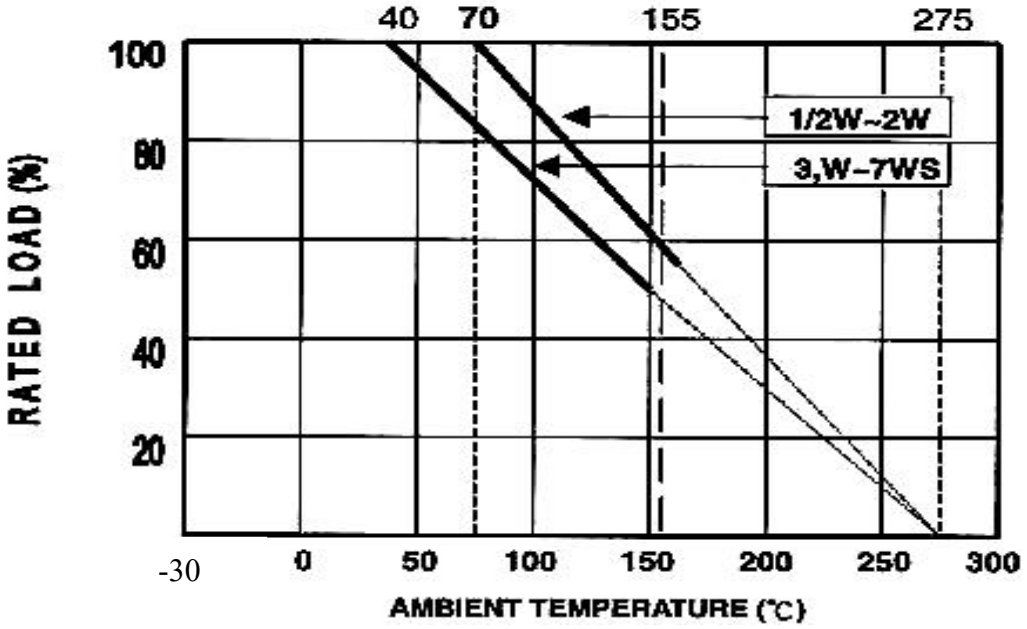


圖 1: 負載減輕曲線

3-1.額定電壓 Rated Voltage

依公式 $E=\sqrt{PR}$ 求出連續使用額定電壓,如額定電壓超出最高使用電壓,
則以最高使用電壓為連續使用額定電壓

It is calculated as the following formula $E=\sqrt{PR}$

However, in case the voltage calculated exceeds the maximum load voltage, such the maximum load. Voltage shall be regarded as its rated voltage, means whichever less.

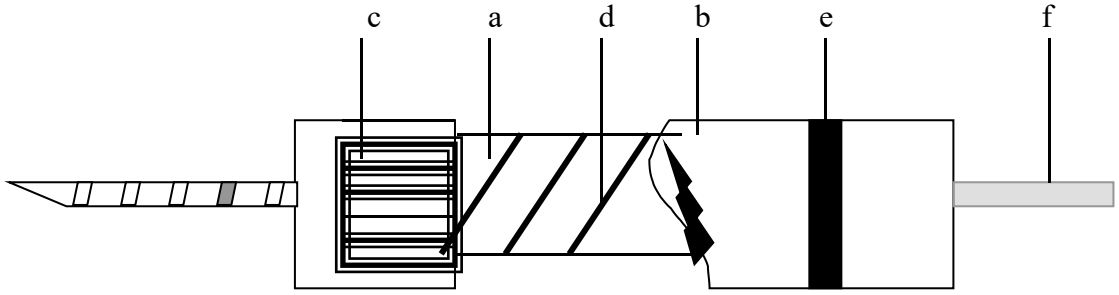
E=連續使用額定電壓 E=Rated Continuous Working Voltage(V)
P=額定功率 P=Rated Power(W)
R=公稱電阻值 R=Nominal Resistance Value(Ω)

3-2 備注

1. K N P resistance range : 0.01Ω-1KΩ (N K N P: 0.01Ω-100Ω).
2. 無感繞線電阻(N K N P)的特性說明:

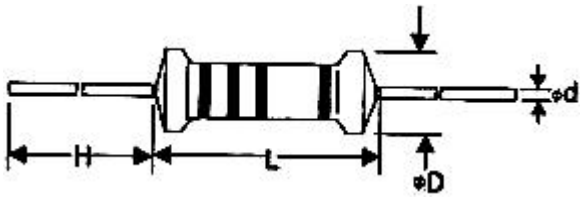
本項產品可減少各种電子回路的雜訊或瞬間突破,如用在交換式電源供應器或不斷電設備之電流感應器(Current Sensory)或突破吸收部分(Snubbed)時, 可將雜訊干擾降至最低限度,提高振頻率或縮小前產品的體積,節省材料費用,並可防止振蕩,且突破降低自然可減少電磁波之干擾。

