



◆ Features

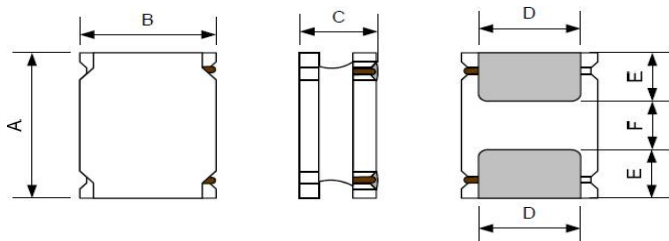
- 1、Magnetic-resin shielded construction reduces buzz noise to ultra-low levels;
- 2、Metallization on ferrite core results in excellent shock resistance and damage-free durability;
- 3、Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI);
- 4、30% higher current 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

◆ Dimensions

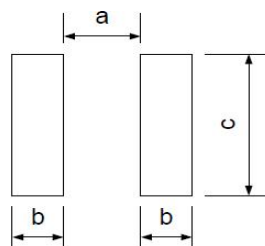


◆ Lead Free Part Numbering

CMLW 252012 S 2R2 M S T
(1) (2) (3) (4) (5) (6) (7)

- (1) Series Type
- (2) Dimension: L × W × H (2.5 × 2.0 × 1.2mm)
- (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

Recommended Land Pattern



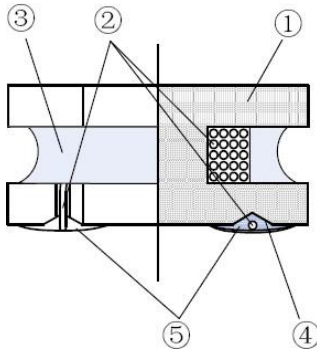
Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
CMLW252012S	2.5±0.2	2.0±0.2	1.2Max.	1.5±0.2	0.80±0.2	0.80±0.2	0.8	0.85	2.0

◆ 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.)

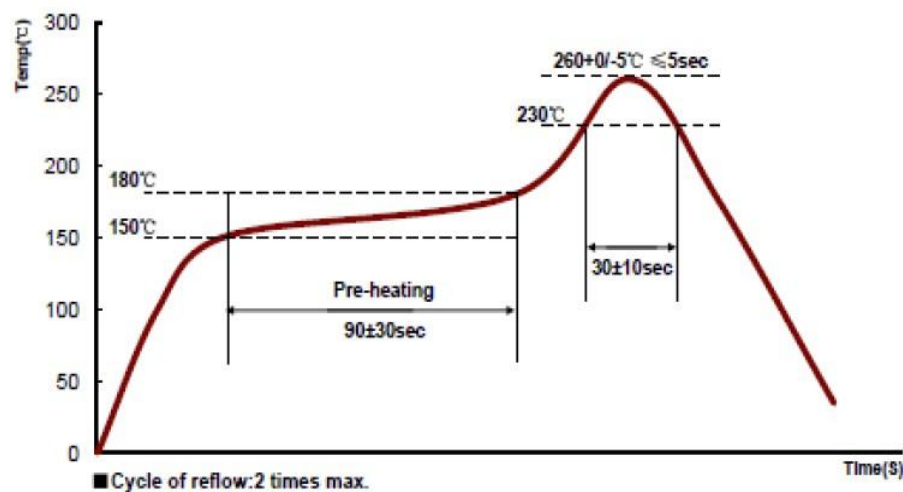
◆ Construction and material



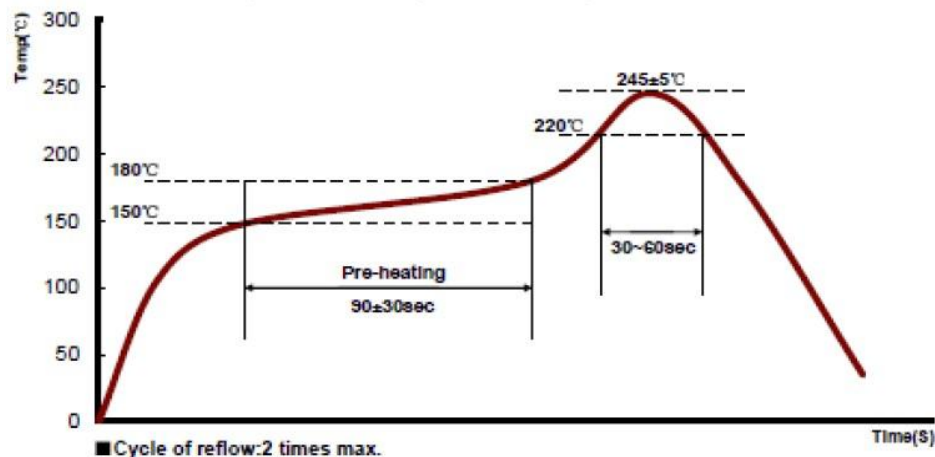
Code	Part Name	Material Name
①	Ferrite Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating Electrodes	Ag
		Ni
		Sn
⑤	Outer Electrodes	Top surface solder coating Sn, Ag, Cu

