



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

Fang cheng Electronics(Dong guan) Co,LTD

SPECIFICATION FOR APPROVAL

CUSTOMER:

Part Number : SMD High Current power Inductor

CUSTOMER Number:

CUSTOMER Part :

Fangcheng part : FC-HCM1190-R25

DATE:

2024-1-05

REV:

01

RoHS
COMPLIANT

Confidential

made in fangcheng:

CUSTOMER APPROD:

<i>prepad</i>	<i>cheed</i>	<i>Approd</i>
刘婷婷	黄敏	刘凡

<i>prepad</i>	<i>cheed</i>	<i>Approd</i>

THE INFORMATION CONTAINED IN THIS DOCUMENT IS OF A PROPRIETARY NATURE AND IS INTENDED TO BE KEPT CONFIDENTIAL BETWEEN THE SENDER AND THE INTENDED RECIPIENT. IT MAY NOT BE REPRODUCED OR USED WITHOUT EXPRESS WRITTEN PERMISSION OF FC TECHNOLOGIES, OR FC



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

Fangcheng Electronics (Dongguan) Co., Ltd.

Tel: +86 0769-82988010

Fax: +86 0769-82988065

E-mail: yhl@fangchengcoils.com

URL: www.fangchengcoils.com

Address: Building 3, Jinmei Technology Park, No.16 Huanchang West Road, Changping Town,
Dongguan City

Fangcheng Electronics (China-Taiwan) Office

Address: No. 31, MRT Road, Zhonghe District, New Taipei City

Tel: +8869-983491379



made : 方成电子 (东莞) 有限公司

Page: 2 ----- 8

Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------

Customer:

made : 方成电子(东莞)有限公司

Part Number: FC-HCM1190-R25

Page: 3 ----- 8

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 products for 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 devices or 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)

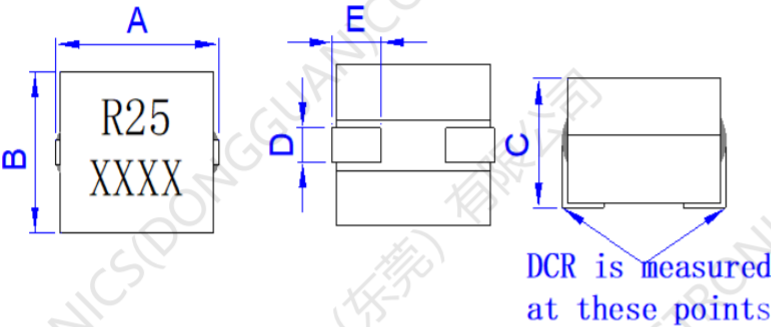


Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------

1. Appearance and Dimensions(mm)

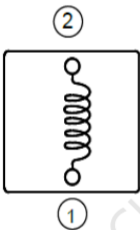
Lowest core losses

- High saturation current .
- Extremely low DCR
- Magnetically shielded
- Operating temperature: -40 °C to +125 °C
- Recommended solder profile: Reflow

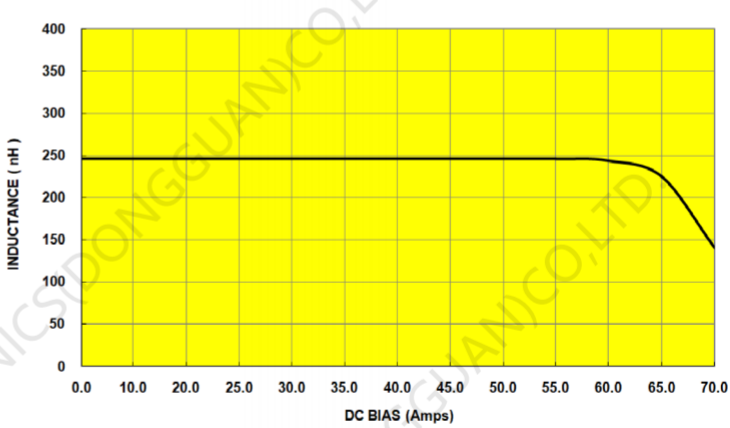


A	11.3±0.5
B	11.0±0.5
C	8.9±0.5
D	2.2± 0.2
E	3.2± 0.5

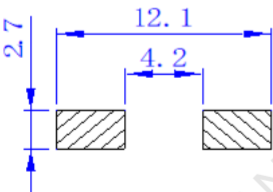
2. Schematic：



Typical Inductance vs. Current Characteristics:



