



◆ **Features**

- 1、Magnetic-resin shielded construction reduces buzz noise to ultra-low levels;
- 2、Metallization on ferrite core results in excellent shock resistance and damage-free durability;
- 3、Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI);
- 4、30% higher current rating than conventional inductors of equal size;
- 5、Take up less PCB real estate and save more power.



◆ **Applications**

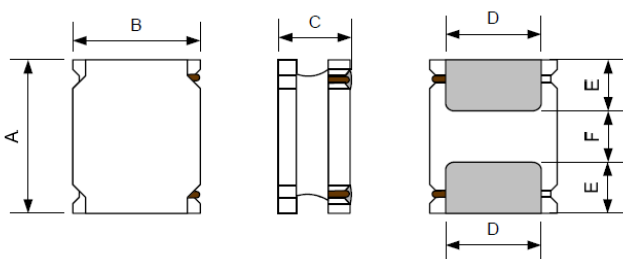
- 1、LED Lighting;
- 2、Mobile devices with multifunction such as adding color TV and camera;
- 3、Flat-screen TVs, blue-ray disc recorders, set top boxes;
- 4、Notebooks, desktop computers, servers, graphic cards;
- 5、Portable gaming devices, personal navigation systems, personal multimedia devices;
- 6、Automotive systems
- 7、Telecomm base stations

◆ **Lead Free Part Numbering**

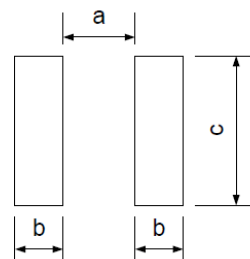
CMLW 5040 S 100 M S T
(1) (2) (3) (4) (5) (6) (7)

- (1) Series Type
- (2) Dimension: L X H
- (3) Material Code
- (4) Inductance: 2R2=2.2μH ;
100=10μH; 101=100μH
- (5) Inductance Tolerance: M=±20%, N=±30%
- (6) Company Code
- (7) Packaging : Tape Carrier Package

◆ **Dimensions**



Recommended Land Pattern



Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
CMLW5040S	5.0±0.2	5.0±0.2	4.0Max.	4.0±0.2	1.25±0.2	2.50±0.2	2.1	1.5	4.4

◆ **Electrical Characteristics**

- 1) Operating temperature range (Including self-heating): -40°C ~ +125°C
- 2) Storage temperature range (packaging conditions): -10°C~+40°C and RH 70% (Max.)

◆ **Construction and material**



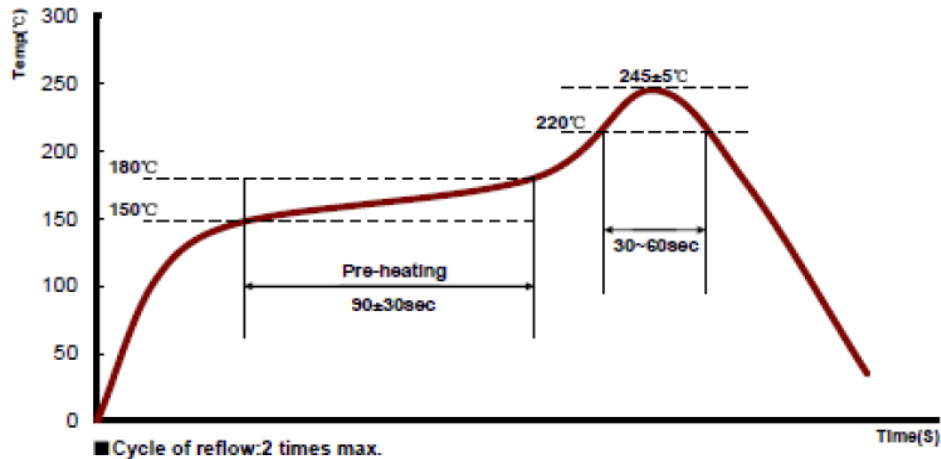
Code	Part Name	Material Name
①	Ferrite Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating Electrodes	Ag
		Ni
		Sn
⑤	Outer Electrodes	Top surface solder coating Sn、Ag、Cu

◆ **REFLOW-PROFILE**

Limit Profile



Standard Profile (for EOC Solder paste S70G-HF)



