



**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-HCM1075-R15-56A-L

DATE: 2022-10-24

REV: 01

RoHS  
COMPLIANT

Confidential

made in fangcheng:

CUSTOMER APPROD:

<i>prepad</i>	<i>cheed</i>	<i>Approd</i>
罗佳	黄敏	刘凡

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

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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 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.

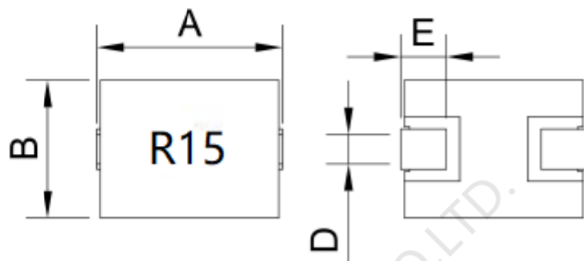
IPC 020D Joint Industry standard

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



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### 1. Appearance and Dimensions(mm)



Lowest core losses

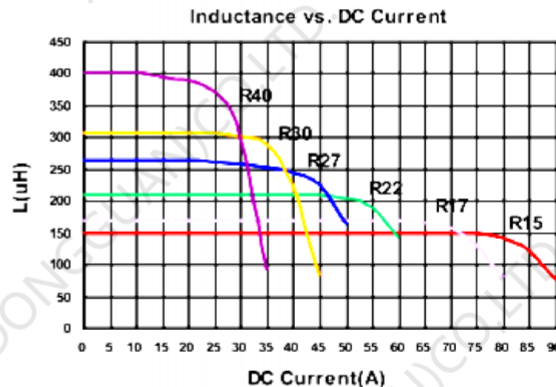
- High saturation current .
- Extremely low DCR
- Magnetically shielded
- Operating temperature: -40 °C to +125 °C
- Recommended solder profile: Reflow

A	10.2±0.2
B	8.0 Max
C	7.3±0.3
D	2.2±0.2
E	2.54± 0.5

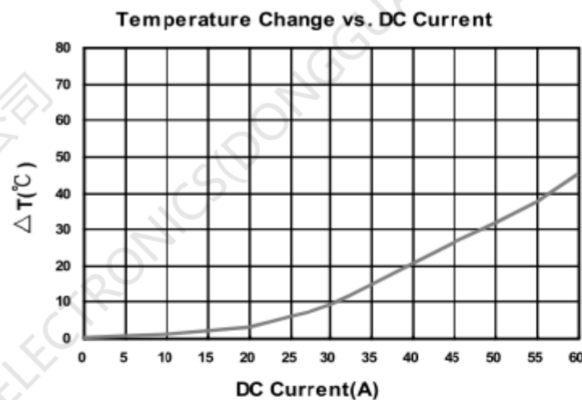
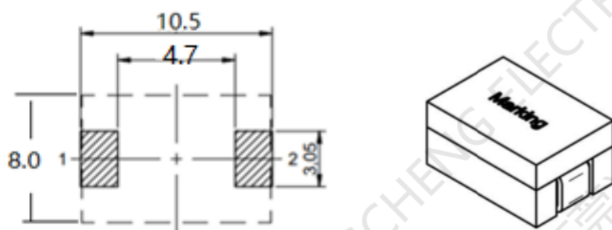
### 2. Schematic :



Typical Inductance vs. Current Characteristics:



### 3. Reference LandPattern (mm)



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#### 4. Electrical Characteristics :

Part Number	Inductance (nH)	DCR	Current (A)	
	L ± 20%		mΩ ± 7%	Irms
FC-HCM1075-R15-56A-L	155	0.29	56	76
FC-HCM1075-R22-56A-L	220	0.29	56	50
FC-HCM1075-R33-56A-L	330	0.29	56	35
FC-HCM1075-R40-56A-L	400	0.29	56	25

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 Δ T 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



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### 6. Reliability and test condition:

