SLW5040S Series

Wire Wound SMD Power Inductor

◆ Features

1、Metallization on ferrite core results in excellent shock resistance and damage-free durability;
2、Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI);
3、Low DCR decreases power loss, small and slim take up less PCB real estate;
4、Automatic production ensures high quality and consistency;



◆ Applications

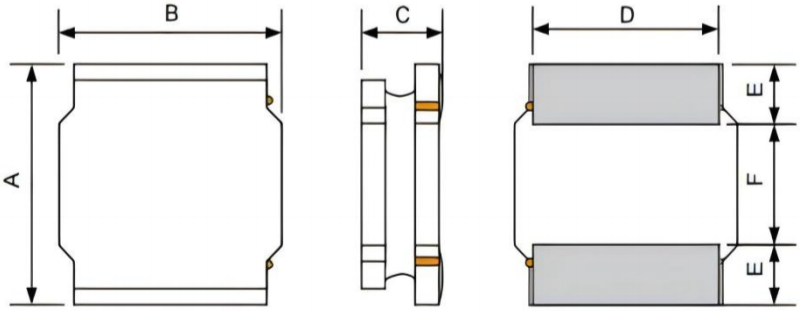
1、LED Lighting;
2、Mobile devices with multifunction such as adding color TV and camera;
3、Flat-screen TVs, blue-ray disc recorders, set top boxes;
4、Notebooks, desktop computers, servers, graphic cards;
5、Portable gaming devices, personal navigation systems, personal multimedia devices;
6、Automotive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

◆ Lead Free Part Numbering

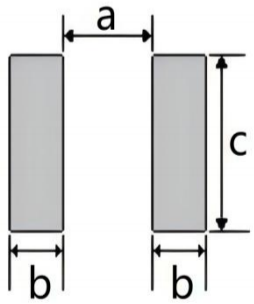
SLW	5040	S	2R2	M	S	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series Type
(2) Dimension: A×B×C
(3) Material Code
(4) Inductance: 2R2=2.2μH 100=10μH
(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 Typ.	F Typ.	a Typ.	b Typ.	c Typ.
SLW5040S	5.0±0.2	5.0±0.2	4.0Max.	4.0±0.2	1.6	1.8	1.6	1.8	4.2

◆ Electrical Characteristics

1、Operating temperature range (individual chip without packing): -40℃ ~ +125℃ （Including Self-heating）.
2、Storage temperature range (packaging conditions): -10℃ ~ +40℃ and RH 70% (Max.).

◆ Construction and material

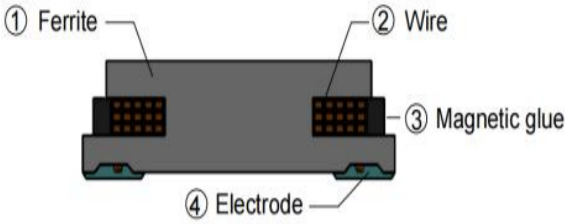


Fig.1 Body Structure

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	Outer Electrodes	Top surface solder coating Sn、Ag、Cu

◆ SOLDERING CONDITIONS

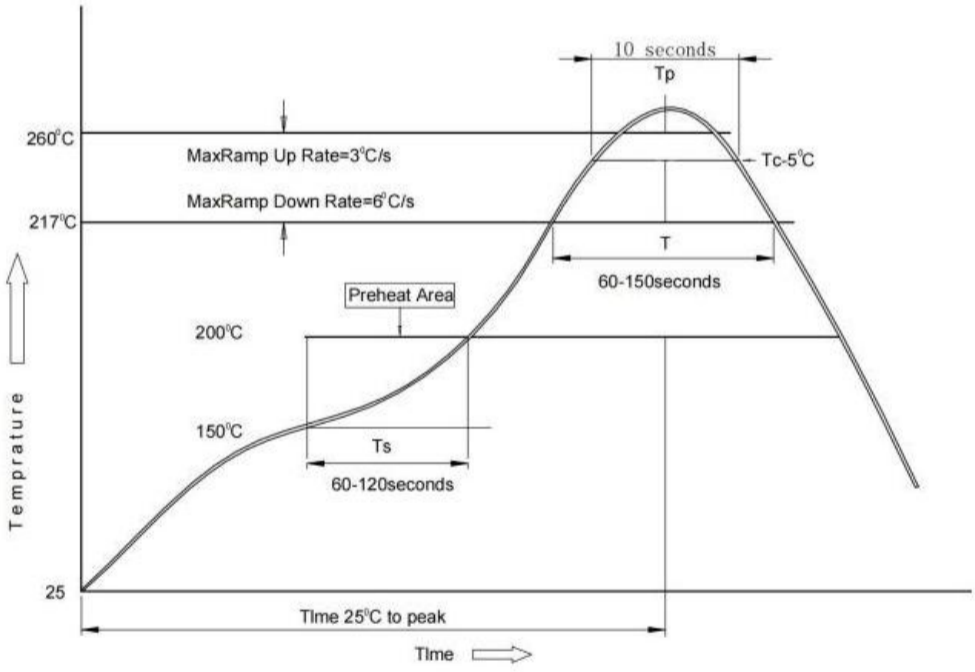
Applicable soldering process to the products is refl

