

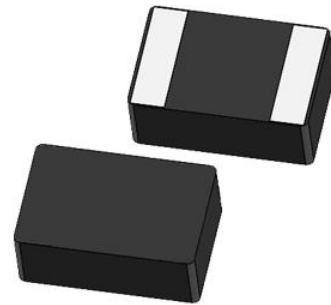
◆ **Scope**

This specification applies to the CMLO201208T Series of SMD power inductors.

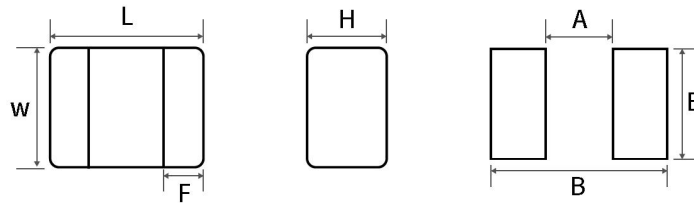
◆ **Lead Free PartNumbering**

CMLO	201208	T	1R0	M	T	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)

- (1) Series Type
- (2) Dimension: LxWxH
- (3) Material Code
- (4) Inductance:R47=0.47uH;1R0=1.0μH
- (5) Inductance Tolerance:M=± 20%,N=± 30%
- (6) Company Code
- (7) Packaging: packed in embossed carrier tape

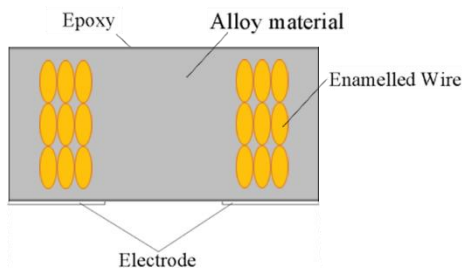


◆ **Dimensions**



Series	L(mm)	W(mm)	H(mm)	F(mm)	Recommended Land Patterns		
					A(mm)	B(mm)	E(mm)
CMLO201208T	2.0±0.2	1.2±0.2	0.8Max.	0.7±0.2	0.5Typ.	2.1Typ.	1.3Typ.

◆ **Structural drawing**



No.	Component	Material
①	Body	Alloy material
②	Winding	Enamelled Wire
③	Shield	Epoxy
④	Electric	Base plating-Cu
		Base plating-Ni
		Base plating-Sn

◆ **Specification**

Part No.	Inductance Ls(uH)	Direct Current Resistance DCR(mΩ)		Temperature Rise Current I _{rms} (A)		Saturation Current I _{sat} (A)	
		Typ	Max.	Typ	Max.	Typ	Max.
CMLO201208TR24MTT	0.24	18	23	6.5	6.1	6.5	6.0
CMLO201208TR33MTT	0.33	33	45	4.3	4.0	5.2	4.8
CMLO201208TR47MTT	0.47	34	50	3.5	3.3	5.0	4.6
CMLO201208TR68MTT	0.68	50	60	3.7	3.3	4.2	3.7
CMLO201208T1R0MTT	1.0	55	70	3.3	2.9	4.0	3.5
CMLO201208T1R5MTT	1.5	118	135	2.2	1.9	3.0	2.5
CMLO201208T2R2MTT	2.2	160	185	2.2	1.8	2.6	2.3
CMLO201208T3R3MTT	3.3	253	300	1.8	1.5	1.9	1.6
CMLO201208T4R7MTT	4.7	285	325	1.7	1.5	1.6	1.4

Test condition & equipment :

Item	Test condition	Test equipment
Ls	1MHz/1V	HP4263BIM3532-50 or equivalent
DCR	direct-current	HP4263BRM3545 or equivalent
I _{sat}	1MH/1V	Microtest 6379 &6220 or equivalent
I _{rms}	ambient temperature 20°C	Microtest 6379 &6220 or equivalent

◆ **Operating Temperature Range**

-40°C~+125°C,Including self-heating

I_{sat}: The DC current at which the inductance drops approximate 30%from its value without current, Load current time within Ls.

I_{rms}: The DC current is inductor surface temperature to rise by 40°C.