◆ Specification

Part Number	Inductance @100KHz, 1V (μ H)	DC Resistance $\pm 30\%$ (Ω)	Min.Self-resonant Frequency (MHz)	Saturation Current(A)	Heat Rating Current (A)
		DCR	S.R.F	Isat	Irms
CMLW5040 Series					
CMLW5040S1R0MST	1.0 $\pm 20\%$	0.012	117	7.35	4.90
CMLW5040S1R5MST	1.5 $\pm 20\%$	0.013	86	7.30	4.45
CMLW5040S2R2MST	2.2 $\pm 20\%$	0.019	42	6.50	3.95
CMLW5040S3R3MST	3.3 $\pm 20\%$	0.025	32	5.10	3.40
CMLW5040S4R7MST	4.7 $\pm 20\%$	0.030	28	4.40	3.10
CMLW5040S6R8MST	6.8 $\pm 20\%$	0.043	21	3.80	2.40
CMLW5040S8R2MST	8.2 $\pm 20\%$	0.048	20	2.70	2.30
CMLW5040S100MST	10 $\pm 20\%$	0.055	18	2.90	2.10
CMLW5040S150MST	15 $\pm 20\%$	0.089	13	2.30	1.60
CMLW5040S220MST	22 $\pm 20\%$	0.126	9	1.90	1.40
CMLW5040S330MST	33 $\pm 20\%$	0.192	7	1.60	1.20
CMLW5040S470MST	47 $\pm 20\%$	0.283	6	1.30	0.94
CMLW5040S680MST	68 $\pm 20\%$	0.520	5	1.10	0.90
CMLW5040S820MST	82 $\pm 20\%$	0.610	5	0.80	0.70
CMLW5040S101MST	100 $\pm 20\%$	0.728	4	0.80	0.65
CMLW5040S151MST	150 $\pm 20\%$	0.915	2	0.60	0.50
CMLW5040S221MST	220 $\pm 20\%$	1.550	2	0.55	0.45
CMLW5040S331MST	330 $\pm 20\%$	3.020	2	0.45	0.38
CMLW5040S471MST	470 $\pm 20\%$	3.600	1	0.40	0.35
CMLW5040S561MST	560 $\pm 20\%$	4.160	1	0.35	0.33
CMLW5040S102MST	1000 $\pm 20\%$	8.640	1	0.30	0.25

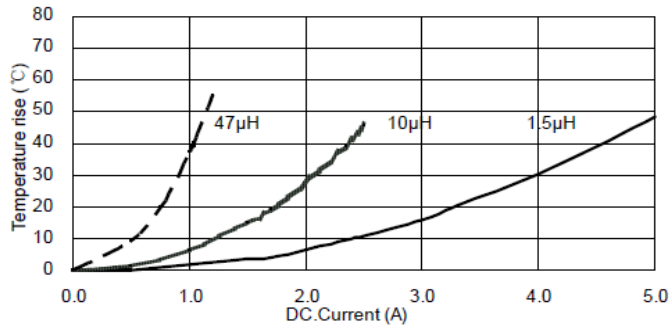
◆ Note

- 1: All test data is referenced to 20°C ambient;
- 2: Rated current: Isat or Irms, whichever is smaller;
- 3: Isat: DC current at which the inductance drops approximate 30% from its value without current;
- 4: Irms: DC current that causes the temperature rise ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.

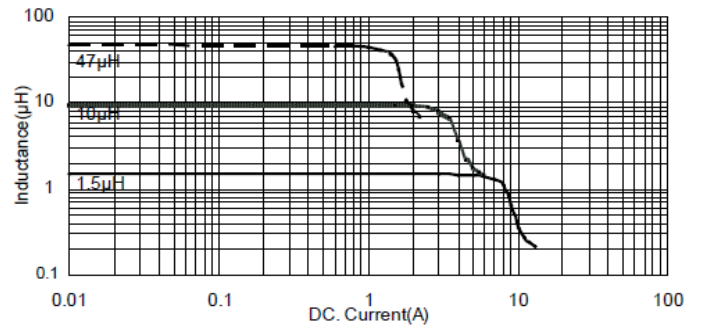
◆ TYPICAL ELECTRICAL CHARACTERISTICS

CMLW5040S Series

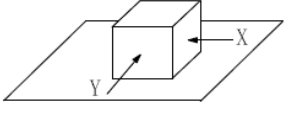
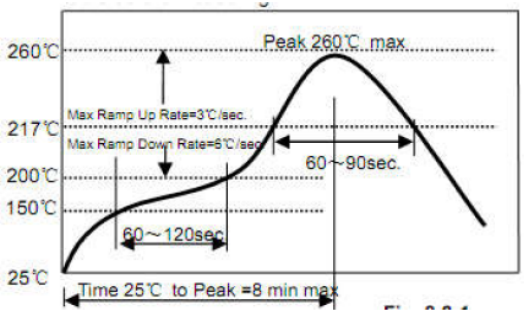
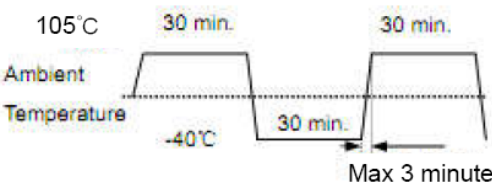
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