1、Soldering Materials

(1)Solder:Sn-3.0Ag-0.5Cu

(2)Flux:Use rosin-based flux,but not strongly acidic flux (with xhlorine exceeding 0.2wt%).Do not use water soluble flux.

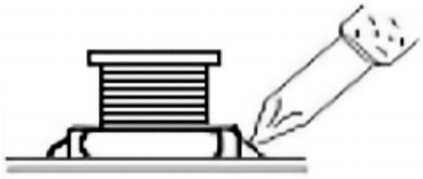
2、Reflow Soldering Profile



3、Soldering Iron

Reworking with electric solding iron must preheating at 150℃ for 1 minute is required,and do not directly touch the core with the tip of the soldering iron.The reworking soldering conditions are as follows.

①Temperature of soldering iron tip:350℃；
② Soldering iron power output:≤30W；
③ Diameter of soldering iron end:≤1.0mm；
④Soldering time:＜3 s



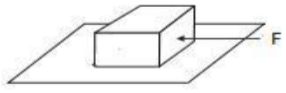
◆ Specification

Part Number	Inductance @100KHz,1V (uH)	DC Resistance(Ω)		Saturation Current(A)		Heat Rating Current(A)	
		Max.	Typ.	Max.	Typ.	Max.	Typ.
		DCR		Isat		Irms	
SLW5040S Series							
SLW5040SR47NST	0.47±30%	0.013	0.010	10.0	11.5	6.60	7.60
SLW5040S1R0MST	1.0±20%	0.018	0.014	7.35	8.00	4.90	5.00
SLW5040S1R5MST	1.5±20%	0.020	0.016	6.30	6.80	4.30	4.80
SLW5040S2R2MST	2.2±20%	0.027	0.021	4.90	5.50	3.80	4.20
SLW5040S3R3MST	3.3±20%	0.031	0.025	3.95	4.45	3.40	3.90
SLW5040S4R7MST	4.7±20%	0.041	0.035	3.50	3.90	3.00	3.30
SLW5040S5R6MST	5.6±20%	0.046	0.040	3.00	3.50	2.80	3.10
SLW5040S6R8MST	6.8±20%	0.056	0.045	2.90	3.50	2.50	2.80
SLW5040S8R2MST	8.2±20%	0.062	0.059	2.70	3.00	2.30	2.60
SLW5040S100MST	10±20%	0.083	0.069	2.35	2.90	2.10	2.40
SLW5040S150MST	15±20%	0.112	0.096	2.00	2.20	2.00	2.05
SLW5040S180MST	18±20%	0.155	0.136	1.70	2.10	1.45	2.10
SLW5040S220MST	22±20%	0.168	0.151	1.60	1.90	1.50	1.60
SLW5040S270MST	27±20%	0.234	0.180	1.52	1.75	1.40	1.50
SLW5040S330MST	33±20%	0.244	0.213	1.30	1.50	1.20	1.40
SLW5040S470MST	47±20%	0.354	0.313	1.10	1.30	1.00	1.10
SLW5040S560MST	56±20%	0.494	0.385	1.05	1.20	0.90	1.00
SLW5040S680MST	68±20%	0.520	0.430	0.90	1.10	0.80	0.90
SLW5040S820MST	82±20%	0.690	0.552	0.80	0.90	0.70	0.78
SLW5040S101MST	100±20%	0.728	0.505	0.75	0.85	0.70	0.80
SLW5040S151MST	150±20%	0.975	0.840	0.65	0.67	0.60	0.70
SLW5040S221MST	220±20%	1.820	1.460	0.48	0.55	0.40	0.50
SLW5040S331MST	330±20%	2.600	2.340	0.50	0.58	0.35	0.40
SLW5040S391MST	390±20%	3.250	2.590	0.35	0.45	0.32	0.32
SLW5040S471MST	470±20%	3.900	3.150	0.37	0.43	0.35	0.40
SLW5040S561MST	560±20%	4.914	3.670	0.31	0.36	0.31	0.35
SLW5040S681MST	680±20%	5.070	3.830	0.30	0.35	0.25	0.30
SLW5040S102MST	1000±20%	7.800	6.030	0.25	0.30	0.30	0.32
SLW5040S222MST	2200±20%	20.50	15.80	0.18	0.20	0.15	0.18

