



深圳市伟易特电子有限公司  
Shenzhen WeiYITE Electronic Co., Ltd

RoHS & Halogen Free & REACH Compliance.

**SPECIFICATION FOR APPROVAL**

CUSTOMER : \_\_\_\_\_  
CUSTOMER P/N : \_\_\_\_\_  
Drawing No: \_\_\_\_\_  
QUANTITY : 10 Pcs. DATE : 2022/5/19  
OUR P/N : CLMP01610C-1R0M

SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

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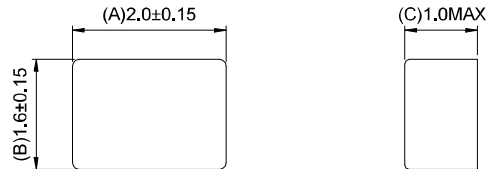
DRAWN BY 张爽	CHECKED BY 鲁亮	APPROVED BY 陈青松
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# MOLDING SMD POWER INDUCTOR CLMP201610C SRIES



## FEATURES

- RoHS compliant, UL94V-0
- Small size (2.15\*1.75mm Max), low profile (Height: 1.0mm Max)
- Inductance range from 0.33uH to 4.7uH
- Surface mount design
- Magnetic shield construction
- Ultra low buzz noise due to composite construction
- Handle transient current spikes without saturation
- Excellent temperature stability for inductance and saturation
- Tape & reel packing
- Solder profile acc. J-STD-020D



## APPLICATIONS

- Low profile, high current power supplies
- DC/DC converters
- Battery powered devices
- PDA/notebook/desktop/server applications

## ABSOLUTE MAXIMUM RATINGS

- Operating temperature rang -55°C to +155°C  
(Including coil self temperature rise)
- Storage temperature rang -55°C to +155°C

## SOLDERING INFORMATION

- Peak reflow temperature 250°C
- Pin finish tin

## PACKAGING INFORMATION

- Tape & Reel 3000 pcs per reel
- Weight 0.02g/pcs

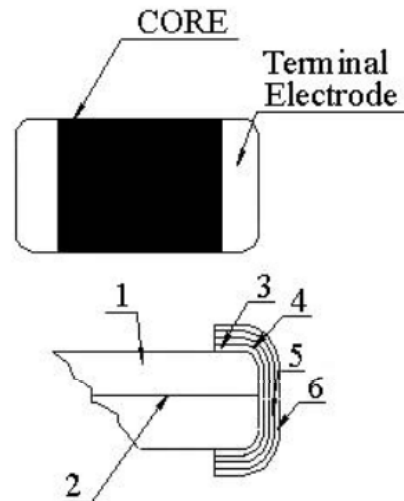
## Notes

- Electrical specification at 25°C.
- Inductance tested at 1MHz, 1.0 Vrms.
- I<sub>rms</sub> is the current that caused a approximate 40°C temperature rise from 25°C ambient.
- I<sub>sat</sub> is the DC current at which inductance drop approximately 30% from its value without current.
- The part temperature (ambient + temp. rise) should not exceed 155°C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Part number	Inductance ( $\mu\text{H} \pm 20\%$ )	DCR (m $\Omega$ ) @ 25°C		I <sub>rms</sub> (A)	I <sub>sat</sub> (A)
		TYP.	MAX.		
CLMP201610C-R33M	0.33	21	26	4.4	5.2
CLMP201610C-R47M	0.47	26	32	4.05	4.5
CLMP201610C-R68M	0.68	40	50	3.1	4.0
CLMP201610C-1R0M	1.0	49	59	3.0	3.65
CLMP201610C-1R5M	1.5	99	109	2.05	2.7
CLMP201610C-2R2M	2.2	142	150	2.0	2.45
CLMP201610C-4R7M	4.7	210	250	1.3	1.7

CLMP201610C Series

1 Construction:

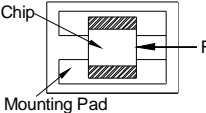


2 Material List:

NO	Part	Description
1	Core	Metal Powder
2	Wire	Copper wire
3	Sputter/Plating	Cu
4	Silver Electrode	Ag
5	Plating	Ni
6	Plating	Sn

