

大亞秋田電子科技（深圳）有限公司

金屬皮膜無腳電阻器

規格：1MMF30TSS11F2000D

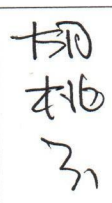
产品規格書

製造廠商：

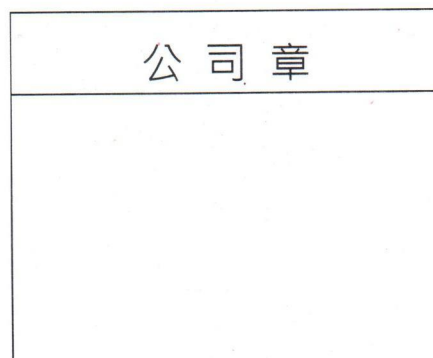
大亞秋田電子科技（深圳）
有限公司

使用廠商：

立創

認可	審核	製作
		肖明艷

認可	審核	製作



金屬皮膜無腳電阻器

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金屬皮膜無腳電阻器

1. 適用範圍 Specification

1-1 本承認書僅適用本公司生產之各種MEMF 金屬皮膜無腳電阻器產品。

The specification is only suitable for MEMF---MELF resistors manufactured by HUI ZHOU SHI AI ELECTRONIC CO., LTO.

1-2 參考標準 Applicable specification

本承認書參考《JIS C5201-2011》和《GB/T 5729-2003/IEC 60115-1:2001》

The specification Applicable specification 《JIS C5201-2011》and 《GB/T 5729-2003/IEC 60115-1:2001》

2. 訂貨方式 How To Order

2-1 訂貨方式 How To Order

如: MEMF 金屬皮膜無腳電阻器 0204 1/4WS $\pm 1\%$ 100 Ω 溫度係數 ± 25 PPM

Example: MEMF---MELF 0204 1/4WS $\pm 1\%$ 100 Ω TC25

1	M	M	F	0	4	T	S	0	4	F	1	0	0	0	C
(1)	(2)			(3)		(4)		(5)		(6)	(7)				(8)
代碼 code	類別 Type		代碼 code	瓦特數 wattag	代碼 code	包裝方式 PackagingTy		代碼 code	容許差 tolerance		阻值	Ex	標示 Mark		
1	Product		08	1/8W	T	Reel		B	±0.1%		低阻兩位 小數Ω	0.15Ω	R150		
2	Samples		06	1/6W	—	Normal size		C	±0.25%		個位Ω	1Ω	1008		
3	Materials		05	2/5W	s	Small size		D	±0.5%		十位Ω	10Ω	1009		
			04	1/4W	SS	Super small size		F	±1%		百位Ω	100Ω	1000		
			02	1/2W				G	±2%		個位K	1kΩ	1001		
			10	1W				J	±5%		十位k	10kΩ	1002		
			20	2W							百位k	100	1003		
			30	3WSS							百位M	1M	1004		
			3/5W>1/2W>1/5W								個位M	10M	1005		
											以此類推				
代碼 code	包裝方式 PackagingType		代碼 code	型号與尺寸 Siza&Dimension		代碼 code		溫度系数 T.C.R							
MMF	MMF-MELF		02	0102-1.1*2.2		S		±5PPM							
QMMF	QMM-QMLF		04	0204-1.4*3.5		B		±10PPM							
			07	0207-2.2*5.9		N		±15PPM							
			09	0309-3.2*8.5		C		±25PPM							
			11	0411-4.0*10.5		D		±50PPM							
						E		±100PPM							
						空白不標注		大于±100PPM							

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3. 術語 Glossary

產品類型依種類、功率、型式、特性、標稱電阻及電阻值容許差等排列構成。

The manufactured type constituted by kind、power、characteristic、rated resistance and resistance tolerance.

3-1-1 名稱 Code:

以大寫英文字母 “MEMF” 表示為金屬皮膜無腳電阻器。

MEMF-MEIF Resistors are marked with “MEMF” 。

3-1-2 標稱阻值 Rated resistance

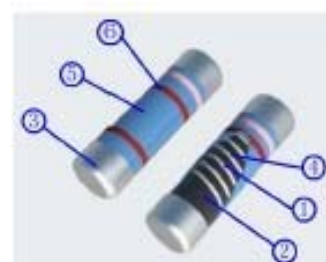
Unit: Ω 、 $K\Omega(10^3\Omega)$ 、 $M\Omega(10^6\Omega)$ 等。

3-1-3 電阻值容許差 Resistance tolerance:

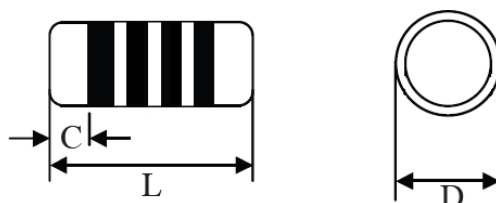
B($\pm 0.1\%$)、D($\pm 0.5\%$)、F($\pm 1\%$)、G ($\pm 2\%$)、J($\pm 5\%$) and K($\pm 10\%$)。