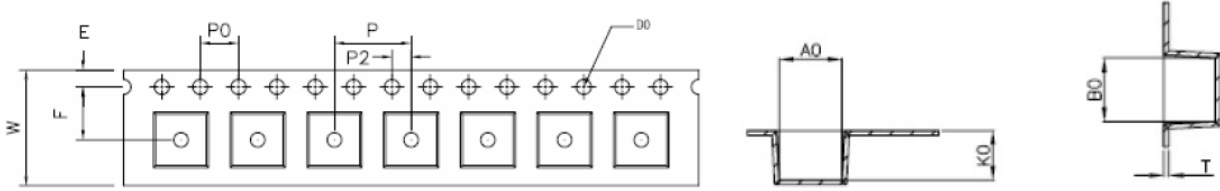


◆ Reliability Test

Items	Requirements	Test Methods and Remarks
A. Terminal Strength	No removal or split of the termination or other defects shall occur.  Fig.7.1-1	1) Solder the inductor to the testing jig (glass epoxy board shown in Fig.7.1-1) using eutectic solder. Then apply a force in the direction of the arrow. 2) 10N force. 3) Keep time: 5±2s
B. High Temperature	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Storage Temperature :125+/-5°C 2) Duration : 96 ±4 Hours 3) Recovery : then measured at room ambient temperature after placing 24 hours.
C. Low Temperature	1. No visible mechanical damage 2. Inductance change: Within ±10%	1) Temperature and time: -40±5°C 2) Duration: 96±4 hours 3) TRecovery : then measured at room ambient temperature after placing 24 hours.
D. Vibration test	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Frequency range:10HZ~55HZ~10HZ 2) Amplitude:1.5mm p-p 3) Direction:X,Y,Z 4) Time:1 minute/cycle,2hours per axis
E. High Temperature Storage Tested	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Storage Temperature :60+/-2°C 2) Relative Humidity :90-95% RH 3) Duration : 96 ±4 Hours 4) Recovery : then measured at room ambient temperature after placing 24 hours.
F. Resistance to Soldering Heat	1. No visible mechanical damage. 2. Inductance change: Within ±10%  Fig. 1	1) Re-flowing Profile: Please refer to Fig. 1 2) Test board thickness: 1.0mm 3) Test board material: glass epoxy resin 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring
G. Thermal Shock	1. No visible mechanical damage. 2. Inductance change: Within ±10%  Fig. 2	1) Temperature and time: -40±3°C for 30±3 min→105°C for 30±3min, please refer to Fig. 2. 2) Transforming interval: Max, 3 minute 3) Tested cycle: 100 cycles 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring

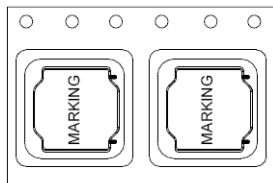
◆Packaging and Marking:

1. Carrier Tape Dimensions:

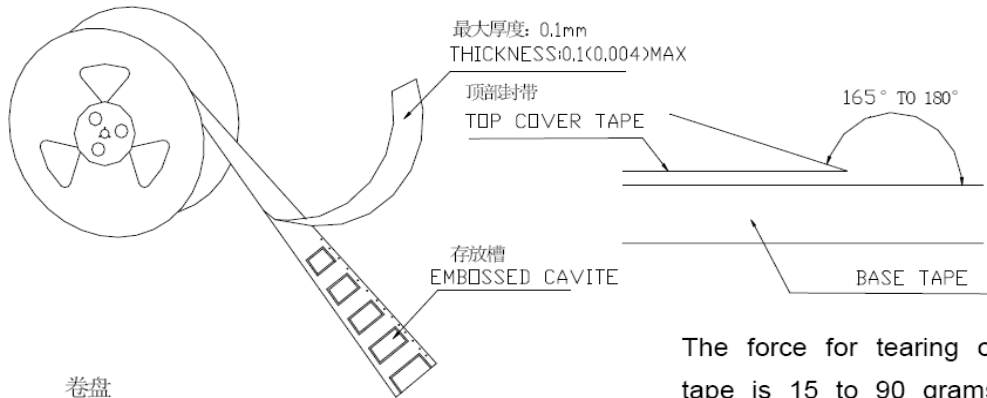


ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12.00	5.3	5.3	4.3	8.00	5.50	1.75	1.50	1.50	4.00	2.00	0.4
TOLE	±0.3	±0.1	±0.1	±0.15	±0.1	±0.15	±0.1	+0.1	+0.1	±0.1	±0.1	±0.05

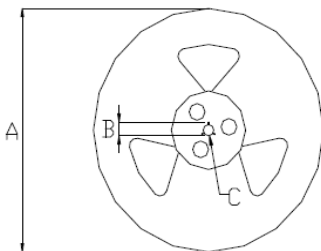
2. Taping Dimensions:



3. Reel Dimensions:

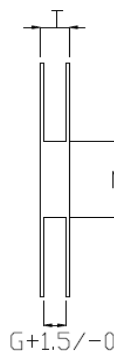


卷盘
Carrier Tape Reel



The force for tearing off cover tape is 15 to 90 grams in the arrow direction/按箭头的方向施加 15 克至 90 克力撕开

材质: 塑胶
MATERIAL: PLASTIC



Unit: mm

Type	A	B	C	G	N	T
12mm	330	21±0.8	13±0.4	12.4	100	16.4

4. Packaging Quantity:

Standard Packing Quantity: 1500 pcs/reel