3. Reference LandPattern (mm)



Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------

4. Electrical Characteristics :

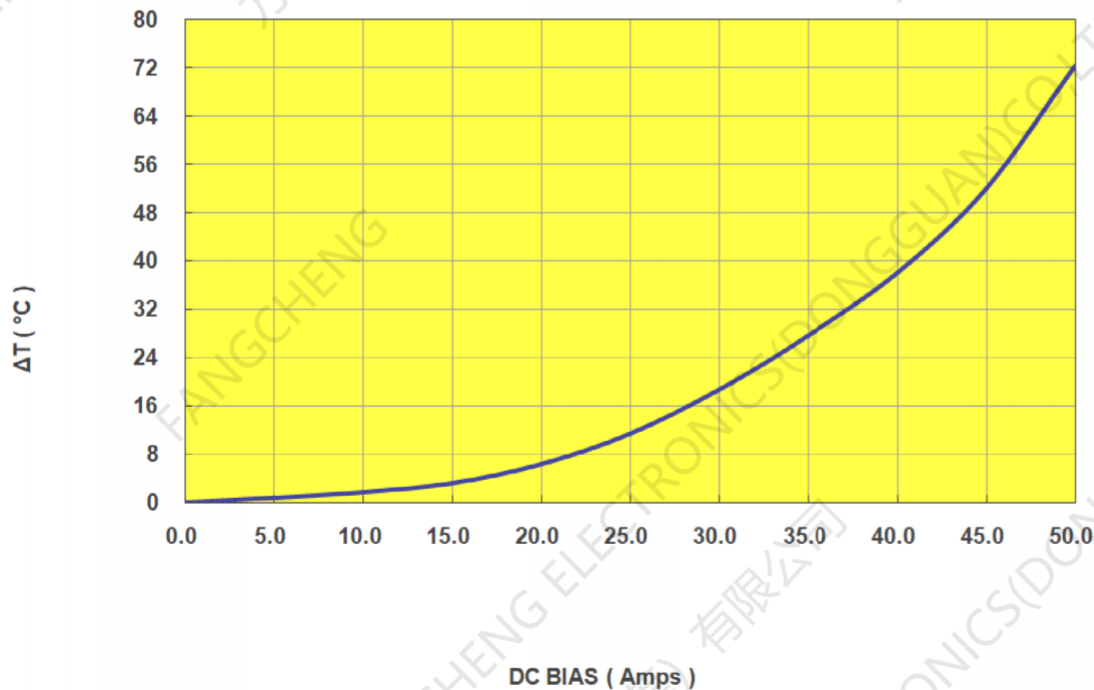
Part Number	Inductance (nH)	DCR	Current (A)	
	$L \pm 20\%$		Irms	Isat
FC-HCM1190-R25	250	0.3	40	65

Note: When ordering, please specify tolerance code. Tolerance: L=±15%

- Customized Specifications are available
- Operating temperature range - 40°C ~ 125°C(Including self - temperature rise)
- OCL (Open Circuit Inductance) Test parameters: 100kHz, 0.25Vrms, 0Adc & Isat @20°C
- DC current for an approximate ΔT of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, airflow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 155°C under worst case operating conditions verified in the end application.
- Measure Equipment :
 L : WK3260B+WK3265B
 RDC : Chroma 16502
 Isat : WK3260B+WK3265B



5. Temperature rise ΔT (° C) VS DC Bias (Amps)



Prepad	Checd	Approd
刘婷婷	黄敏	刘凡

6. Reliability and test condition:

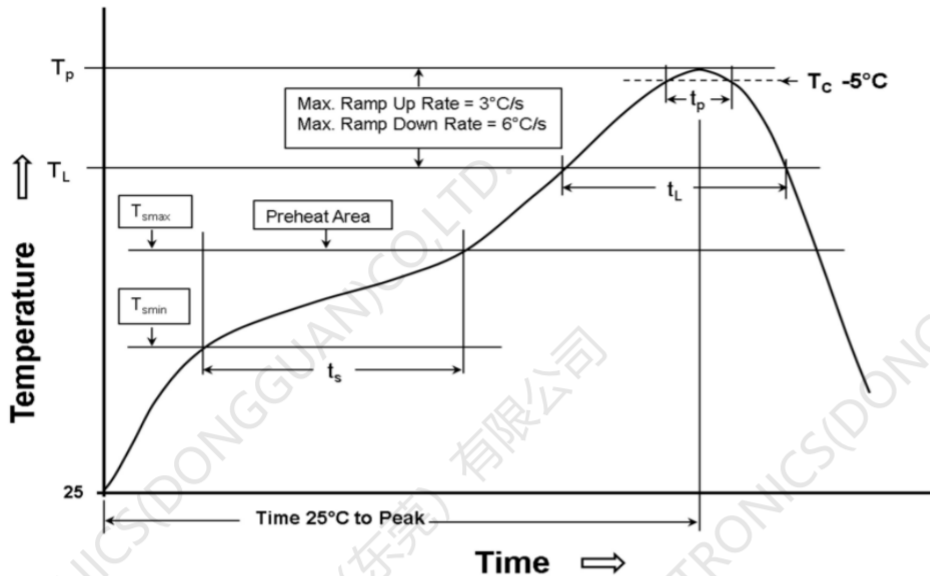
Test item	test condition	Remark
Cold Operating Test	GB2423.1 Ad	
Heat Operating Test	GB2423.2 Bd	
Cold Storage Test	GB2423.1 Ab	
Heat Storage Test	GB2423.2 Bb	
Steady Damp Heat Test	GB2423.3 Cb	
Circular Damp Heat Test	GB2423.4 Db	
Temperature Cycling Test	GB2423.22 Nb	
Temperature Shock Test	GB2423.22 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) (



Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------

7. Soldering Specification:

7.1 Reflow Profile for SMT Components.



7.2 Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	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.