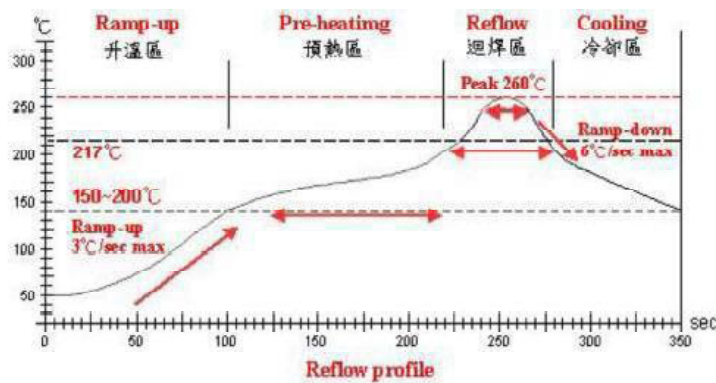
## Reliability Of Molding power inductors

### 1-1.Mechanical Performance

	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec
1-1-2	Vibration		Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-3	Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal electrode should be covered with solder. Inductance: within $\pm 20\%$ of initial value	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260 $\pm 5$ °C Immersion Time: 10 $\pm 1$ sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 $\pm 5$ °C Immersion Time: 4 $\pm 1$ sec
1-1-5	Terminal Strength Test	No split termination  Chip Mounting Pad	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow. Force : 5N Keeping Time: 10 $\pm 1$ sec

### 1-2.Environmental Performance

No	Item	Specification	Test Method		
1-2-1	Temperature Cycle	Appearance: No damage Inductance: within $\pm 20\%$ of initial value	One cycle:		
			Step	Temperature (°C)	Time (min)
			1	-40 $\pm 3$	30
			2	25 $\pm 2$	2
			3	125 $\pm 3$	30
4	25 $\pm 2$	2			
			Total: 100cycles		
			Measured after exposure in the room condition for 24hrs		
1-2-2	Humidity Resistance		Temperature: 60 $\pm 2$ °C Relative Humidity: 90 ~ 95% / Time: 500hrs Measured after exposure in the room condition for 12hrs		
1-2-3	High Temperature Resistance		Temperature: 85 $\pm 3$ °C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 12hrs		
1-2-4	Low Temperature Resistance		Temperature: -40 $\pm 3$ °C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 12hrs		



Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T. ~150°C	150°C ~ 200°C	217°C	260±5°C	Peak Temp. ~ 150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	—

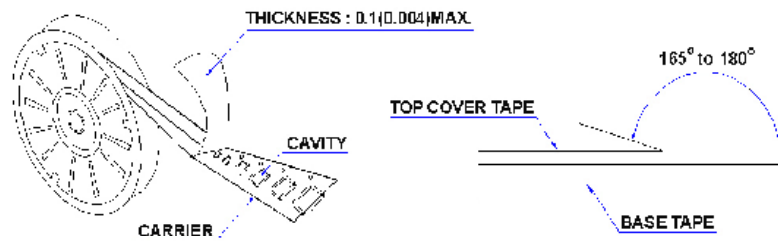
NOTE :

1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow

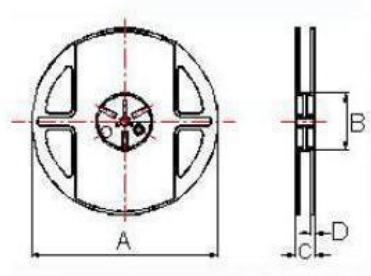
## PACKAGING

### 1 Packaging -Cover tape

The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



### 2 Reel Dimensions

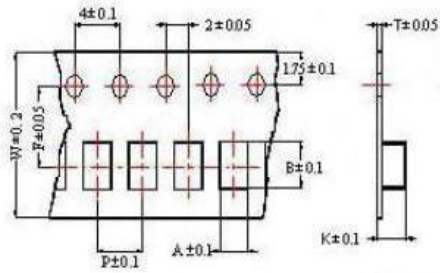


Dimensions in mm

A	B	C	D
178	60	12	1.5

**PACKAGING**

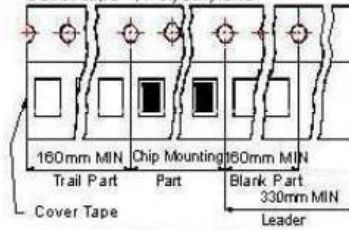
**3 Tape Dimensions in mm**



**Tape Material**

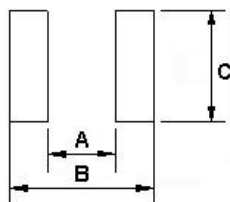
Carrier tape : Polycarbonate

Cover tape : Polyethylene



A	B	T	W	P	F	K
1.8	2.2	0.22	8	4	3.5	1.05

**Recommended Pattern**



Dimensions in mm

A	B	C
$0.7 \pm 0.2$	$2.0 \pm 0.3$	$1.6 \pm 0.2$