

CCOHM MELF-KNP RESISTORS

承認書

(APPROVAL SHEET)

客戶名稱 Client	
品 名 Description	MELF-KNP
規 格 Specification	
料 號 Part No	
備 注 Remark	

核 準 Approval	校 對 Check By	主 辦 Prepared By
林鐵軍	陈智伟	彭東林

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CCOHM MELF-KNP RESISTORS

1.適用範圍 Applicable Scope

1-1

此基準是供應電光源、開關電源、充電器、通訊器材、醫療電子設備、測試測量設備、汽車電子、工業產品及家用電器等電子設備用之，C.C.OHM ENTERPRISE CO., LTD 生產的 SMD 繞線型無腳電阻器之規格。

Applicable Scope: This MELF-KNP made by C.C.OHM ENTERPRISE CO., LTD is for use in Electric Light Source, Switch mode power supply, Chargers, Telecommunication equipments, Testing and measuring devices, Electric Vehicle, Industrial products.....etc

1-2

1. 使用不燃性，具有不燃與絕緣之安全特性；
2. 小型化，便於高密度貼裝；
3. 符合 RoHS 和 REACH 工藝要求；
4. 可用於自動表面貼裝(SMD)裝配系統，適於通過波峰焊、回流焊進行自動焊接；

1. Non flammability and insulation characteristic;
2. Small size, suitable for high-density mounting;
3. RoHS and REACH compliance;
4. The resistors are suitable for processing on automatic SMD assembly systems.;

2.型号名称 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.

2-1	2-2	2-3	2-4	2-5	2-6
MELF-KNP	0309	1W	1R	J	350PPM
種類	尺寸	額定電力	公稱電阻值	容差	溫度係數
Type	Size	Rate Wattage	Nominal Resistance	Tolerance	Temperature Coefficient

2-1.種類 Type

SMD 繞線型無腳電阻器以 MELF-KNP 表示。

SMD Wire-wound Melf Resistor is called "MELF-KNP"

MELF-KNP ---Copper wire product

2-2.尺寸 Terminal Form

視尺寸區分為 0207, 0309, 0411。

Upon the resistor size, it has 0207, 0309, 0411

2-3.額定電力 Rated Wattage

額定電力(W)以數字表示，如 1/2W, 1W, 2W, 2WS,2WSS。

Shown by "W"、such as 1/2W, 1W, 2W, 2WS,2WSS。

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2-4. 公稱電阻值 Nominal Resistance:

R, K Ω 為單位, 依據 JIS-C6402 為適用原則(E-24 Series), 例如 1R, 0R1, 0R47, 150R。

R, K Ω are its unit which is in accordance with JIS-C6402(E-24)series, such as 1R, 0R1, 0R47, 150R.

2-5. 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 $\pm 1\%$ G $\pm 2\%$ J $\pm 5\%$

2-6. 溫度系数 Temperature Coefficient

溫度系数以具体数值表示之, 如: 300PPM, 350PPM, 400PPM(仅在需求时标识)

Temperature Coefficient is identified by specific numerical values, such as:

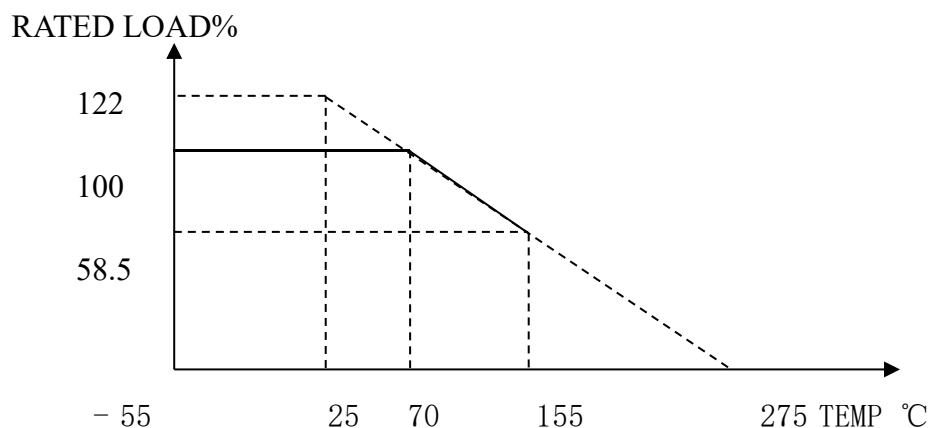
300PPM, 350PPM, 400PPM(Only when required)

