



FANGCHENG ELECTRON  
FANGCHENG ELECTRONICS (DONGGUAN) CO., LTD.

## Fang cheng Electronics(Dong guan) Co,LTD

### SPECIFICATION FOR APPROVAL

CUSTOMER:

Part Number : SMD Current power Inductors

CUSTOMER Number:

CUSTOMER Part : 贴片大电流电感器

Fangcheng part : FC-ST1390-R47M-50A-L

DATE: 2023-10-12

REV: 01

RoHS  
COMPLIANT

Confidential

made in fangcheng:

CUSTOMER APPROD:

prepad	cheqd	Approd
刘婷婷	黄敏	刘凡

prepad	cheqd	Approd

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Notice of Use

For the parameters not prescribed in the *Specification for Approval*, please refer to the following standards or the relative industry standards.

1. Product in packing storage condition : temperature 540, RH70%.
  - 2.A storage of –FC- Electronic productsfor longer than 12 months is not recommended,Within other effects, the terminals may suffer degradation, resulting in bad solderability.Therefore, all products shall be used within the period of 12 months based on the day of shipment.
  3. Do not keep products in unsuitable storage conditions, such as areas susceptible to high temperatures, high humidity, dust or corrosion.
  - 4 Always handle products with care.
  - 5 Don't touch electrodes directly with bare hands as oil secretions may inhibit soldering.
- Always ensure optimum conditions for soldering.
- 6 When this product will be used on a similar or new project to the original one, sometimes it might be unable to satisfy the specifications due to different condition of usage.
  - 7 This inductor itself does not have any protective function in abnormal condition, such as overload, short-circuit, open-circuit conditions, etc. Therefore, it shall be confirmed that there is no risk of smoke, fire, dielectric withstand voltage, insulation resistance, etc., or use in abnormal conditions protective devicesor protection circuit in the end product.
  - 8 Hi-Pot test with higher voltage than spec value will damage insulating material and shorten its life.

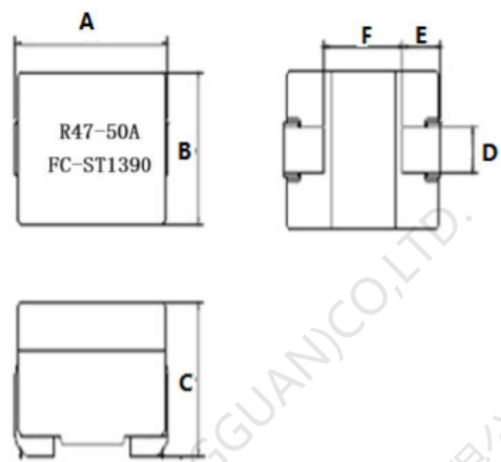
IPC 020D Joint Industry standard

IEC1007 《Transformer and inductors for use in electronic and telecommunication equipment—Measuring methods and test procedures》  
(ROHS or other environmental request)



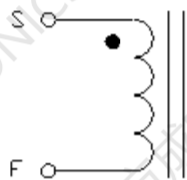
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1. Appearance and Dimensions(mm)



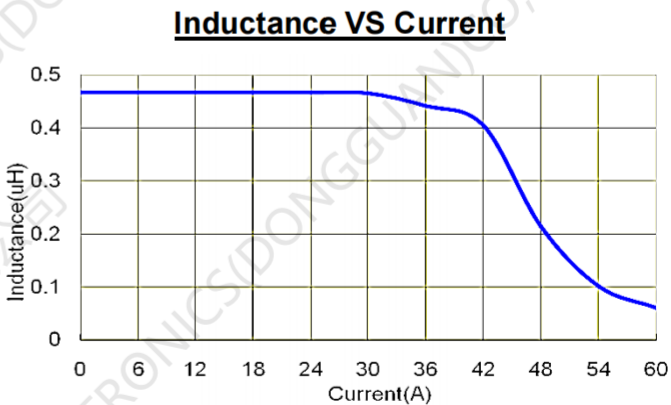
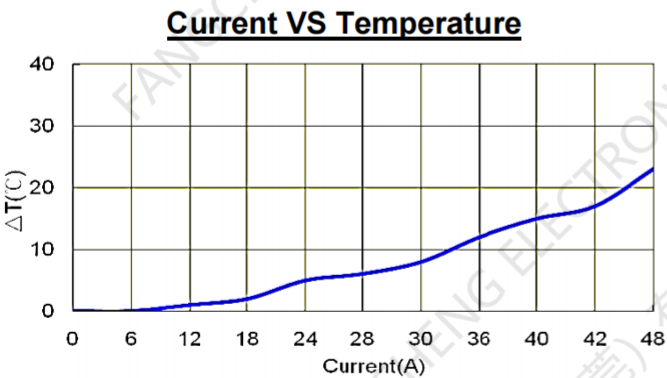
Item	mm	inch
A	13.5±0.5	0.551±0.02
B	13.0±0.5	0.511±0.02
C	9.2±0.5	0.362±0.02
D	4.5±0.2	0.177±0.012
E	1.8±0.3	0.070±0.011
F	10.0±0.5	0.393±0.011

2. Schematic :



3. Electrical Characteristics :

PART NUMBER	Inductance L0(uH)	I <sub>RMS</sub> (A)	I <sub>SAT</sub> (A)	R <sub>DC</sub> (mΩ)MAX
FC-ST1390-R47M-50A-L	0.47±20%	50	42.5A	0.20