◆ REFLOW-PROFILE

Limit Profile



Standard Profile (for EOC Solder paste S70G-HF)



◆ Specification

Part Number	Inductance @100KHz, 1V (μ H)	DC Resistance(Ω)		Saturation Current(A)		Heat Rating Current (A)
		Max.	Typ.	Min.	Typ.	Typ.
		DCR		Isat		Irms
CMLW252012 Series						
CMLW252012SR24NST	0.24±30%	0.036	0.029	4.50	5.40	3.90
CMLW252012SR33NST	0.33±30%	0.042	0.036	4.10	5.00	3.60
CMLW252012SR47NST	0.47±30%	0.045	0.041	4.03	4.51	3.70
CMLW252012SR68NST	0.68±30%	0.079	0.072	3.43	3.84	3.30
CMLW252012S1R0MST	1.0 ±20%	0.092	0.083	3.00	3.36	2.60
CMLW252012S1R5MST	1.5±20%	0.122	0.110	2.51	2.81	2.20
CMLW252012S2R2MST	2.2±20%	0.158	0.130	2.07	2.32	1.85
CMLW252012S3R3MST	3.3±20%	0.216	0.196	1.80	2.02	1.45
CMLW252012S4R7MST	4.7±20%	0.341	0.299	1.32	1.48	1.20
CMLW252012S6R8MST	6.8±20%	0.482	0.438	1.10	1.22	1.00
CMLW252012S100MST	10±20%	0.621	0.564	0.99	1.09	0.75
CMLW252012S150MST	15±20%	0.132	1.200	0.76	0.85	0.60
CMLW252012S220MST	22±20%	1.640	1.480	0.59	0.66	0.50

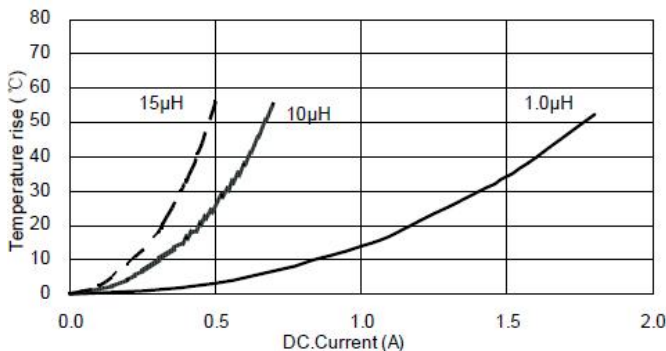
◆ Note

- 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.

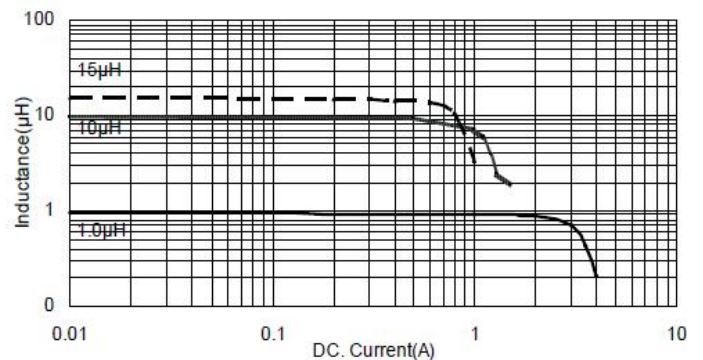
◆ TYPICAL ELECTRICAL CHARACTERISTICS

CMLW252012 Series

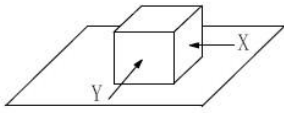
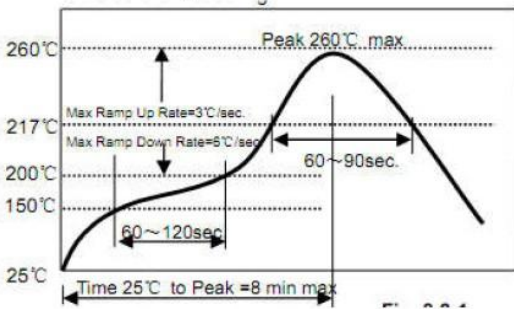
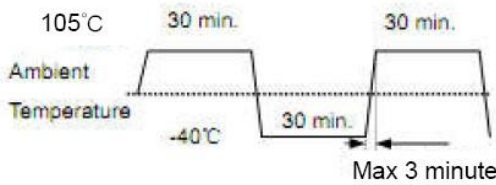
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

