



◆ 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

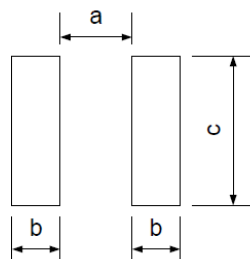
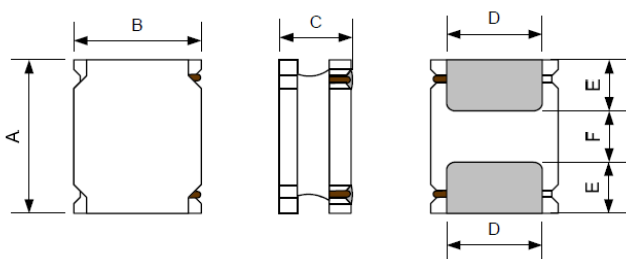
◆ Lead Free Part Numbering

CMLW 8040 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



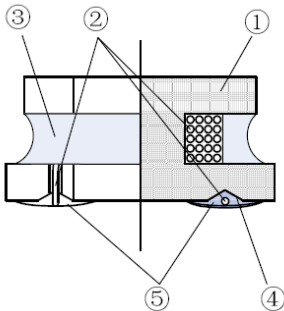
Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
CMLW8040S	8.0±0.3	8.0±0.3	4.2Max.	6.3±0.3	2.00±0.3	4.00±0.3	3.8	2.2	7.5

◆ **Electrical Characteristics**

- 1) Operating temperature range (Including self-heating): $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- 2) Storage temperature range (packaging conditions): $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and RH 70% (Max.)

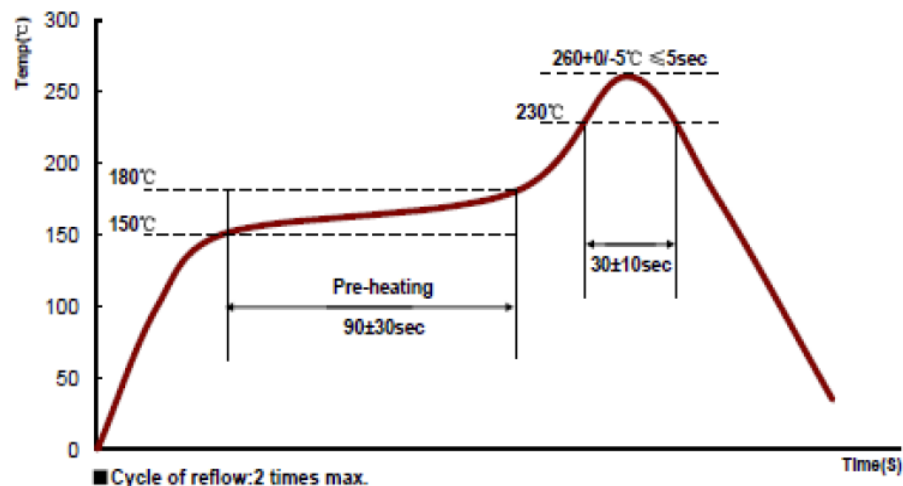
◆ **Construction and material**



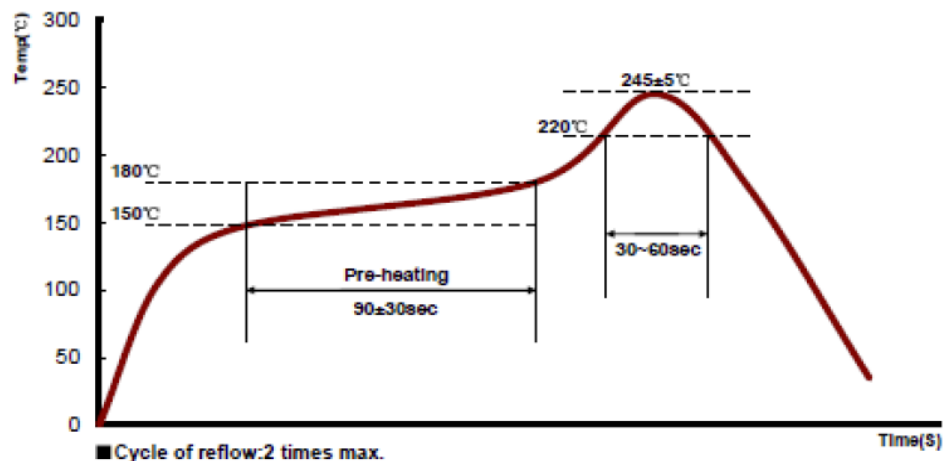
Code	Part Name	Material Name
①	Ferrite Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating Electrodes	Ag
		Ni
		Sn
⑤	Outer Electrodes	Top surface solder coating Sn、Ag、Cu