◆ **Storage Conditions**

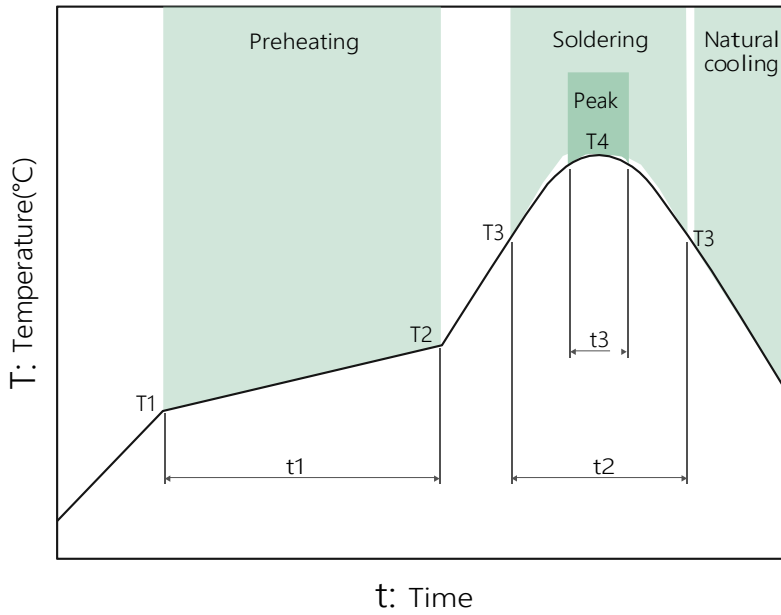
Store products in a warehouse in compliance with the following condition:

Temperature: Inductors (product with taping) -10 to +40°C;

Inductors body -40 to +85°C.

Humidity: 30~70%RH

◆ **RECOMMENDED REFLOW PROFILE**



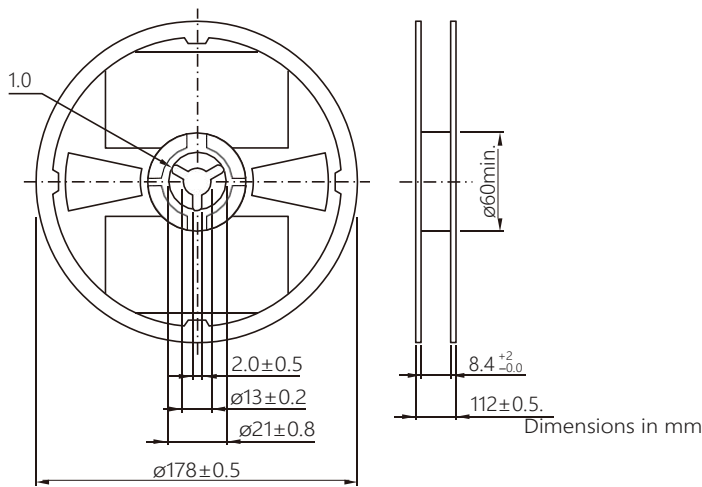
Preheating			Soldering		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	30 to 50s	250 to 260°C	10s max