4. 構 造 CONSTRUCTOION



a. 高熱傳導瓷心 CERAMIC CORE (HIGH CONDUCTIVITY)
b. 不燃性絕緣塗漆 (NONFLAME PAINT WITH SOL VENT-PROOF)
c. 壓合度良好之高信賴性端帽 END CAP(HIGH RELIABILITY FITTING BY ORIGINAL CAP-PRESSING METHOD)
d. 高穩定性鎳鉻合金線原材料 COPPER-NICKEL ALLOY WIRE WOUND FILM(HIGH STABILITY)
e. 符全 MIT& EIA 規定之標準色碼帶 COLOR CODE(PER MIL&ELA STAND ARDS PERMANENT)
f. 鍍錫導線 LEAD WIRE

5.定格及尺寸 SPECIFICATIONS



額定電力 POWER RATING	DIMENSION(㎜)					阻值範圍 RESISTANCE RANGE
	L	D	H	d ±0.05	DIELECTRIC WITHSTANDING	
1/2W/1WS	9.0 ±0.5	3.2 ±0.5	26 ±2.0	0.60	300	0.01Ω-100Ω
1W/2WS	11.0 ±1.0	4.2 ±0.5	35 ±3.0	0.70	350	0.01Ω-360Ω
2W/3WS	15.0 ±1.0	5.0 ±0.5	33 ±3.0	0.75	500	0.01Ω-470Ω
3W/5WS	17.0 ±1.0	6.0 ±0.5	38 ±3.0	0.75	500	0.01Ω-1KΩ
5W/7WS	24.0 ±1.0	8.0 ±0.5	35 ±3.0	0.75	700	0.01Ω-1KΩ
9WS	35.0 ±1.0	8.0 ±1.0	35±3.0	0.75	700	0.01Ω-1KΩ
10W	53.0 ±1.0	8.0 ±1.0	35±3.0	0.75	700	0.01Ω-1KΩ

6.機械性能　Mechanical Performance

6-1.端子彎曲強度　Terminal Bend

一手持電阻體,另一手將端子彎曲 90°後,恢復原位,繼續再向反方向彎曲 90°,如此三次而接頭不可脫落或折斷。

The terminal shall withstand 4 bends of 90°rotation without any breakage or damage, when the Resistor is fixed in vertical position.

6-2.端子拉力強度　Terminal Tensile

將電阻本體一端固定,另一端向電阻體軸方向,慢慢加重至 2.5Kg 後,保持 10 秒鐘,本體不得脫落或鬆動。

Fixing the resistor body, a static load of 2.5Kg is to be gradually applied into the terminal for 10seconds without causing any looseness and fall.

6-3.扭轉強度　Twist Withstand

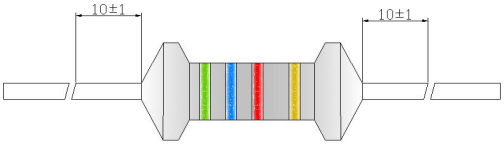
自電阻體起約 6mm 處之端子線,以約 0.8mm 曲率半經彎曲 90°,其次由彎曲處向端子線先端 1.2±0.4mm 處挾定端子引出軸,為回轉軸,以約 5 秒時間沿面回軸 360°再逆轉 360°,如此施行回逆轉 2 次,不可發生折斷及鬆動現象。

To bend the lead wire at the point of about 6mm from resistor body to 90°,then catch the wire at 1.2±0.4mm apart from the bend point end and turn it (clockwise) by 360 degrees Perpendicular to the resistor axis at speed of sane 5 seconds per turn, and do the same Counterclockwise again which constitute a whole turn. Repeat the turn for 2 times without Causing any break and looseness.