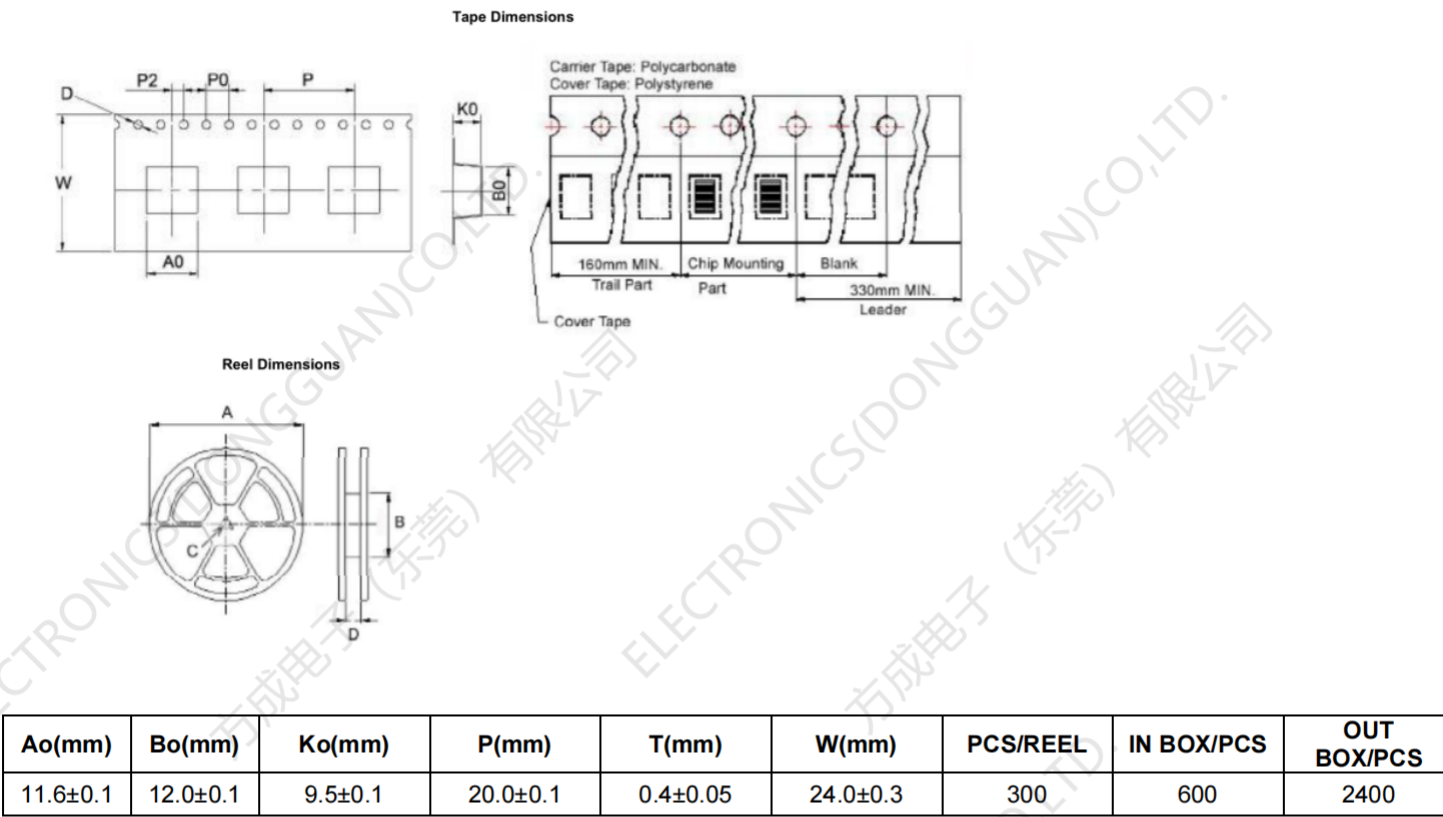
Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >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

Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------

8. Reel Dimensions (mm)



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;



Prepad 刘婷婷	Checd 黄敏	Approd 刘凡
---------------	-------------	--------------