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CMLW4018S Series

Wire Wound SMD Power Inductor

◆ 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

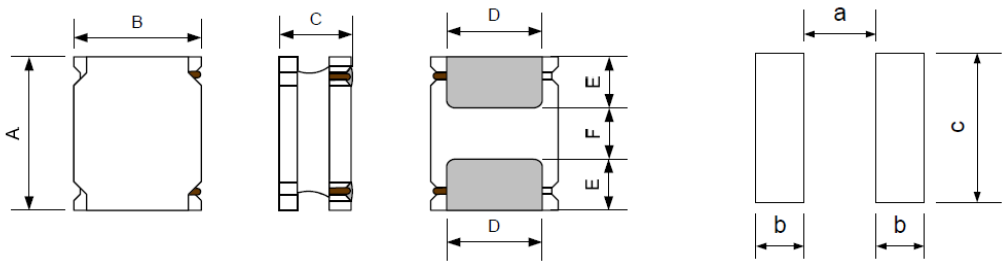
◆ Lead Free Part Numbering

CMLW	4018	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



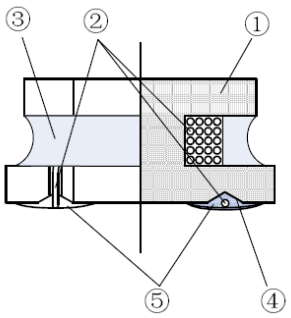
Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
CMLW4018S	4.0±0.2	4.0±0.2	1.8Max.	3.3±0.2	0.95±0.2	2.10±0.2	1.9	1.1	3.7

◆ Electrical Characteristics

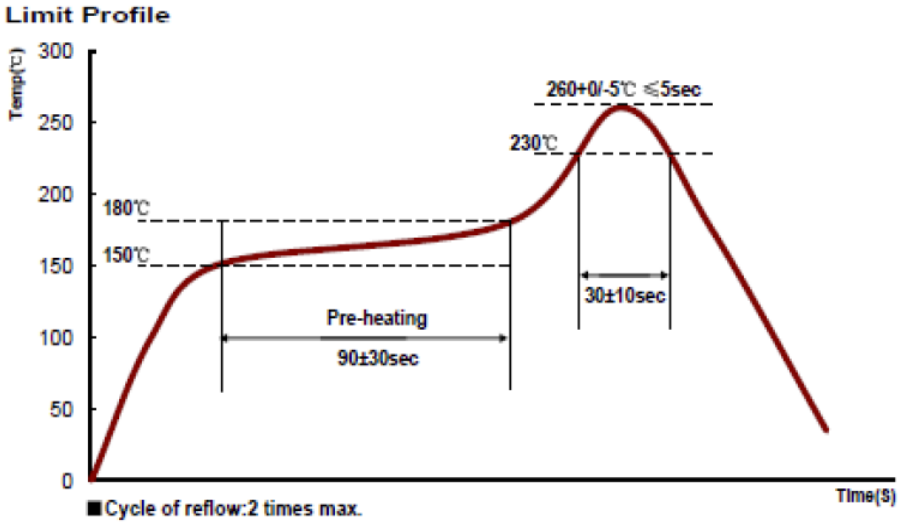
1) Operating temperature range（Including self-heating)：-40℃ ~ +125℃
2) Storage temperature range (packaging conditions): -10℃~+40℃ and RH 70% (Max.)