7.使用溫度:Operating Temperature Range

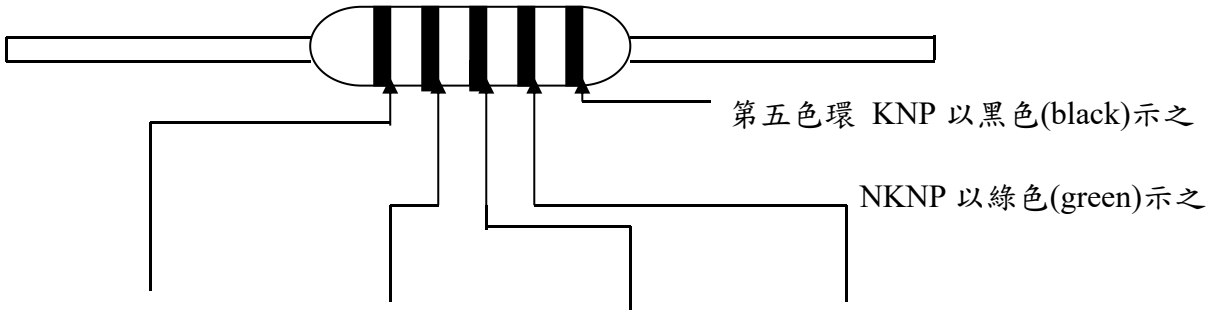
-50℃～275℃以內

8.電氣特性　ELECTRICAL PERFORMANCE

項目 ITEM	規格值 SPECIFICATIONS	試驗方法 TEST METHODS (JIS C5202)
抵抗值 DC RESISTANCE	須在規定之 R 值的容許差內 ALLOWED UNDER R RATE TOLERANCE	
短時間過負載 SHORT TIME OVER LOAD	±(2%+0.05Ω)以內 ±(2%+0.05Ω)LESS THAN	5.5 定格電壓*3.16 倍 測試 5 秒 PERMANENT RESISTANCE CHANGE AFTER THE APPLICATION OF A POTENTIAL OF 2.5 TIME RCWV FOR 5 SECONDS
耐電壓 DIELECTRIC WITHSTANDING VOLTAGE	塗裝不可損壞, 絕緣不可破壞 NO EVIDENCE OF FLASHOO-VER MECHANICAL DAMAGE ARCTIN OR INSULATION BREAKDOWN	5.7 電阻兩端導線置於 V 型,槽上依特性表之電壓規定加壓 60 秒 RESISTORS SHALL BE CLAMPED IN V-BLOCK AND SHALL BE TEST AT SPECIFIED IN THE ABOVE LIST ROR 60 SECONDS

焊錫附著性 ADHESION OF SOLDERABILITY	端子表面積 3/4 以新焊錫所覆蓋為原則 3/4 SURFACE OF TERMINAL COVERED BY SOLDER	6.5 235 ±5℃ 3 ±0.5 秒 (sec)

9. 色碼表示 Color Coding



第一色環 第二色環 第三色環 第四色環

Color 顏色	第一條 1 the significant	第二條 2 nd significant	倍數 Multiplier	誤差 Torrance
Silver 銀			0.01	±10%(K)
Golden 金			0.1	±5%(J)
Black 黑	0	0	1	
Brown 棕	1	1	10	±1%(F)
Red 紅	2	2	100	±2%(G)
Pink 橙	3	3	1K	
Yellow 黃	4	4	10K	
Green 綠	5	5	100K	±0.5%(D)
Blue 藍	6	6	1M	±0.25%(C)

Purple 紫	7	7	10M	±0.1%(B)
Grey 灰	8	8		
White 白	9	9		

注:Note 本體漆: 一般塗灰色不燃性漆。 Body coating Gray.

小型化塗粉紅色或塗綠色

10. 注意事項 REQUIRENTS IN USE

1. 濕氣會使電極之焊錫劣質化,保持場所在溫度 40℃ 以下濕度 70%以下。

   IN THE HIGH HUMIDITY SITUATION, IT WILL MAKE THE SOLDER ABILITY WORST. PLEASE PRESERVE THE RESISTORS IN 40℃ ,70 RH BELOW

2. 儘量不要打開最小包裝。

   PLEASE DON`T OPEN THE MINE PACKAGE WHEN YOU PRESERVE IT

3. 周圍溫度高時按照負荷減輕曲線圖減少使規定用電力。

   WHEN IN THE HIGH TEMPERATURE SITUATION, PLEASE ACCORD TO THE PICTURE OF "POWER DERATING CURVE" REDUCE THE USE OF POWER RATING