◆ **REFLOW-PROFILE**

Limit Profile



Standard Profile (for EOC Solder paste S70G-HF)



◆ Specification

Part Number	Inductance @100KHz, 1V (μH)	DC Resistance ±30% (Ω)	Min.Self-resonant Frequency (MHz)	Saturation Current(A)	Heat Rating Current (A)
		DCR	S.R.F	Isat	Irms
CMLW8040S Series					
CMLW8040SR82NST	0.82±30%	0.008	94	13.80	6.30
CMLW8040S1R0NST	1.0±30%	0.008	89	9.85	6.30
CMLW8040S1R5NST	1.5±30%	0.010	67	8.15	5.65
CMLW8040S2R2MST	2.2±20%	0.012	41	7.10	5.15
CMLW8040S3R3MST	3.3±20%	0.017	27	6.50	4.40
CMLW8040S4R7MST	4.7±20%	0.019	24	5.90	4.10
CMLW8040S5R6MST	5.6±20%	0.021	24	6.00	3.85
CMLW8040S6R8MST	6.8±20%	0.024	20	4.55	3.60
CMLW8040S8R2MST	8.2±20%	0.026	17	4.20	3.45
CMLW8040S100MST	10±20%	0.029	15	3.60	3.30
CMLW8040S120MST	12±20%	0.041	13	3.50	2.80
CMLW8040S150MST	15±20%	0.047	12	2.95	2.60
CMLW8040S220MST	22±20%	0.069	9.5	2.40	2.10
CMLW8040S330MST	33±20%	0.097	7.8	2.05	1.80
CMLW8040S470MST	47±20%	0.136	6.4	1.75	1.55
CMLW8040S560MST	56±20%	0.148	6.4	1.55	1.45
CMLW8040S680MST	68±20%	0.196	4.9	1.45	1.25
CMLW8040S101MST	100±20%	0.290	4.2	1.15	1.00
CMLW8040S121MST	120±20%	0.334	3.5	1.05	0.95
CMLW8040S151MST	150±20%	0.410	3.5	1.10	0.85
CMLW8040S221MST	220±20%	0.599	3.5	0.85	0.80
CMLW8040S331MST	330±20%	0.889	2.8	0.68	0.64

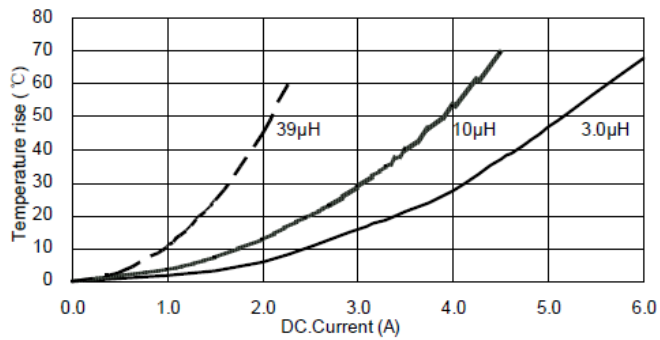
◆ Note

- 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.

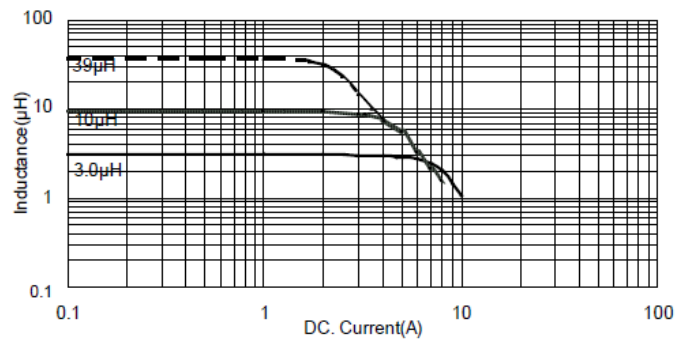
◆ TYPICAL ELECTRICAL CHARACTERISTICS

CMLW8040S Series

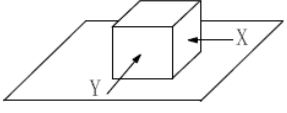
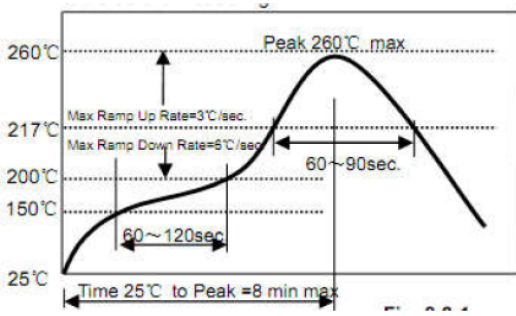
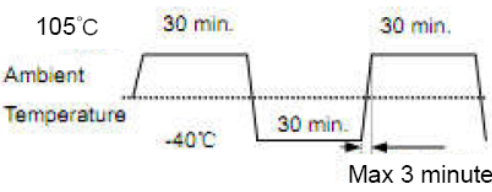
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