- 1.L: 100KHZ/0.25V
- 2. Ambient temperature -40°C to +85°C
- 3.Storage temperature Component: -40°C to +125°

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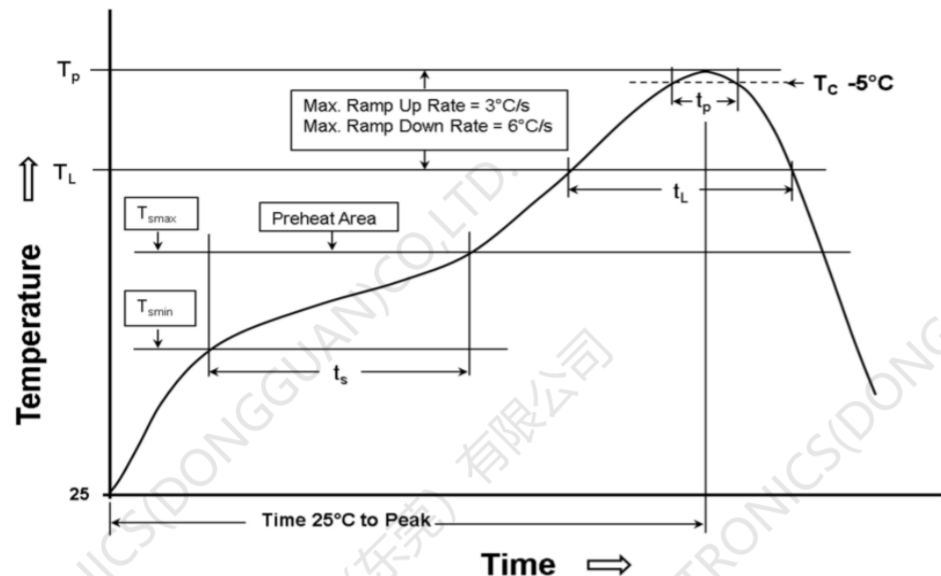
### 4. Reliability and test condition:

Test item	test condition	Remark
Cold Operating Test	GB2423.1 Ad	
Heat Operating Test	GB2423.2 Bd	
Cold Storage Test	GB2423.1 Ab	
Heat Storage Test	GB2423.2 Bb	
Steady Damp Heat Test	GB2423.3 Cb	
Circular Damp Heat Test	GB2423.4 Db	
Temperature Cycling Test	GB2423.22 Nb	
Temperature Shock Test	GB2423.22 Na	
Vibration Test	GB2423.10~15 Fc, Fdb	
Mechanical Shock Test(Bump)	GB2423.5 Eb	
Free Fall Test	GB2423.8 Ed	
Solderability	GJB360A-96	
High Temperature Step Stress Test	Enhancement Test Specifications	
Low Temperature Step Stress Test		
High-speed Thermal Cycling		
Limit Vibration		
Composite Stress		
Highly-Accelerated Temperature and Humidity Stress Test(HAST) (		

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## 5. Soldering Specification:

5. 1 R eflow P rofile f or SMT C omponents.



## 5. 2 Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat <ul style="list-style-type: none"> <li>- Temperature Min (<math>T_{smin}</math>)</li> <li>- Temperature Max (<math>T_{smax}</math>)</li> <li>- Time (<math>t_s</math>) from (<math>T_{smin}</math> to <math>T_{smax}</math>)</li> </ul>	150°C 200°C 60-120 seconds
Ramp-up rate ( $T_L$ to $T_p$ )	3°C/ second max.
Liquidous temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	217°C 60-150 seconds
Peak package body temperature ( $T_p$ )	See Table H3
Time within 5°C of actual peak temperature ( $t_p$ )	20-30 seconds
Ramp-down rate ( $T_p$ to $T_L$ )	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

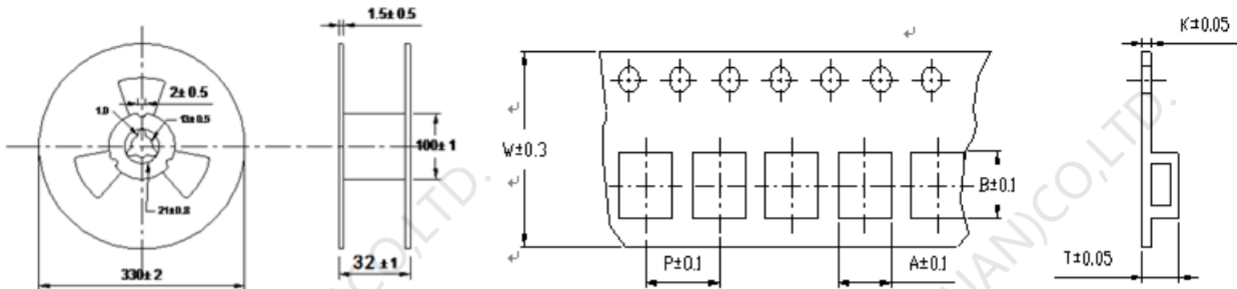
### Package Classification Reflow Temperature

	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

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6. Reel Dimensions (mm)



A	B	T	W	P	K
13.5	14	9.5	32.0	20.0	0.4

\*.300PCS Quantity/Tray(REF)  
\*.1200PCS Quantity/Box(REF)

II, AQL=0.4; L0A, L30DC, S-4, AQL=0.15。  
The inspection must be performed per GB/T2828.1-2003, with its examination level: Appearance and dimensions, II, AQL=0.4; L0A and L30DC, S-4, AQL: 0.15;



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