4. 儘量不要將多個電阻並列或直列連結, 而以大電壓或大電流使用。

   YOU SHOULD AVOID THE CONNECTOR OF RESISATNCE REPLACED BY LATGE VOLTAGE AND POWER

5. 由於特殊塗料之故, 對外部衝極力較弱, 故注意各種處置。

   DUE TO ITS SPECIAT MATERIAL OF PAINT, YOU MUST BE CAREFUL TO TIS WEAK APPEARANCE

6. 洗淨後, 外膜多少會弱化, 然後自然放置後可復元其強度所以洗淨後 20 分鐘內不要任電阻皮膜有任何品之接觸。

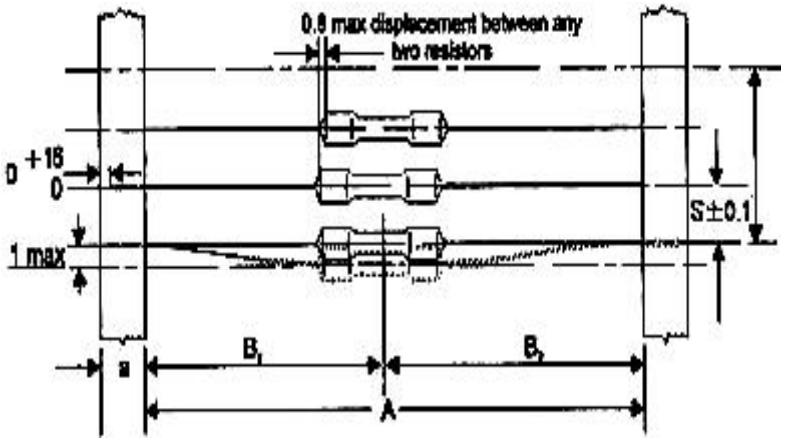
   AFTER CLEANING THE BODY, IT WILL MAKE THE FILM WEAKER. BUT IF YOU LET IT NATURE DRY WITHOUT TOUCHING OR PAINTING ANYTHING, THE RESISTORS WILL RECOWER ITS STRENGTH BY 20 MINUTES