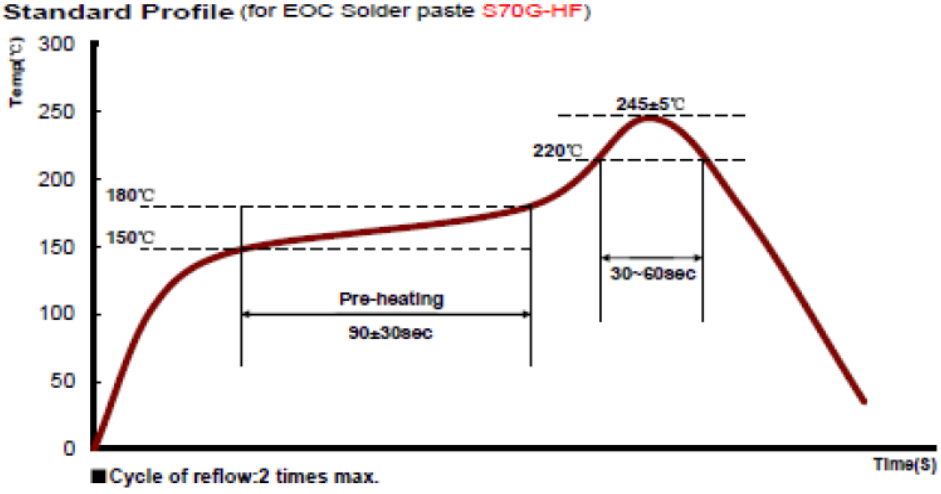
◆ Construction and material



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

◆ REFLOW-PROFILE





◆ 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
CMLW4018 Series					
CMLW4018S1R0MST	1.0±20%	0.025	80	4.80	2.00
CMLW4018S1R5MST	1.5±20%	0.030	65	3.35	1.80
CMLW4018S2R2MST	2.2±20%	0.045	52	3.00	1.65
CMLW4018S3R3MST	3.3±20%	0.070	44	2.45	1.23
CMLW4018S4R7MST	4.7±20%	0.090	34	2.00	1.20
CMLW4018S5R6MST	5.6±20%	0.105	32	1.65	1.10
CMLW4018S6R8MST	6.8±20%	0.110	29	1.45	1.06
CMLW4018S100MST	10±20%	0.180	24	1.30	0.84
CMLW4018S150MST	15±20%	0.250	19	0.94	0.65
CMLW4018S220MST	22±20%	0.360	16	0.80	0.59
CMLW4018S330MST	33±20%	0.530	12	0.65	0.49
CMLW4018S470MST	47±20%	0.650	10	0.57	0.42
CMLW4018S680MST	68±20%	1.000	8.3	0.47	0.32
CMLW4018S101MST	100±20%	1.750	6.5	0.40	0.25
CMLW4018S151MST	150±20%	2.500	5.5	0.31	0.22
CMLW4018S221MST	220±20%	4.000	4	0.27	0.17

◆ Note

1：All test data is referenced to 20°C ambient;

2：Rated current: Isat or Irms, whichever is smaller;

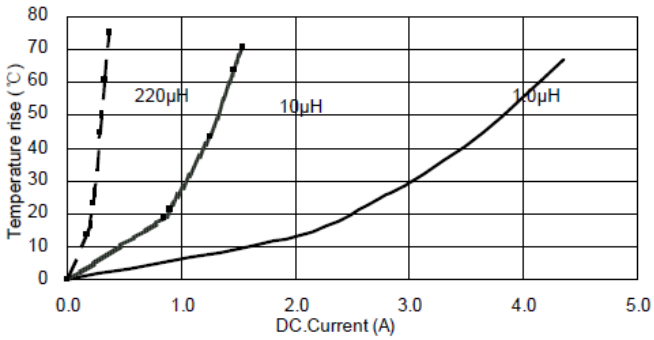
3：Isat: DC current at which the inductance drops approximate 30% from its value without current;

4：Irms: DC current that causes the temperature rise (△T =40°C) from 20°C ambient.