4. 構造 Construction

- ①瓷棒 ceramic base
- ②金屬膜 metal film
- ③鍍錫鐵帽 Tin-plated steel caps
- ④切割槽紋 Trimming line
- ⑤絕緣樹脂 Insulating resin
- ⑥色碼標示 Marking



5. 尺寸 Dimension



TYPE		Dimensions (mm)			Resistance range	Tolerance
		L	C Min	D Max		
0102	1/8W 1/5WS	2.2 $\pm$ 0.1	0.45	1.2	1 Ω ~560 Ω	$\pm 0.1\%$ $\pm 0.5\%$ $\pm 1\%$ $\pm 5\%$
0204	1/8W 1/6W 1/4WS 1/2WSS 2/5W	3.5 $\pm$ 0.2	0.6	1.55	1 Ω ~10M Ω 0 Ω	
0207	1/4W 1/2WS 1WSS	5.9 $\pm$ 0.2	1.0	2.4	1 Ω ~10M Ω 0 Ω	
0309	1/2W 1WS 2WSS	8.5 $\pm$ 0.3	1.2	3.5	1 Ω ~10M Ω	
0411	1W 2WS 3WSS	10.5 $\pm$ 0.3	2.3	4.3	1 Ω ~10M Ω	

注：① 0 Ω 阻值範圍為<30m Ω

0 Ω Resistance Value <30m Ω

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6. 色碼標示 Explanation of color

底漆: 藍色 Coating color: Blue

$\pm 0.1\%, \pm 0.5\%, \pm 1\%$

四色環標示

Marking: 4 Color code



顏色 COLOR	第一位數 1ND BAND	第二位數 2ND BAND	第三位數 3ND BAND	乘數 MULTIPLIER
黑 BLACK	0	0	0	$1\times$
棕 BRAWN	1	1	1	$10\times$
紅 RED	2	2	2	$100\times$
橙 ORANGE	3	3	3	$1000\times$
黃 YELLOW	4	4	4	$10000\times$
綠 GREEN	5	5	5	—
藍 BLUE	6	6	6	—
紫 VIOIET	7	7	7	—
灰 GRAY	8	8	8	—
白 WHITE	9	9	9	—
金 GOLD				$0.1\times$
銀 SILVER				$0.01\times$

$\pm 2\%, \pm 5\%$

三色環標示

Marking: 3 Color code



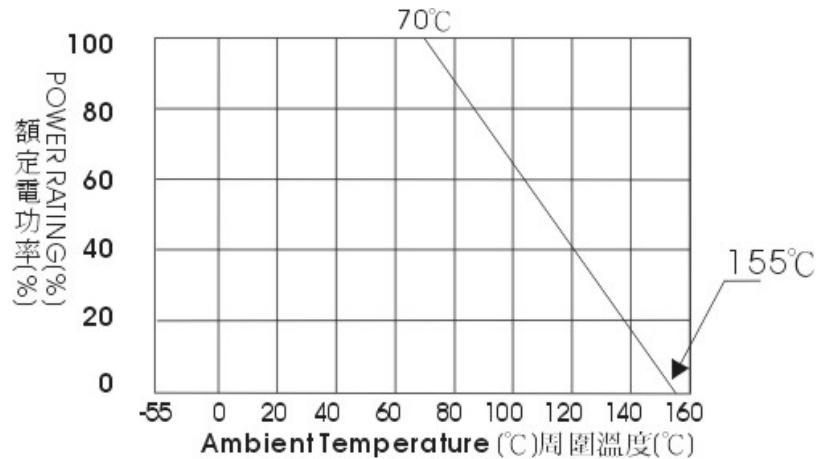
注 : 0Ω用一道黑色表示 Notice: 0Ω mark with one Black color

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7. 負載減輕曲線 Power Derating Curve

額定功率系適應在周圍溫度70°C可以連續負載的最大功率(如表),但周圍溫度如超過70°C時之額定電力則依圖的降功率曲線實施。

Rated power is maximum power which can be continuously loaded at specified ambient temperature 70°C, however when the ambient temperature exceeds 70°C, rated power should be determined from the derating curve



8. 電氣特性 Characteristics

特性項 Characteristics	規格值 Specifications				
型 号	0102	0204	0207	0309	0411
額定電壓 Rated voltage	$U=\sqrt{P \times R}$	$U=\sqrt{P \times R}$	$U=\sqrt{P \times R}$	$U=\sqrt{P \times R}$	$U=\sqrt{P \times R}$
最高使用電壓 Max continuous working voltage	150V	200V	350V	350V	500V
最高過負荷電壓 Max overload voltage	300V	400V	700V	700V	800V
0Ω電阻耐電流強度 0Ω current strength	/	2A	4A	/	/
0Ω電阻過負荷電流 0Ω Max overload current strength	/	4A	6A	/	/
使用溫度範圍 Operating temp range	-55°C ~ +155°C				