3. 額定功率 Rated power

額定功率是周圍溫度 70°C 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。周圍溫度超越上述溫度時, 依照圖一之電力衰減曲線而定。

Rated power is the value of Max load voltage specified at the ambient temperature of 70°C 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:



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)

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4.熔断特性 Fusing Characteristics

4-1 定义 Definition

对电阻器施加规定的过负载时，阻值显著增大，使流过电阻器的电流下降到最初试验电流的 1/50 以下时，称为熔断。电阻器从加上规定的过负载时，到发生熔断时所需的时间，称为熔断时间。这种性能，称为熔断特性。

When a specified overload is applied to the resistor, the resistance increases obviously, causing the current flowing through the resistor 1/50 less than it's testing value. The time which applying overload to resistor till fusing happened is called Fusing time. This characteristics is call fusing characteristics.

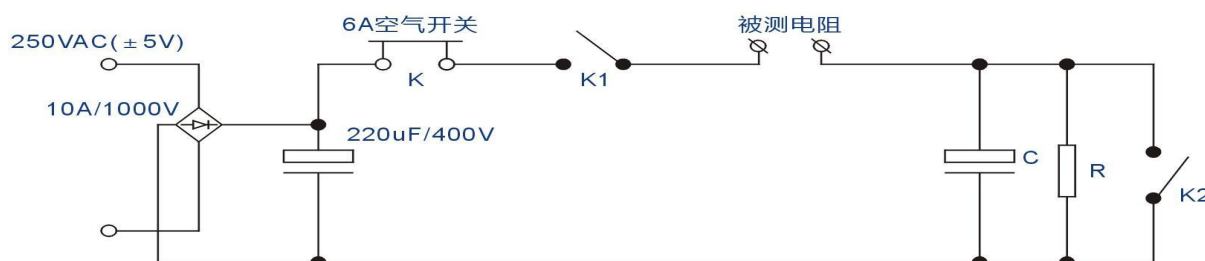
4-2 条件 Condition

额定电流倍率(倍) Rated current multiplier(times)		熔断时间 (S) Fusing time(S)
0207~0411	0.25W~0.5W / 8	≤60
	1W~3W / 6	
注：熔断特性：1、可根据用户要求制做;2、要求过雷击产品一般不考核熔断时间或按客户要求制作。 Remark: Fusing Characteristics: 1. Customized available; 2. Lighting strike product		

4-3 抗冲击性能 Pulse withstand

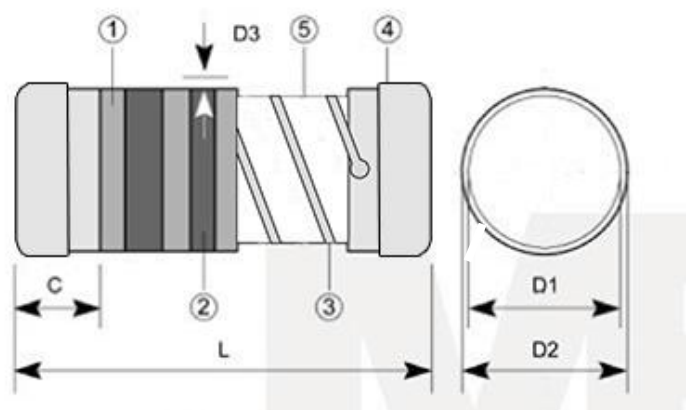
闭合开关 K，打开开关 K2，按 1S 通 1S 断的要求，将 K1 反复通断 100 次，试验电阻应不开路。

Closed Swith k, Open swith K2. Under 1 second closed 1 second open request, 100 cycle testing for K1, testing resistor shouldn' t open circuit.



