



方成电子（东莞）有限公司
SPECIFICATION FOR APPROVAL

CUSTOMER:

Part Number: Wire Wound Molded SMD Power Inductors

CUSTOMER Number:

CUSTOMER Part :

Fangcheng part : FC-SCNL3012-R12M-L-R

DATE: 2022-6-23

REV: 01



Confidential

made in fangcheng:

CUSTOMER 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 - F C -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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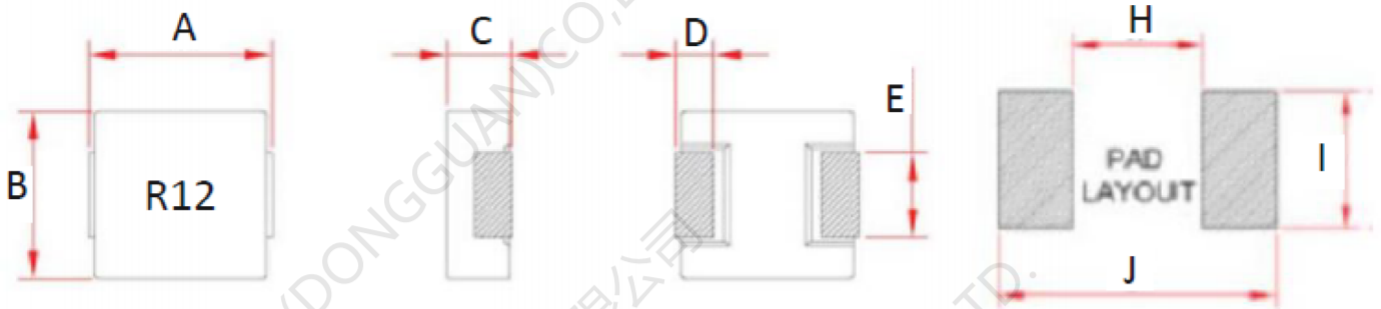
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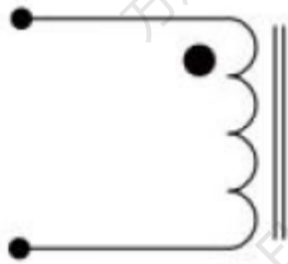
1. Appearance and Dimensions(mm)



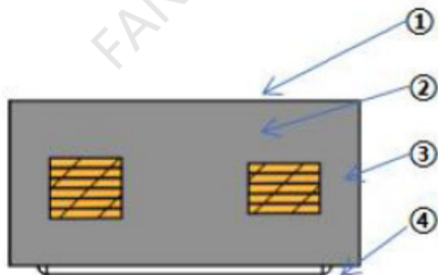
Dimensions in mm

TYPE	A	B	C	D	E	H	I	J
FC-SCNL3012	3.4±0.2	3.0±0.2	1.0±0.2	0.7±0.3	1.3±0.3	1.2typ	2.0typ	4.2typ

2. Schematic :



Structure and material



No.	Components	Material
①	coating	black varnish
②	Core	Composite
③	Wire	Flat Enameled copper wire
④	Electrodes	Sn/Ag/Cu Alloy

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3. Electrical Characteristics :

Part Number	LuH	Test Frequency(KHz)	DC Resistance (mΩ) max.	Isat(A)max.	Irms(A)max.
FC-SCNL3012-R12M-L-R	0.12±20%	100kHz/0.1V	4.3typ/5.5max	17 typ/14max	11 typ/9.0max

Test Equipment and Frequency:

- Inductance : LCR meter 4284A/4286A (HP) / 100kHz / 0.1V

- DC Resistance : HP4338B Milliohms Meter

- DC Bias : Waynekerr 3265B (Bias Current Source) / 100kHz / 0.1V

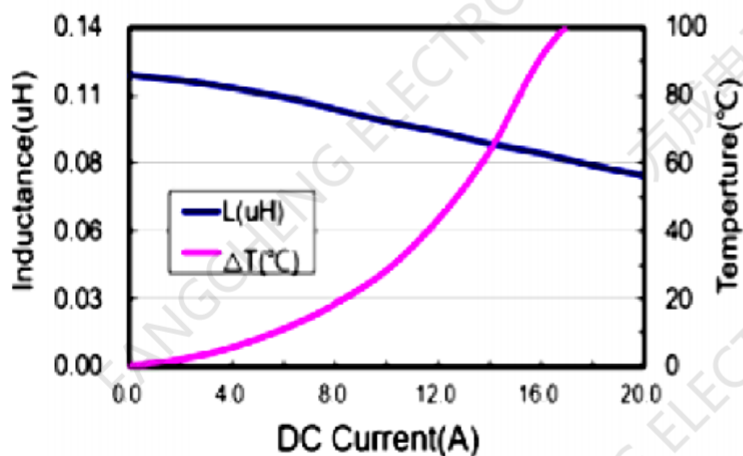
1: DCR test data is referenced to 20°C ambient;

