

⊕ Features

Shielded construction.
Frequency range up to 1.0 MHz.
Lowest DCR / μH , in this package size.

Handles high transient current spikes without saturation.
Ultra low buzz noise, due to composite construction.

⊕ Product Identification :

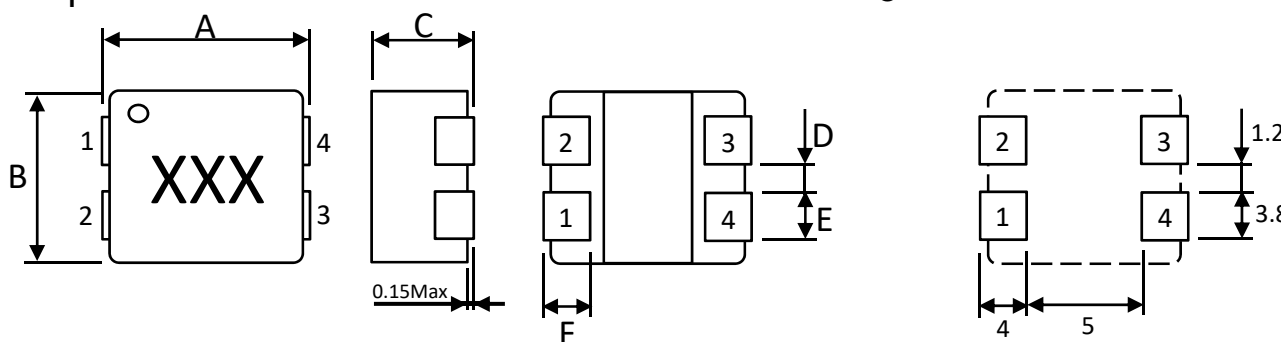


Series name	Dimensions(WxLxH)	Internal code
MPCM	1080 10.8*10*8mm	H=Alloy T=Carbonyl Iron Particle

Inductance	Tolerance
100 10 μH	K 10%
470 47 μH	M 20%

⊕ Shapes And Dimensions

⊕ Recommended PCB Pattern



Part No.	Dimensions(mm)					
	A	B	C	D	E	F
MPCM1080H	10.80 ± 0.5	10.00 ± 0.3	8.00 Max.	1.60 ± 0.2	3.10 ± 0.3	2.40 ± 0.5

⊕ Electrical Characteristics :

Part No.	Inductance (μH)	I _{rms} (Amp)	I _{sat} (Amp)	DCR (m Ω)	Test Frequency	
MPCM1080H-100M	10 $\pm 20\%$	5 Max	5.4 Typ	10.6 12.4 Max Typ	37.2 31 Max Typ	100KHz/1V
MPCM1080H-150M	15 $\pm 20\%$	4.6 Max	5 Typ	9.1 10.6 Max Typ	46.8 39 Max Typ	100KHz/1V
MPCM1080H-220M	22 $\pm 20\%$	3.5 Max	3.8 Typ	6.8 7.4 Max Typ	90 72 Max Typ	100KHz/1V
MPCM1080H-470M	47 $\pm 20\%$	2.6 Max	2.9 Typ	5.4 6.3 Max Typ	130 108 Max Typ	100KHz/1V

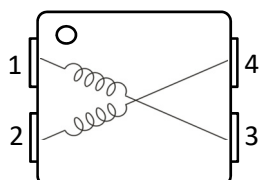
※I_{sat} : DC Saturation Current that will cause initial inductance to drop approximately 30 % max.

※I_{rms} : DC Current that will cause an approximate ΔT of 40°C.

※All test data is referenced to 25°C ambient.

※Test Instrument : L (CH3302), RDC (TH2511), I_{sat} & I_{rms} (WK3260+WK3265B)

⊕ Equivalent Circuit Schematic :



⊕ Material List :

No.	Location	Material
1	Core	Alloy Powder or Equivalent
2	Wire	G2Polyurethane enameled or Equivalent
3	Hoop	C5191H or Equivalent
4	Glue	Resin