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4. 構造 CONSTRUCTOION



型号 Size	尺寸描述 Dimension (mm)				
	L	D1	D2 Max	D3 Max	C Min
0207	5.90±0.2	1.7±0.1	2.1±0.2	0.10	0.8
0309	单帽 single cap: 8.5 双帽 double cap: 8.8	2.5	单帽 single cap: 3.1 双帽 double cap: 3.4	0.15	单帽 single cap:1.2 双帽 double cap:1.0
0410/0411	双帽 double cap:11	3.0	双帽 double cap: 4.0	0.20	双帽 double cap1.5

序号 SL NO.	材料名称 part	材质 Material
1	包封料 paint	不燃性涂料 Non flammable coating
2	色 环 coding line	阻燃涂料 fire-retardent coating
3	熔 丝 wire	合金线 Metal Alloy wire
4	帽 子 cap	镀铜、镀锡铁帽 CU/Sn plated iron cap
5	瓷 棒 resistor rod	氧化铝瓷体 Al ₂ O ₃ rod

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5. 规格及尺寸 SPECIFICATIONS

RANGE SIZE	功率范围 Rated power (70℃)	工作温度范围 Working Temp. (℃)	绝缘电压 (直流或交流峰值) DIELECTRIC WITHSTANDING(AC/DC) V	电阻值范围 Resistance (Ω)
				±1%、±2%、±5%
0207	0.25W 0.5WS 1WSS	-55 ~ 155	250	0.22~100
0309	0.5W 1WS 2WSS	-55 ~ 155	350	0.1~150
0410	0.75W 1.5WS 3WSS	-55 ~ 155	400	0.1~220
0411	1W 2WS 3WSS	-55 ~ 155	500	0.1~300

6. 电气性能和测试要求规格及尺寸 SPECIFICATIONS

测试步骤和要求/ Environmental Characteristics

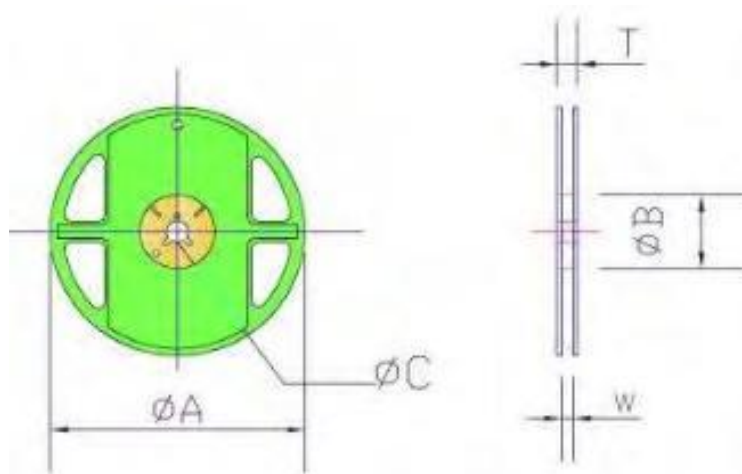
测试项目/ Item	测试要求/Requirement	测试步骤/ Test Method
电阻温度系数试验 Temperature coefficient	As Spec.	-55℃~+125℃, 25℃ is the reference temperature.
短时间过附载试验 Short Time Overload	±(0.5%+0.05Ω)	RCW*×2.5 or Max. Overload voltage for 5 seconds.
耐湿负载试验 Damp Heat with Load	±(1.0%+0.05Ω)	40±2℃, 90~95% R.H. Max Working voltage for 1,000 hrs. with 1.5 hrs. "ON" and 0.5 hrs. "OFF" .
寿命负载试验 Endurance	±(1.0%+0.05Ω)	70±2℃, Max. Working voltage for 1,000 hrs. with 1.5 hrs. "ON" and 0.5 hrs. "OFF" .

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弯曲端子强度试验 Bending Strength	$\pm(0.5\%+0.05\Omega)$	Bending once for 5 seconds with 2mm.
焊锡性试验 Solder ability	95% min. coverage	$245\pm 5^{\circ}\text{C}$ for 3 seconds.
焊锡耐热性试验 Resistance to soldering heat	$(\pm 0.5\%+0.05\Omega)$	$260\pm 5^{\circ}\text{C}$ for 10 seconds
绝缘耐压试验 Voltage Proof	No breakdown or flashover	0207 350V, 0309 500V for 1 minute.
绝缘电阻试验 Insulation Resistance	$>1,000\text{M}\Omega$	0207 350V, 0309 500V for 1 minute.