2: Isat: Peak current for approximately 30% rolloff at +20 °C;

3: I rms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 125 °C under worst case operating conditions verified in the end application.

Max. Value, ΔT<40℃; for Typ. Value, ΔT is approximate 40℃.

3.1 Performance Graphs



Storage and Test condition

3.2 Storage

1) Operating and storage temperature range (individual chip without packing): -40°C~ +125°C (Including Self-heating)

2) Storage temperature range (packaging conditions): -5°C~+40°C and RH 70%.

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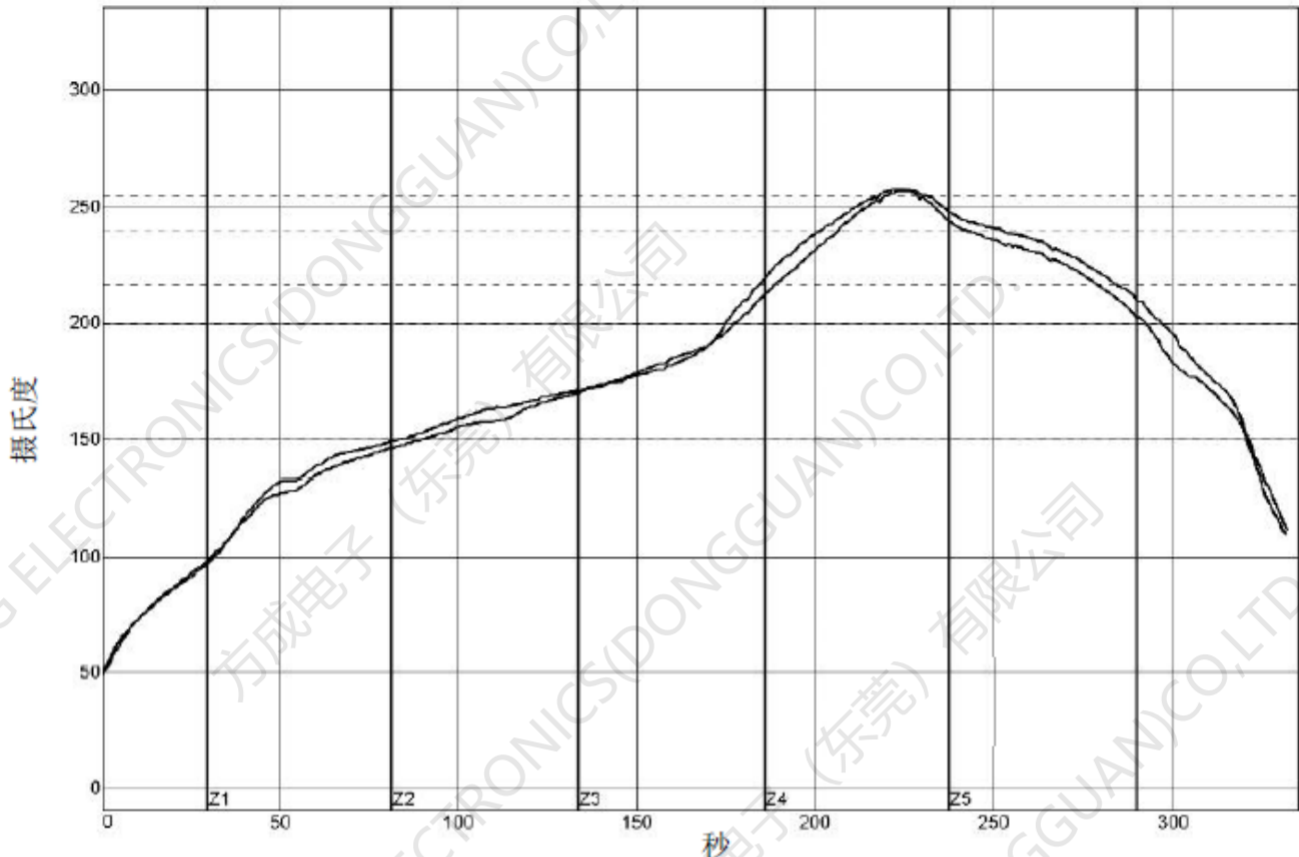
6. Reliability and test condition:

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: 元器件的推荐焊接方式是回流焊



PWI= 85%	预热150至200C		回流时间 /217C		最高温度		总时间 /240C		总时间 /255C-2	
<TC2>	95.69	-57%	93.82	-25%	258.05	-39%	41.51	-85%	10.84	-22%
<TC3>	94.67	-42%	95.11	-22%	257.45	-51%	46.32	-37%	11.00	-20%
温差	8.98		1.29		0.60		4.81		0.16	

制程界限:

统计数名称	最低界限	最高界限	单位
预热时间150-200摄氏度	60	180	秒
回流以上时间 - 217摄氏度	60	150	秒
最高温度	255	265	度 摄氏度
在240摄氏度以上时间	40	60	秒
在255摄氏度以上时间 (2)	5	20	秒

7.1 高温耐热性: 在260°C的熔融钎料中, 停留时间不少于10 秒, 无质量问题。

7.2 返修温度和时间温度: 350 度; 时间: 不少于5 秒。

7.3 焊接次数: 元器件能承受的焊接次数不少于5 次

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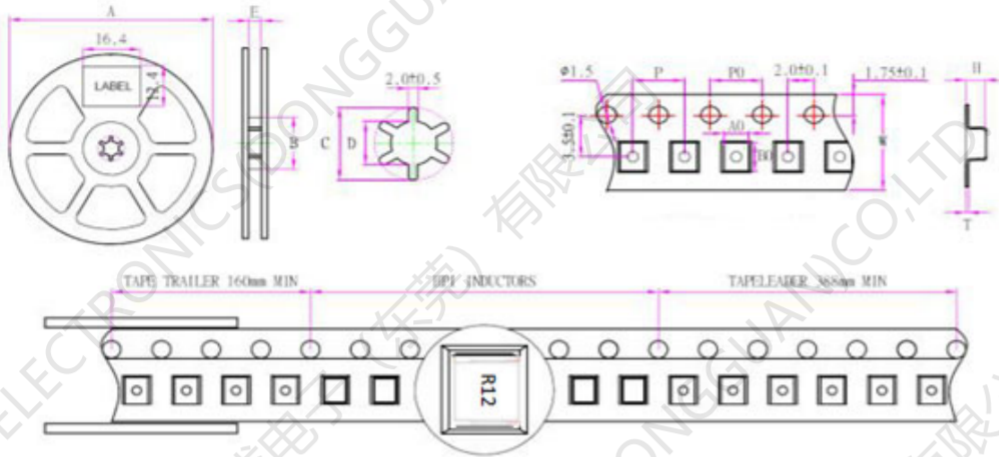
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8.1 包装:

- 1) 包装箱上应标明产品型号、名称、数量、出厂日期、承制方名称及出厂检验章;
 - 2) 货物运达客户方后, 包装箱封条应完好, 箱体无破损、开裂等现象;
 - 3) 电感用木箱或其他材料包装, 方便拆卸, 四周用软性材料填充;
- 数量 4000PCS/R; 16000PCS 小箱, 32000 PCS 箱.



Packaging Quantity

P/N	Chip/Reel	Inner Box	Outer Box
FC-SCNL3012-Series	4000	16000	32000

8.2 外观:

- 1) 产品应有合格证和耐擦防水洗标签, 应注明型号、规格;
- 2) 产品外观整洁, 应无破损、划伤;

8.3 检验:

- 1) 产品生产中必须全数进行电气性能, 抗电强度检测; 箱内应有 100%电气性能合格保证书或检测报告;
- 2) 产品出货前按批次, 必须根据承认书按国家行业标准进行抽样检验, 合格后出具出厂检验报告, 记录抽样测试数据, 在每批次包装尾箱中放置一份; 检验报告须注明 100%耐压测试合格。注: 批次按定单号发货为准



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