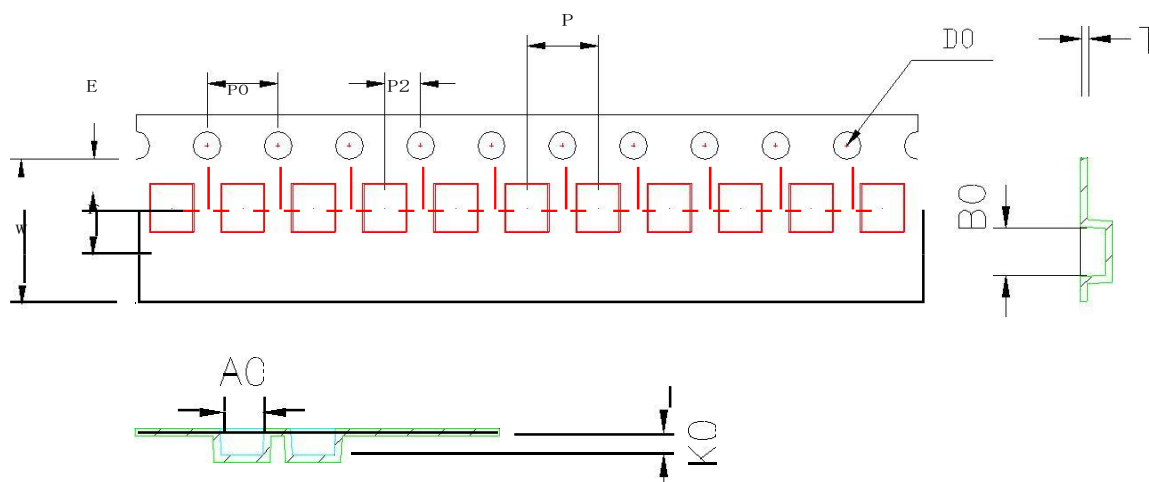


◆ Reliability Test

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

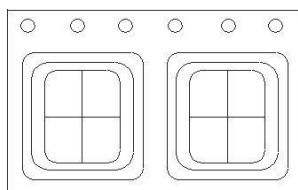
◆ Packaging and Marking:

1. Carrier Tape Dimensions:



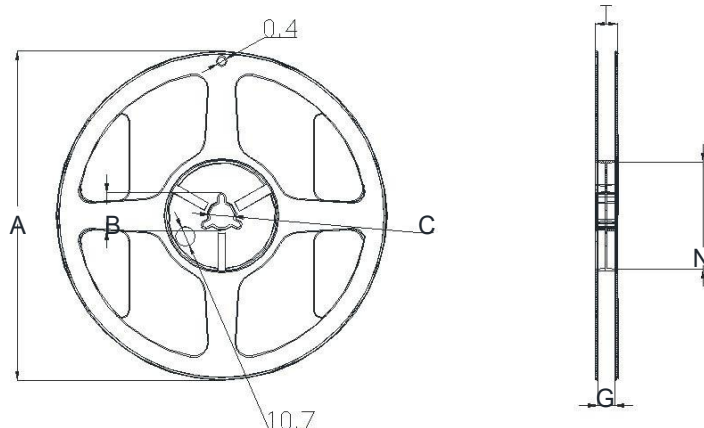
ITEM	W	A0	B0	K0	P	F	E	D0	P0	P2	T
DIM	8.00	2.00	2.40	1.20	4.00	3.5	1.75	1.50	4.00	2.00	0.25
TOLE	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1	±0.1	±0.1	±0.05

2. Taping Dimensions:



3. Reel Dimensions:

Carrier Tape Reel



Type	A	B	C	G	N	T
8mm	178	20.7±0.8	13±0.4	9	60	10.8

4. Packaging Quantity:

Standard Packing Quantity: 2000 pcs/reel