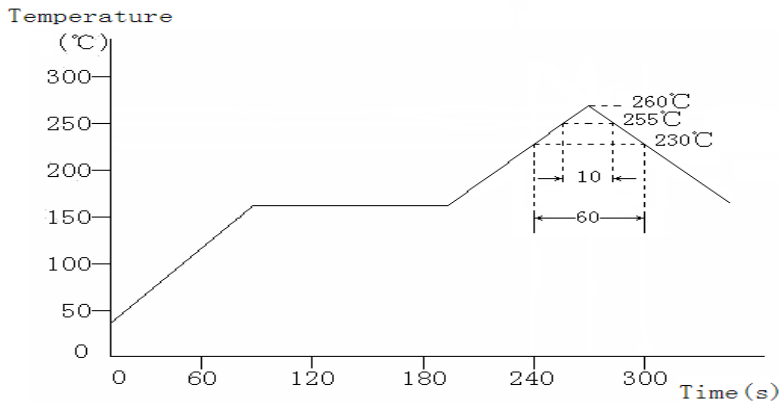
1. Operating temperature -55°C ~ +155°C

2. Storage conditions -55°C ~ +155°C

⊕ Mechanical Reliability

项目/Item	测试方法/Test Condition	要求/Performance
焊接能力测试 Solder Ability Test	端子浸入助焊剂然后浸入245±5°C锡炉中5秒 Terminal in flux and then into 245 + 5 °C tin furnace 5 seconds	焊料端子必须有90%以上着锡 More than 90% of terminal electrode should be covered with solder.
端子强度 Terminal Strength	将线圈的端子焊接在基板上,分别在 X,Y,Z 3 个方向施加 5N(0.5kgf),时间 10±5 秒 After soldering between copper plate and electrode. sample is pushed in three directions of X,Y and Z with force of 5N(0.5kgf) for 10±5 seconds	无电极剥离和断线 the terminal should not peel off
振动测试 Vibration	振动1小时后,电感偏差在+10%以内.在扫描振动的三个方向(10~55~10HZ)中,每一个方向都有1.5mmP-P振幅 Inductance deviation within +10% after vibration for 1 hour. In each of three orientations at Sweep vibration (10~55~10HZ) with 1.5mmP-P amplitudes.	1.电极没有分离 2.无明显的外观缺陷 1.No separation or indication of electrode. 2.No case deformation or change in appearance.
坠落试验 Drop Test	用981m/s2 (100G)将产品包装后在1米高度自然落下,有三种不同的方向 981m/s2 (100G) is used to automatically drop the product at a height of 1 meter after packaging. and there are three different directions	1.电感偏差在+10%以内 2.无明显的外观缺陷 1.The inductance deviation is within +10%. 2.No case deformation or change in appearance.
高温存储测试 High Temperature Storage Test	温度:155°C±3°C时间:500±2小时测试时间不少于1小时·不多于2小时 Temperature:155°C±3°C Time:500±2 hours. Tested not less than 1 hour, nor more than 2 hours at room	1.无明显的外观缺陷 2.感值变化不超过10% 3.直流电阻变化不超过10% 1.No case deformation or change in appearance 2.ΔL/L≤10% 3.ΔDCR/DCR≤10%
低温存储测试 Low Temperature Storage Test	温度:-55°C±3°C时间:500±2小时·测试时间不少于1小时·不多于2小时 Temperature:-55°C±3°C Time:500±2 hours. Tested not less than 1 hour, nor more than 2 hours at room.	1.无明显的外观缺陷 2.感值变化不超过10% 3.直流电阻变化不超过10% 1.No case deformation or change in appearance 2.ΔL/L≤10% 3.ΔDCR/DCR≤10%
高温湿度测试 High Temperature Humidity Test	温度:85°C±3°C·湿度:85±5% RH·测试时间:500±2小时·测试时间不少于1小时·室温下不超过2小时 Temperature:85°C±3°C. Humidity:85±5%RH Test Time:500±2 hours Tested not less than 1 hour. Nor more than 2 hours at room temperature	1.无明显的外观缺陷 2.感值变化不超过10% 3.品质因数变化不超过30% 4.直流电阻变化不超过10%. 1.No case deformation or change in appearance 2.ΔL/L≤10% 3.ΔQ/Q≤30% 4.ΔDCR/DCR≤10%
热冲击试验 存储测试 Thermal Shock Test Storage Test	从-55°C试验30分钟,然后温度冲击到155°C试验30分钟,作为一个循环,共20次周期 First-55°C for 30 Minutes, last 155°C for 30 Minutes as 1 cycle. Go through 20 cycles.	1.无明显的外观缺陷 2.感值变化不超过10% 3.直流电阻变化不超过10% 1.No case deformation or change in appearance 2.ΔL/L≤10% 3.ΔDCR/DCR≤10%

⊕ Reflow Soldering Heat Endurance

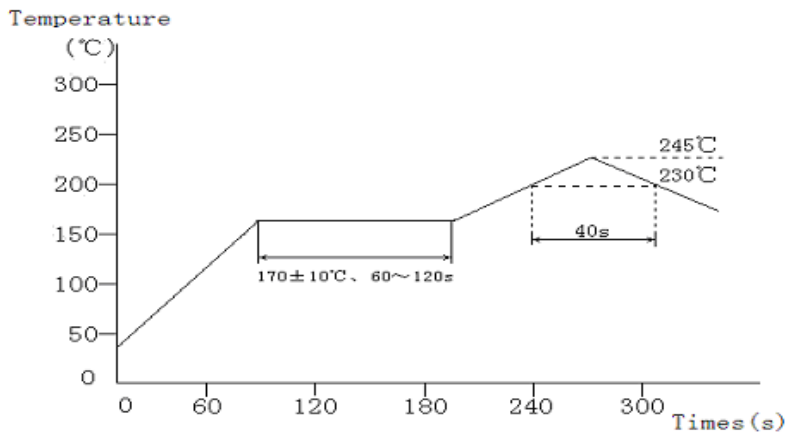


No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.

Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.

The reflow test profile may vary with the testing instruments.

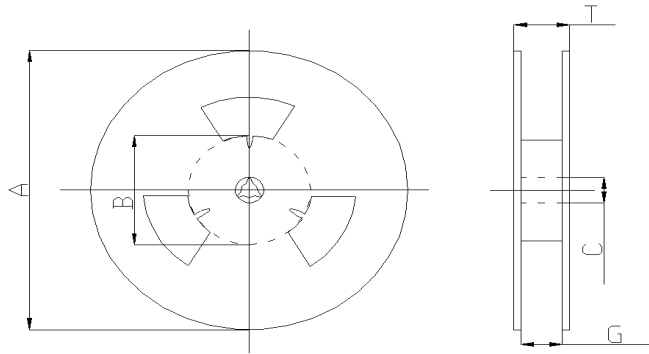
⊕ Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

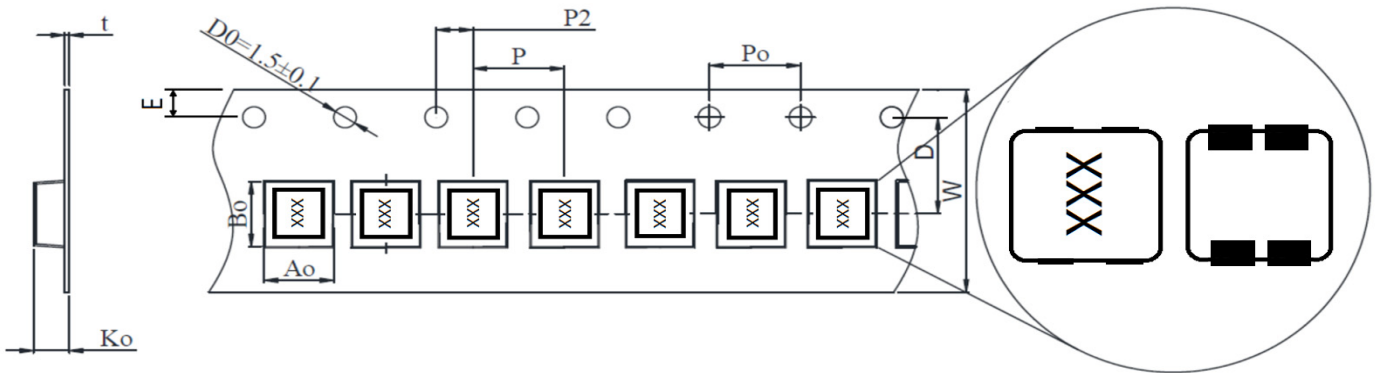
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

⊕ Reel Dimension(m/m)



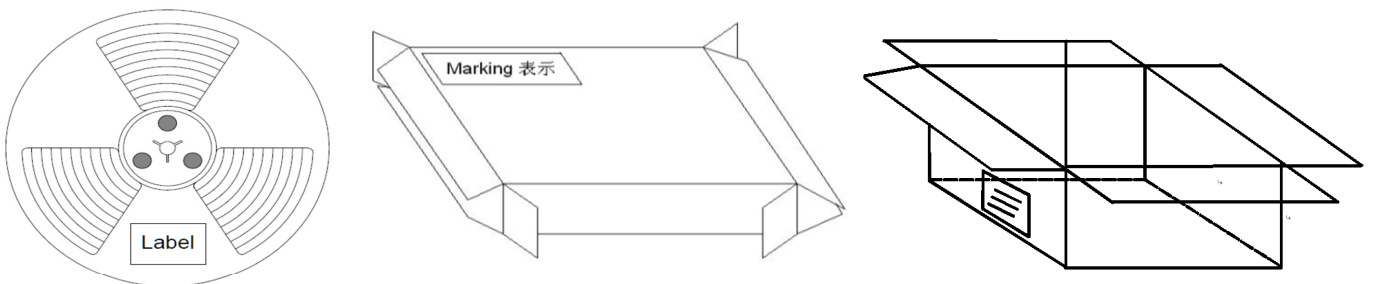
Item	A	B	C	G	T
MPCM1080H	330±1	100±1	13±1	24±1	28.5±2

⊕ Taping Dimension(m/m)



Item	W	Ao	Bo	Ko	D	D0	E	P	Po	P2	t
MPCM1080H	24±0.5	10.8±0.15	11±0.15	8.2±0.15	11.5±0.1	1.5±0.1	1.75±0.1	16±0.1	4±0.1	2±0.1	0.4±0.05

⊕ Packaging Carton



Item	Reel Packing Unit	Inner Box Packing Unit	Carton Packing Unit
MPCM1080H	400 PCS / Reel	800 PCS / Box	4000 PCS / Box