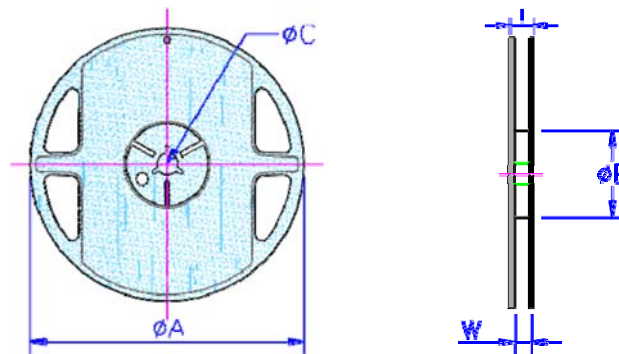
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9. 性能 Performance

特性項 Characteristics	規格值 Specifications	測 試 方 法 Test methods						
電阻溫度係數 T.C.R	普通品為±100PPM 可提供±15PPM、±25PPM、±50PPM 特殊需求可協商製作	$\frac{R2-R1}{R1*(T2-T1)}*10^6/ \text{ }^{\circ}\text{C}$ R1:常溫(T1)阻抗值. Resistance value at room temperature (T1). R2:常溫+100°C(T2)阻抗值. Resistance value at room temperature+100°C.						
短時間過負荷 Short time over load	±(0.5%R+0.05Ω)	額定電壓*2.5 倍,測試 5 秒. Resistance change after the application of a potential of 2.5 time rated voltage for 5 seconds.						
濕度壽命 Load life in humidity	阻抗值變化率±1%內, 機械特性不可有損傷. Resistance change rate less than ±(1%R+0.05Ω) With no evidence of mechanical damage.	溫度 40±2°C,相對濕度 90-95%于恆溫恆濕箱中, 加額定直流電壓測試 1.5 小時停止 0.5 小時,連續 1000 小時. Resistance change after 1000 hrs (1.5 hrs ON 0.5hrsOFF)at rated voltage in a humidity chamber controlled at 40±2°C and 90-95% relative humidity.						
負荷壽命 Load life	阻抗值變化±(1%R+0.05Ω), 機械特性不可有損傷. Resistance change ±(1%R+0.05Ω) MAX With no evidence of mechanical damage.	溫度 70±2°C,恆溫箱中,加額定電壓測試 1.5 小時停止 0.5 小時,連續 1000 小時. Resistance change after 1000hrs operating at rated voltage with duty cycle of 1.5hrs ON 0.5hrs OFF at 70°C±2°C.						
耐熱性 Resistance to soldering heat	阻抗值變化 ±(0.5%R+0.05Ω). 以內,機械特性不可有損傷. Resistance change is ±(0.5%R+0.05Ω). MAX. With no evidence of mechanical damage.	將電阻兩端浸入錫爐依下表任一規定實施 <table><tr><td>Temperature</td><td>Dip time</td></tr><tr><td>350°C±10°C</td><td>3±0.5 sec</td></tr><tr><td>260°C±5°C</td><td>10±1 sec</td></tr></table>	Temperature	Dip time	350°C±10°C	3±0.5 sec	260°C±5°C	10±1 sec
Temperature	Dip time							
350°C±10°C	3±0.5 sec							
260°C±5°C	10±1 sec							
焊錫性 Solder ability	百分之 95 覆蓋於端子上 95% coverage minimum	錫爐溫度:255±5°C 浸錫時間:3±0.5 sec Test temperatures of solder255±5°C Dwell time in solder:3±0.5 sec						

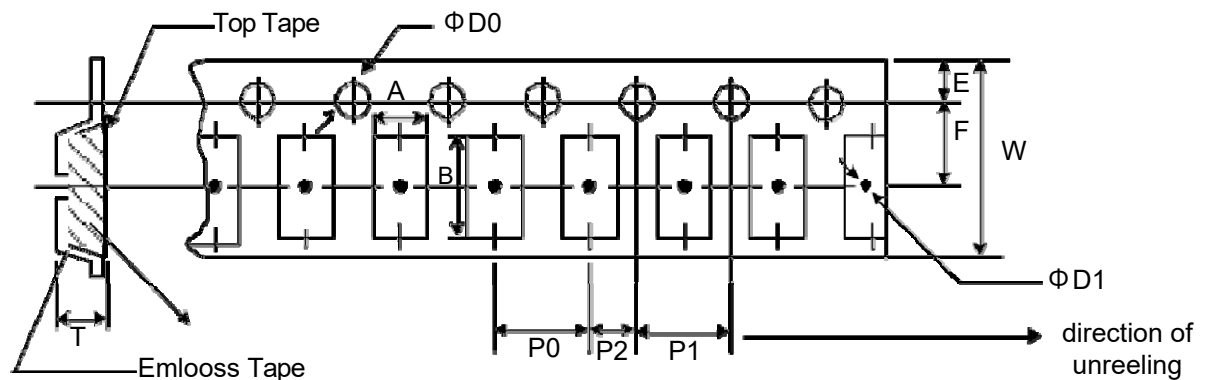
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10. 包裝方式 Tape packing in every box