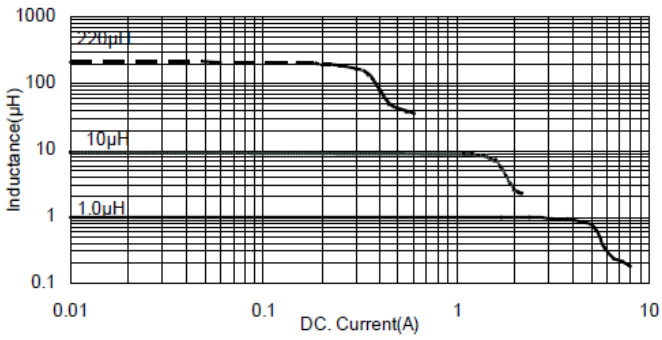
◆ TYPICAL ELECTRICAL CHARA

CMLW4018S Series

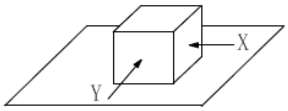
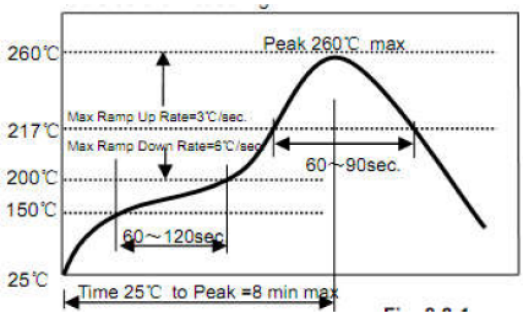
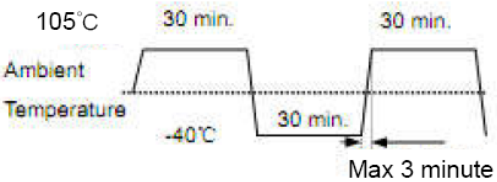
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

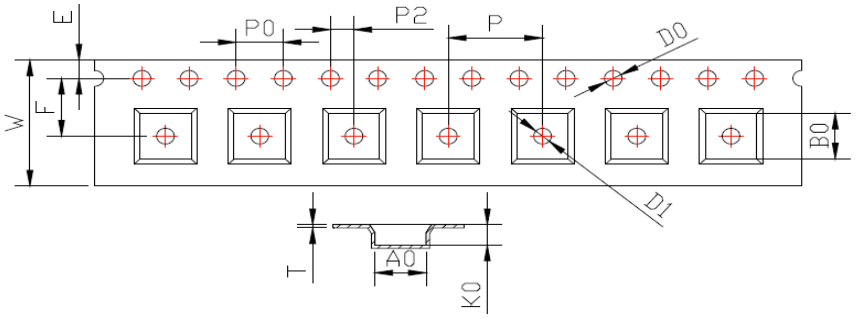


◆Reliability Test

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 Fing.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

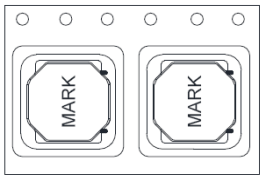
◆Packaging and Marking:

1.Carrier Tape Dimensions:

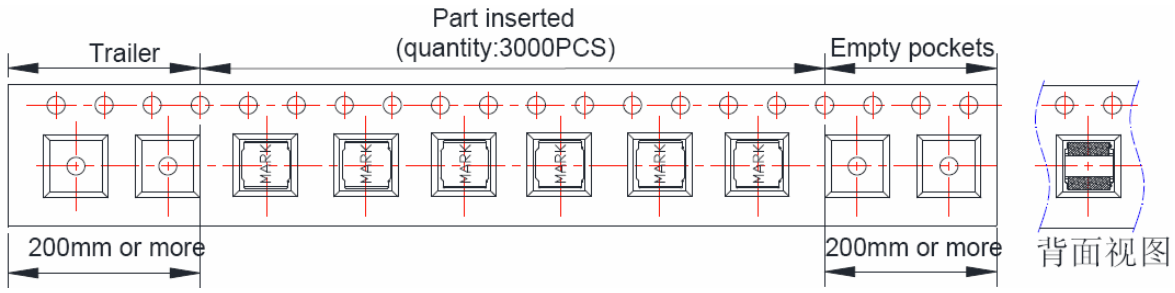


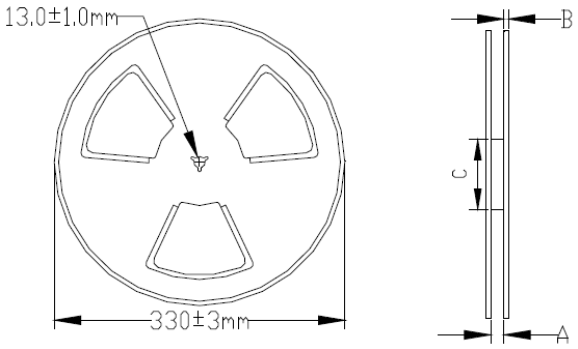
ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12.00	4.3	4.3	1.6	8.00	5.50	1.75	1.50	1.50	4.00	2.00	0.30
TOLE	+0.30 -0.10	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1	+0.1	±0.1	±0.1	±0.05

2.Taping Dimensions:



3.Reel Dimensions:





Unit: mm

Type	A	B	C
12mm	12.5±1	2.2±1	100±1

4. Packaging Quantity:

Standard Packing Quantity：3000 pcs/reel