7. 電阻為發熱性零件, 所以電阻間不應相互堆積或接近其它發熱零件組合成,而防礙其散熱性。

   THE RESISTORS ARE REQUESTED NOT TO PLACE BY THE OTHER HEATING

ACCESSORIE, WHICH WILL OBSTRUCT THEIR HEAT DISSIPATION

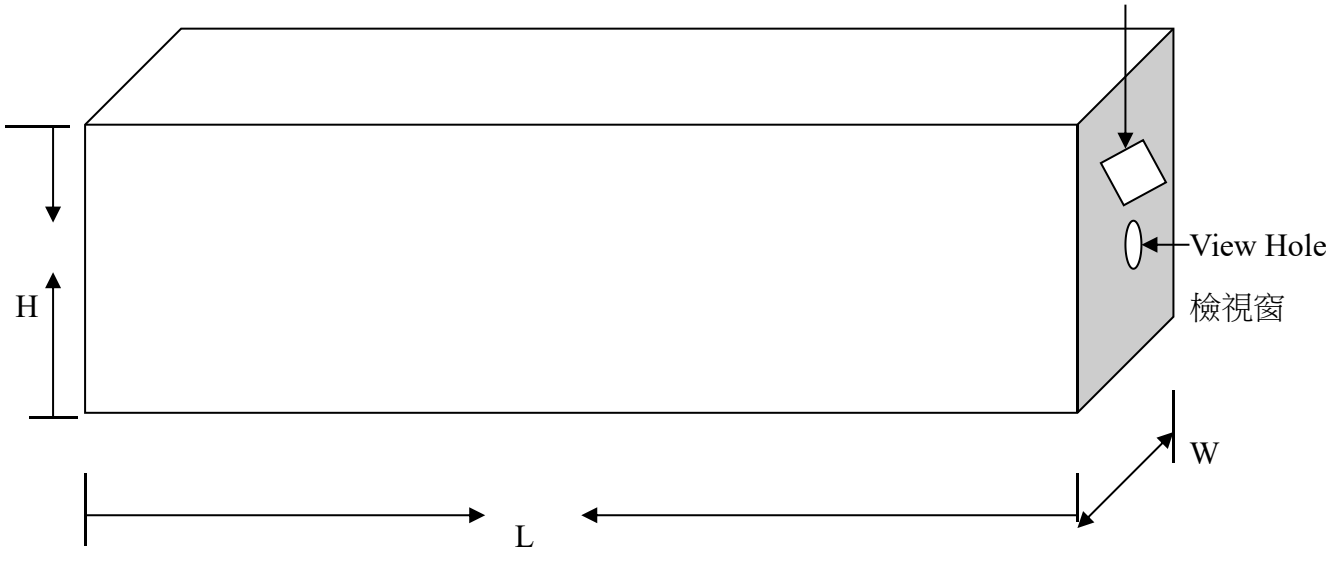
11. 帶狀尺寸 Type dimensions



STYLE		DIMENSIONS(mm)				
Normal	Miniature	a	A	B1-B2	S(Spacing)	T (Max. deviation of spacing)
TYPE-25	TYPE50S	6±0.5	52.5±1.5	1.2	5	1 mm per 10 spacing 0.5mm per 5 spacing
			26.0±1.5	1.0		
TYPE-50	TYPE1WS	6±0.5	52.5±1.5	1.2	5	
TYPE100	TYPE2WS	6±0.5	73.0±1.5	1.5	5	
TYPE2W	TYPE3WS	6±0.5	73.0±1.5	1.5	10	
TYPE3W	TYPE5WS	6±0.5	73.0±1.5	1.5	10	
TYPE5W		6±0.5	73.0±1.5	1.5	10	

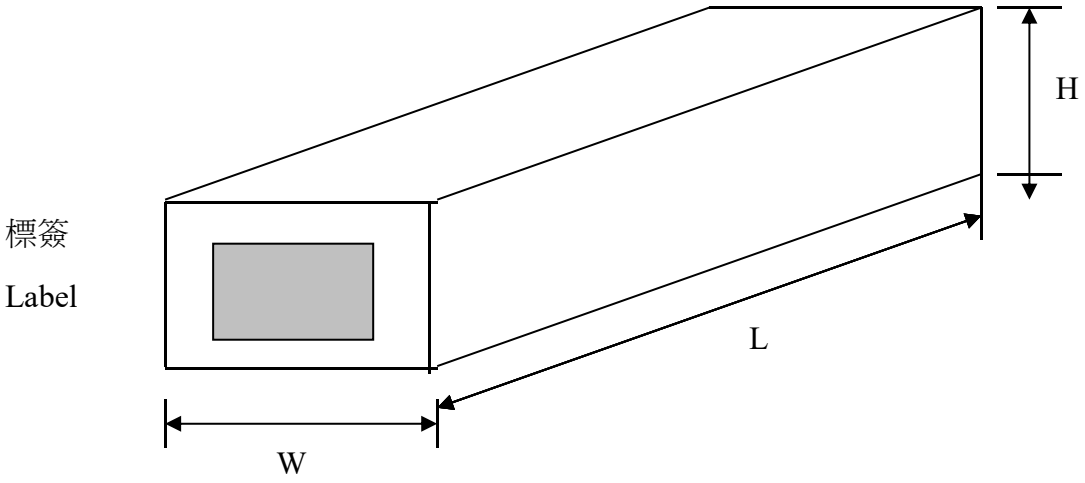
12.包裝 Packing

12-1 帶式包裝 Taping Type



TYPE	WATTS	W(mm)	H(mm)	L(mm)	Q'TY(pcs)
T-52	1/2W/ 1WS	80	85	260	1000
T－73	1W/ 2WS	92	80	260	1000
	2WS/ 3WS	110	92	270	1000
	3W/5WS	110	92	270	700
	5W	110	92	270	500

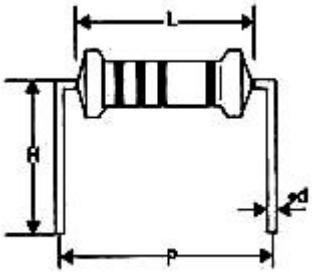
12-2. 散裝 Bulk

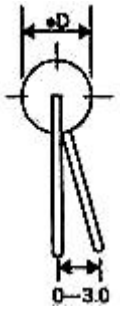


WATTS		TYPE	L(mm)	W(mm)	H(mm)	POLY BOG	BOX(pcs)
1/6W 1/8W	1/16W 1/4WS	P	240	140	76	1000	20000
1/4W	1/2WS	P	240	140	76	500	10000
1/2W	1WS	P	240	140	76	500	5000
1W	2WS	P	240	140	76	200	2000
2W	3WS	P	240	140	76	100	1500
3W/5WS		P	240	140	76	100	1000
5W		P	240	140	76	50	500