7. 包装数量, 尺寸 Package qty, Dimension

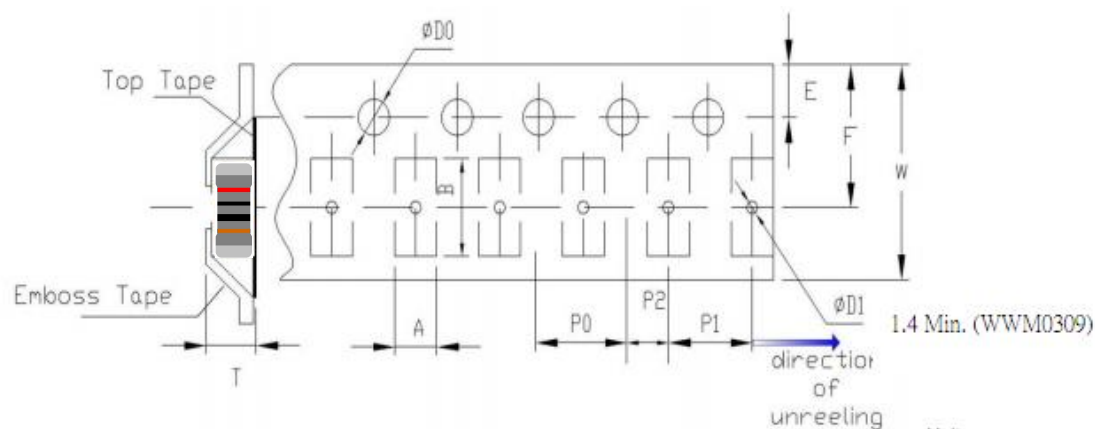
7-1. 卷轴规格 Reel Dimension



规格	ϕA (mm)	ϕB (mm)	ϕC (mm)	W	T	包装数量 (pcs)
0207	330 ± 2	90 ± 2	13 ± 0.5	10 ± 1	14.5 ± 1	7000
0309	330 ± 2	90 ± 2	13 ± 0.5	16 ± 1	19.5 ± 1	2500
0410/0411	330 ± 2	90 ± 2	13 ± 0.5	24 ± 1	28.5 ± 1	2000

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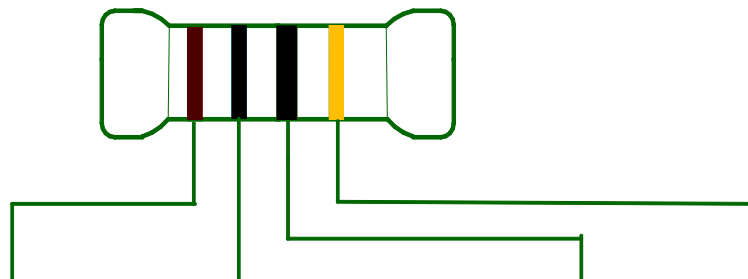
7-2 带装规格



规格 Size	尺寸 Dimension (mm)				
	A	B	W	E	F
0207	2.4±0.2	6.0±0.2	12.0±0.2	1.75±0.1	7.25±0.1
0309	3.6±0.2	8.9±0.2	16.0±0.2	1.75±0.1	9.25±0.1
0410/0411	3.9±0.2	11.3±0.2	24.0±0.2	1.75±0.1	13.25±0.1
	P0	P1	P2	D0	T
0207	4.0±0.1	4.0±0.1	2.0±0.1	1.5±0.1	2.5±0.1
0309	4.0±0.1	8.0±0.1	2.0±0.1	1.5±0.1	3.5±0.1
0410/0411	4.0±0.1	8.0±0.1	2.0±0.1	1.5±0.1	4.3±0.1

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8. 色碼表示 Color Coding



颜色 Color	第 1 数字 First digit	第 2 数字 Second digit	第 3 数字 Third digit	乘数 Multiplier	误差率 Tolerance
黑 Black	0	0	0	10^0	—
棕 Brown	1	1	1	10^1	± 1
红 Red	2	2	2	10^2	± 2
橙 Orange	3	3	3	10^3	—
黄 Yellow	4	4	4	10^4	—
绿 Green	5	5	5	10^5	± 0.5
蓝 Blue	6	6	6	10^6	± 0.25
紫 Violet	7	7	7	10^7	± 0.1
灰 Gray	8	8	8	10^8	—
白 White	9	9	9	10^9	—
金 Gold	—	—	—	10^{-1}	± 5
银 Silver	—	—	—	10^{-2}	± 10
无 Plain	—	—	—	—	—

9. 储存环境 Storage condition

温度 Temp. 20°C ~ 28°C ， 相对湿度 RH ≤ 60%