◆ **Reliability Mechanical**

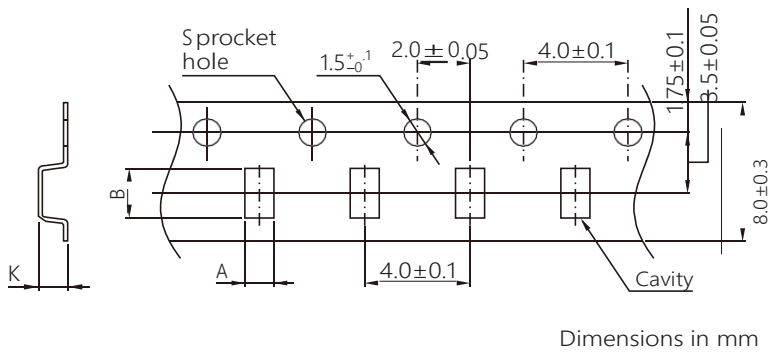
序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
1	绝缘电阻 Insulation Resistance	$\geq 100M\Omega$	在电感器线圈和本体顶面中间施加 100 V 直流电压保持 60 s。 100 V DC between inductor coil and The middle of the top surface of the body for 60 seconds.
2	可焊性 Solderability	电极面 90%以上覆盖新的焊料。 90% or more of electrode area shall be coated by new solder.	在(245±5) °C 熔融的焊锡 (96.5Sn/3.0Ag/0.5Cu) 中浸(5±1) s。 Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at (245±5) °C for (5±1) seconds.
3	耐焊接热 Resistance to Soldering Heat	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	在(260±5) °C 熔融的焊锡 (96.5Sn/3.0Ag/0.5Cu) 中浸(10±1) s。 Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at (260±5) °C for (10±1) seconds.
4	端子强度 Adhesion of terminal electrode	元件的端子与本体结合无松动、无脱落。 Strong bond between the pad and the core, without come off PC board.	将电感器用(260±5) °C，(20±5) s 焊在带有 0.3 mm 厚锡膏的基板上，然后用治具垂直电极面方向加压 10 N，(10±1) s。 Inductors shall be subjected to (260±5) °C for (20±5) s Soldering in the base whit 0.3mm solder. And then aplomb electrode way plus tax 10 N for (10±1) seconds.
5	耐高温 High temperature	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	温度(+85 ± 2) °C, 时间(96±2) h; Temperature is (+85±2) °C and keep (96±2) hours.
6	耐低温 Low temperature	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	温度(-40 °C ± 2) °C， 时间(96±2) h; Temperature is (-40±2) °C and keep (96±2) hours.

序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
7	温度变化 Thermal shock	外观无可见机械损伤；电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	(-40±3) °C, 时间(30±3) min ↔ (125±2) °C/(30±3) min, 转换时间(2~3) min, 循环32次；在室温下放置 2 小时后、48 小时内测试。 The test sample shall be placed at (-40±3)°C and (125±2)°C for (30±3) min, different temperature conversion time is 2~3 minutes. The temperature cycle shall be repeated 32 cycles. Placed at room temperature for 2 hours, within 48 hours of testing.
8	温度特性 Temperature characteristic	电感量变化率 P_{c-b}, P_{c-d} 不超过 ±20%。 Inductance change P_{c-b}, P_{c-d} : Within ±20%	a: +20 °C (30~45) min → b: -40 °C (30~45) min → c: +20 °C (30~45) min → d: +125 °C (30~45) min → e: +20 °C (30~45) min $P_{c-b} = \frac{L_b - L_c}{L_c} \times 100\%$; $P_{c-d} = \frac{L_d - L_c}{L_c} \times 100\%$
9	恒定湿热 Static Humidity	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	将电感器放置在于湿度(93±3)%RH, 温度(40±2) °C 的环境中存放(1000±2) h, 在室温下放置 2 小时后、48 小时内测试。 Inductors shall be subjected to (93±3)%RH . at (60±2)°C for (96±2) h . Placed at room temperature for 2 hours, within 48 hours of testing.
10	耐久性 (寿命) Life	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	温度(85±2)°C, 时间(1000±24) h, 施加 Irms, 在室温下放置 2 小时后、48 小时内测试。 Inductors shall be store at (85±2)°C for (1000±24) hours with Irms applied. Placed at room temperature for 2 hours, within 48 hours of testing.

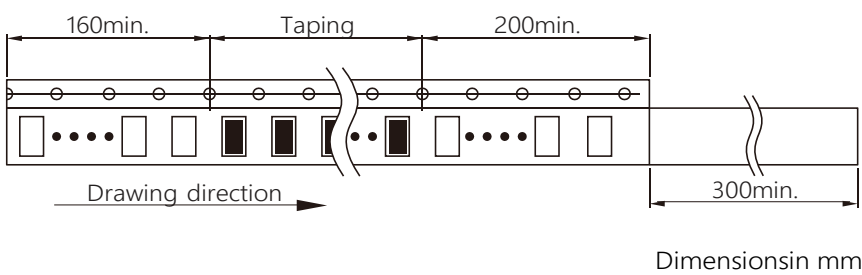
◆ **Taping reel dimensions**



◆ **Carrier tape dimensions**



Series Type	A	B	K
CMLO201208T	1.5	2.3	1.0



◆ **Package quantity**

Package quantity	3000 pcs/reel
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