Notes

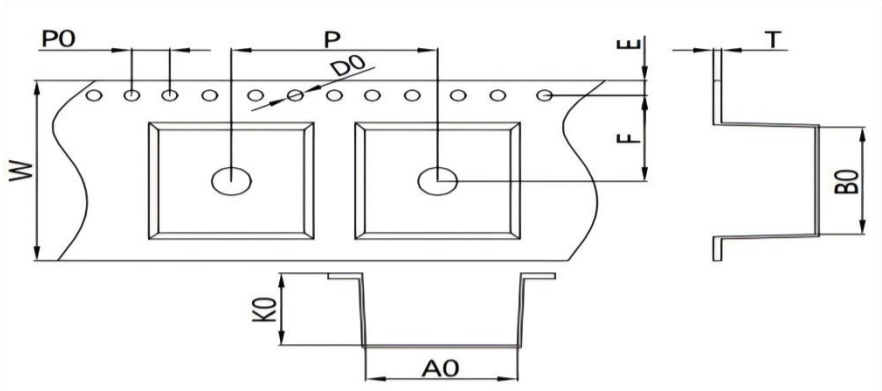
1. All test data is referenced to 25 °C ambient.
2. Isat: DC current at which the inductance drops approximate 30% from its value without current.
3. Irms :DC current that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C).

◆ Reliability Test

TEST ITEM	SPECIFICATION	TEST CONDITION
High temperature Storage test	1. No significant defects in appearance. 2.ΔL/L≦10% 3.ΔDCR/DCR≦10%	Temperature:125℃±5℃(N: Follow theproduct specification for the setting.) Time : 96±2 hours Place the samples for one hour at room temperature and test them within two hours
Low temperature Storage test	1. No significant defects in appearance. 2.ΔL/L≦10% 3.ΔDCR/DCR≦10%	Temperature: -40℃±5℃ (M: Follow the product specification for the setting) Time : 96±2 hours Place the samples for one hour at room temperature and test them within two hours.
Humidity test	1. No significant defects in appearance. 2.ΔL/L≦10% 3.ΔDCR/DCR≦10%	Temperature: 40±2℃ , Humidity: 93±3%RH Time : 96±2 hours Place the samples for one hour at room temperature and test them within two hours
Solderability test	Terminals must have 95% minimum solder coverage	1.Dip pads in flux then dip in solder pot at 245±5°C for 5 second. 2.Solder: lead free 3.Flux: rosin flux
Heat endurance of flow soldering	1. No significant defects in appearance. 2.ΔL/L≦10% 3.ΔDCR/DCR≦10%	1.Refer to the above reflow curve and go through the reflow for twice. 2.The peak temperature : 260+0/-5℃
Vibration test	1. No significant defects in appearance. 2.No short and no open.	Apply frequency 10~55~10Hz and amplitude 1.5mm, 1 min/cycle in X Y and Z direction for 2 hours each. (total 6 hours)
Terminal strength push test	1. Applied force:10N Duration: 10sec 2.Solder paste thickness:0.12mm 3.Meet the above requirements without any loosetermina	older the test samples to the PCB through245 ℃ reflow, apply a standard force on the side of the test samples for 10 seconds. 

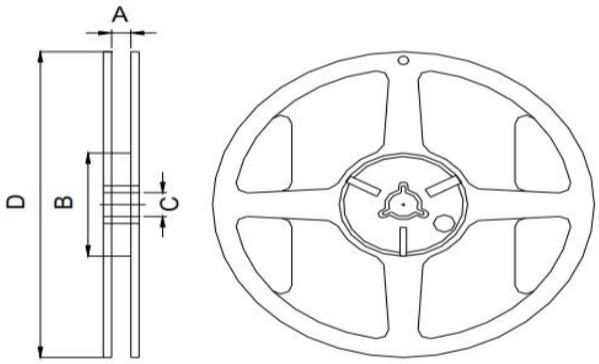
◆ Packaging and Marking:

1.Tape Packaging Dimensions



Type	W	P	A0	B0	K0	T	E	F	P0
SLW5040S	12.0 ±0.30	8.00 ±0.30	5.50 ±0.30	5.50 ±0.30	4.40 ±0.20	0.40 ±0.10	1.75 ±0.10	5.50 ±0.10	4.00 ±0.20

2.Reel Dimensions（Unit：mm）



A(mm)	12.5
B(mm)	100
C(mm)	13.0
D(mm)	330±2.0

3.Packaging Quantity

Type	Standard Quantity		
	Reel	Inner box	Carton box
SLW5040S	1500 pcs / reel	4Reel / box (6000 pcs)	3 Inner boxes, (18000 pcs)