Packaging Quantity & Reel Specifications

Type	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)	T (mm)	Emboss Plastic Tape (EA)
0102	7 inch	178.5±1.5	60.0+1.0	13.0±0.2	9.0±0.5	12.5±0.5	3,000
0204	7 inch	178.5±1.5	60.0+1.0	13.0±0.2	9.0±0.5	12.5±0.5	3,000
0207	7 inch	178.5±1.5	60.0+1.0	13.0±0.5	13.0±0.5	15.5±0.5	2,000
0309	13 inch	330±1.5	100.0+1.0	13.0±0.5	17.0±0.5	19.0±0.5	2,500
0411	13 inch	330±1.5	100.0+1.0	13.0±0.5	17.0±0.5	19.0±0.5	1,500

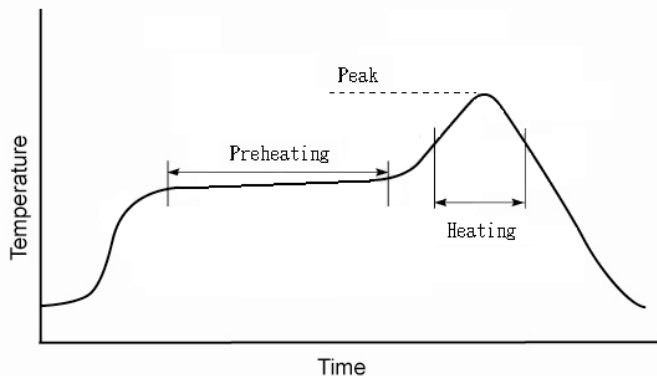


Emboss Plastic Tape Specifications

Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	ΦD0 (mm)	T (mm)
0102	1.30±0.10	2.40±0.10	8.0±0.10	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50±0.10	1.50±0.10
0204	1.55±0.10	3.65±0.10	8.0±0.10	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50±0.10	1.45±0.20
0207	2.40±0.10	6.15±0.10	12.0±0.10	1.75±0.10	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50±0.10	2.50±0.30
0309	3.30±0.10	9.00±0.10	16.0±0.10	1.75±0.10	7.50±0.05	4.00±0.10	8.00±0.10	2.00±0.05	1.50±0.10	3.30±0.50
0411	4.30±0.10	11.0±0.10	24.0±0.30	1.75±0.10	11.5±0.05	4.00±0.10	8.00±0.10	2.00±0.05	1.50±0.10	4.30±0.10

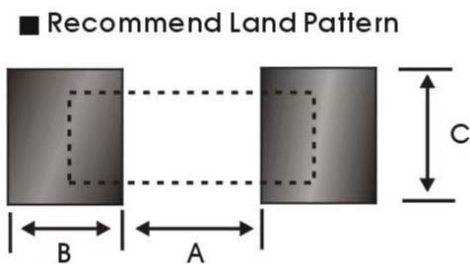
11. 建議 Suggestion

11.1 無鉛迴流焊條件 Reflow soldering (lead-free)



條件 Status	最高溫度 Temperature MAX	Time MAX
預熱 Preheating	180°C	120 sec
加熱Heating	220°C	60 sec
峰值 Peak	260°C	3 sec

11.2 焊盤設計Pad design



TYPE	A(mm)	B(mm)	C(mm)
0102	1.0	0.8	1.5
0204	1.6	2.0	2.2
0207	3.2	3.0	3.5
0309	5.6	4.0	4.0
0411	8.2	5.0	5.0

12. 注意事項 Caution

12.1 Storage and usage method

12.2 Humidity gives damage to cap solderability, therefore, please keep environment.

Temperature : +5°C~+40°C

Humidity : 55%~75%RH

Storage limited : 12 months

12.3 Please follow the instruction to keep the material when it is unpacked.

12.4 When ambient temperature exceeds a rated ambient temperature, the resistance shall be applied on the derating curve by derating the load power.

12.5 Please avoid join many resistors in series or parallel when apply high voltage or high electric current.

12.6 Molding products by using resin might bring out resistance value change. Please keep away from Molding.

12.7 This products meet the RoHS Compliant.