13.成型加工尺寸 OTHER DIMENSION

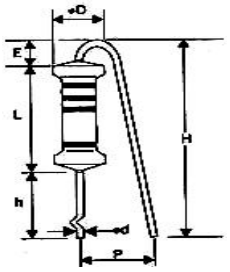
13-1. M-Type 成型

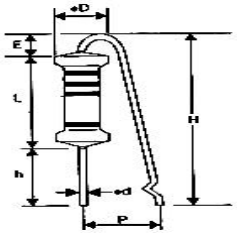


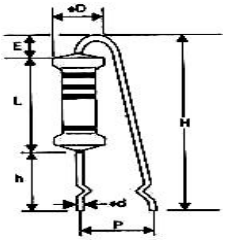


WATTS	DIMENSIONS (mm)				
	L	P±1.0	D	d±0.05	H±1.0
1/4W/1/2WS	6.0±0.5	10	2.3±0.3	0.45	8
1/2W/1WS	9.0±0.5	12.5/15	3.2±0.3	0.60	8
1W/2WS	11.0±1.0	15	4.5±0.5	0.65	10
2W/3WS	15.0±1.0	20	5.0±0.5	0.72	10
3W/5WS	17.0±1.0	25	6.0±0.5	0.72	10
5W	24.0±1.0	30	8.0±1.0	0.72	10

13-2.FK1-FK2-FKK Type 成型

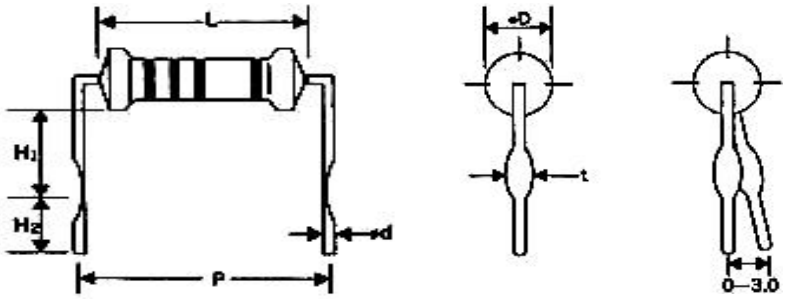






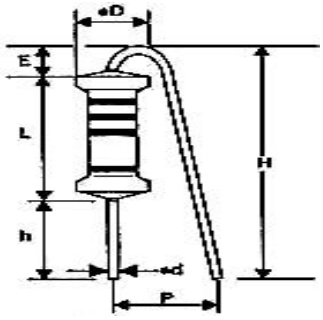
WATTS	DIMENSIONS(mm)						
	L	P±1.0	D	d±0.05	h+1/-0	H±1.0	Emax
1/2W/1WS	9.0±0.5	5-7	3.2±0.3	0.60	5~8	18	3.5
1W/2WS	11.0±1.0	5-9	4.0±0.5	0.65	5~8	20	3.5
2W/3WS	15.0±1.0	5-9	5.0±0.5	0.72	5~8	25	3.5
3W	17.0±1.0	5-10	6.0±0.5	0.72	5~8	30	3.5

13-3. MB-Type 成型



WATTS	DIMENSIONS (mm)						
	L	P±1.0	D	d±0.05	H1±1.0	H2±1.0	t±0.2
1/2W/1WS	9.0±0.5	12.5	3.2±0.3	0.60	10.5	5.0	1.20
1W/2WS	11.0±1.0	15	4.0±0.5	0.65	10.5	5.0	1.25
2W/3WS	15.0±1.0	20	5.0±0.5	0.72	10.5	5.0	1.25
3W/5WS	17.0±1.0	25	6.0±0.5	0.72	10.5	5.0	1.25
5W	24.0±1.0	30	8.0±1.0	0.72	10.5	5.0	1.25

13-4. F-Type 成型



WATTS	DIMENSIONS (mm)						
	L	P±1.0	D	d±0.05	h±1.0	H±1.0	Emax
1/4W/1/2WS	6.0±0.5	6-8	2.3±0.3	0.45	5~8	14	3
1/2W/1WS	9.0±0.5	6-8	3.2±0.3	0.60	5~8	18	3.5
1W/2WS	11.0±1.0	6-8	4.0±0.5	0.65	5~8	20	3.5
2W/3WS	15.0±1.0	6-8	5.0±0.5	0.72	5~8	25	3.5
3W/5WS	17.0±1.0	6-8	6.0±0.5	0.72	5~8	30	3.5