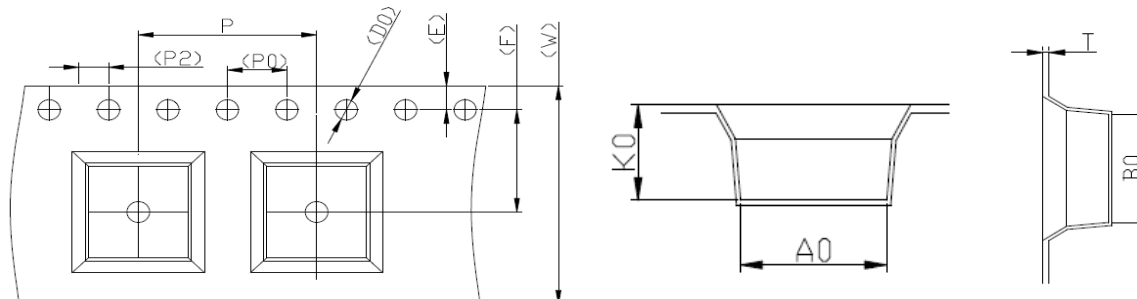


◆ Reliability Test

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℃ 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℃ 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℃ 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℃ for 30±3 min→105℃ 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

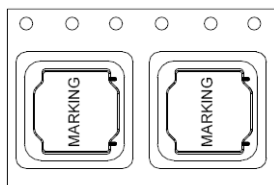
◆Packaging and Marking:

1.Carrier Tape Dimensions:

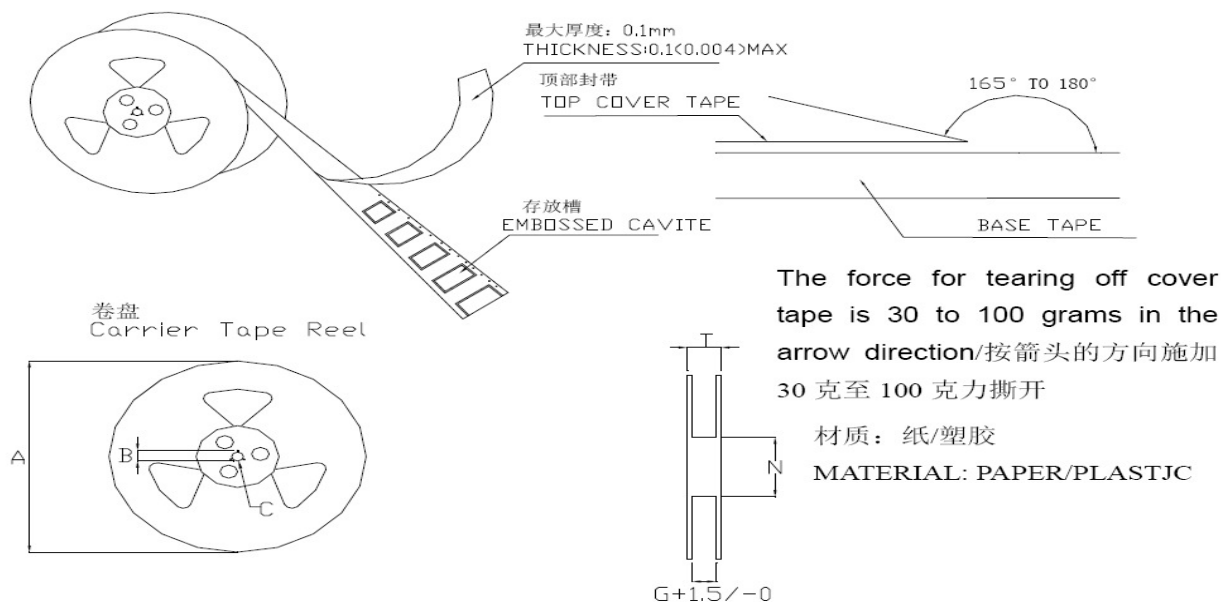


ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	16.00	8.40	8.40	4.2	12.00	7.50	1.75	1.50	1.50	4.00	2.00	0.35
TOLE	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1	+0.1	±0.1	±0.1	±0.05

2.Taping Dimensions:



3.Reel Dimensions:



Unit: mm

Type	A	B	C	G	N	T
16mm	330	21±0.8	13±0.4	16.4	100	20.4

4. Packaging Quantity:

Standard Packing Quantity: 1000 pcs/reel