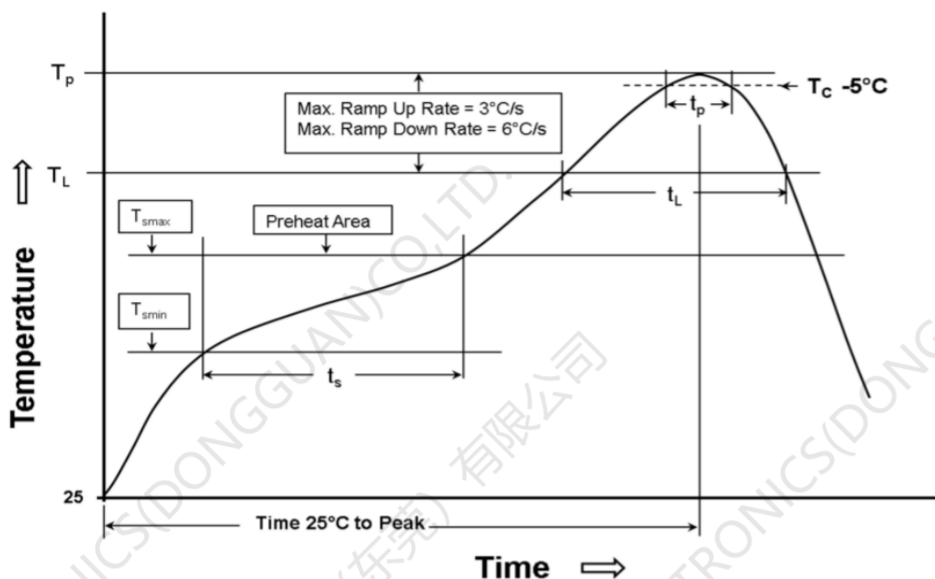
Test item	test condition	Remark
Cold Operating Test	GB2423. 1 Ad	
Heat Operating Test	GB2423. 2 Bd	
Cold Storage Test	GB2423. 1 Ab	
Heat Storage Test	GB2423. 2 Bb	
Steady Damp Heat Test	GB2423. 3 Cb	
Circular Damp Heat Test	GB2423. 4 Db	
Temperature Cycling Test	GB2423. 22 Nb	
Temperature Shock Test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



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

refer to IPC/JEDEC J-STD-020D

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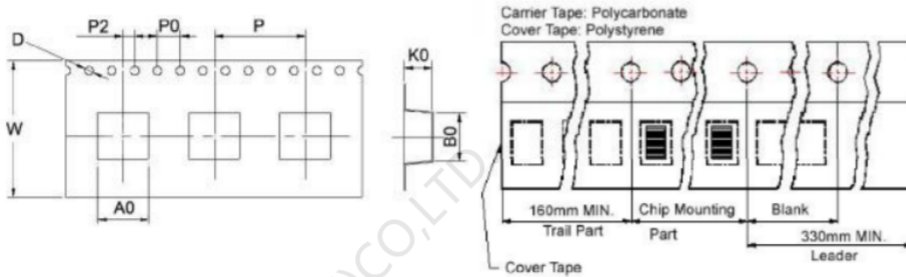
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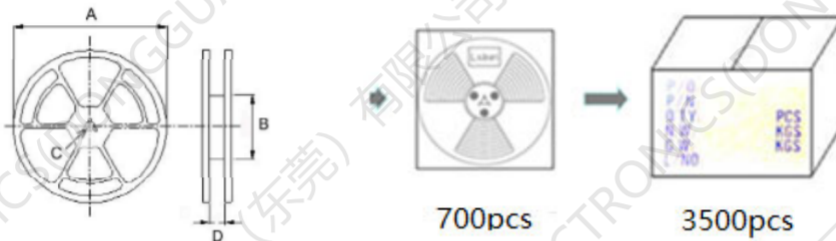
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### 8. Reel Dimensions (mm)

Tape Dimensions



Reel Dimensions



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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