

MOLDING POWER CHOKE-SPH SERIES

模压电感-SPH系列

■ Features

产品特征

- Shielded construction
屏蔽结构
- Handles high transient current spikes without saturation
处理高瞬态电流尖峰无饱和
- Ultra-low buzz noise,due to compact construction
结构紧凑, 啸叫低
- 100%Pb-free meets RoHS standard
100%无铅(Pb), 符合RoHS标准
- Operating temperature range: -55°C~155°C (Including self-temperature rise)
工作温度范围: -55°C~155°C(含自升温)。

■ Applications

产品应用

- PADS, notebooks, desktops, servers
平板电脑、笔记本电脑、台式电脑、服务器
- Low-profile, high-current power supplies
低外形、大电流电源
- Battery-powered devices
电池供电设备
- DC/DC converters for FPGA
现场可编程门阵列 (FPGA) 的 DC/DC 转换器

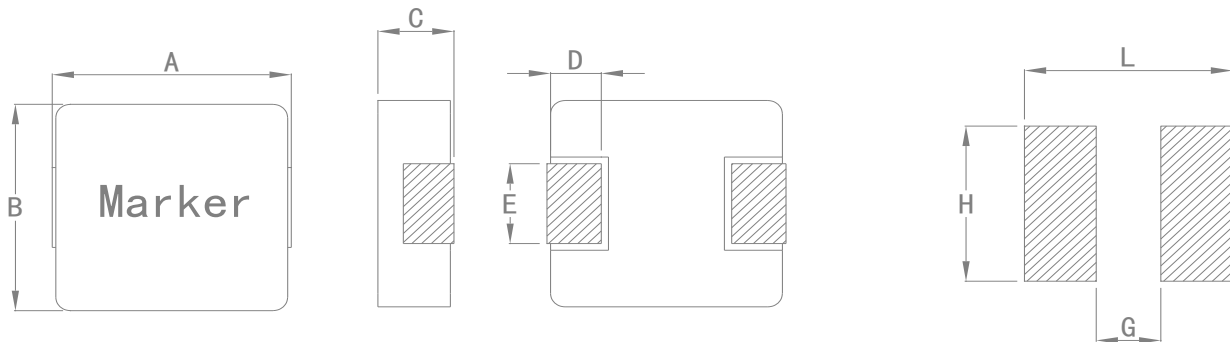
■ Product Identification

产品标识

SPH Series name	6030 Size	S S:Standard product	R10 Inductance	N Tolerance ±30%	T Packing
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■ Shape and Dimensions (Unit:mm)

形状和尺寸(单位:毫米)



Series	A	B	C	D	E	L	G	H
SPH6030S	7.10±0.30	6.60±0.20	2.80±0.20	1.60±0.30	3.00±0.20	8.0Ref	3.7Ref	3.4Ref

Electrical Characteristics

电气特性

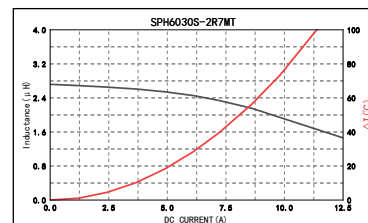
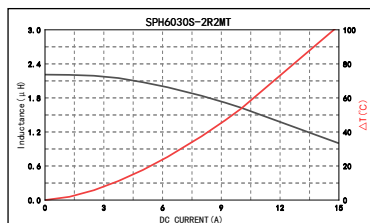
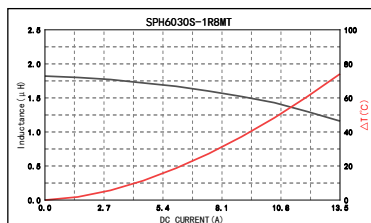
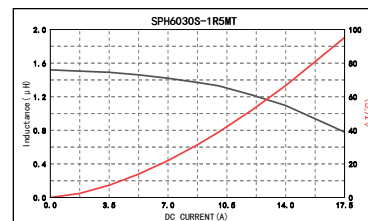
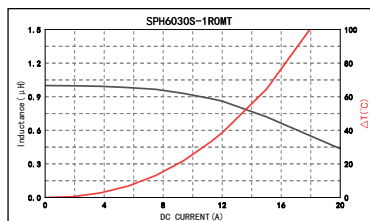
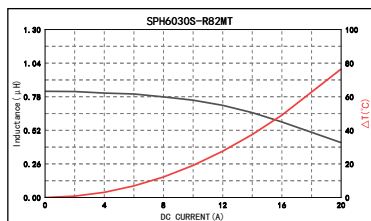
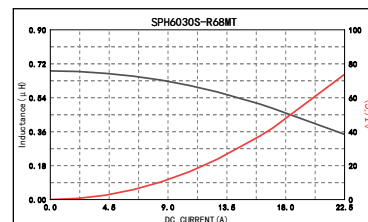
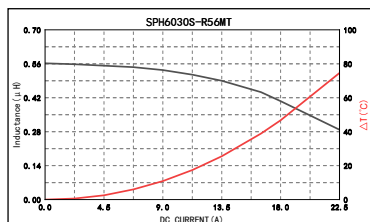
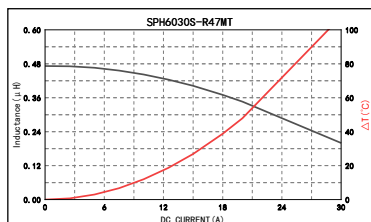
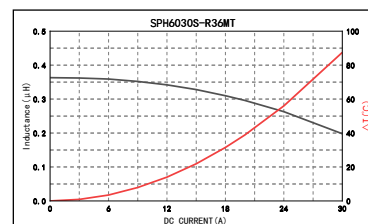
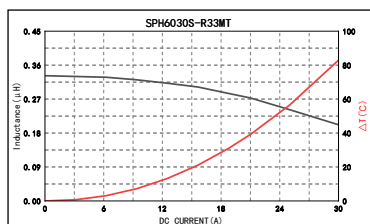
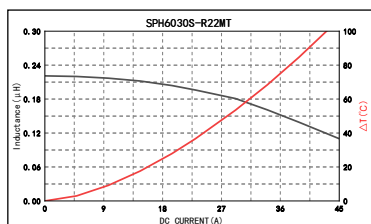
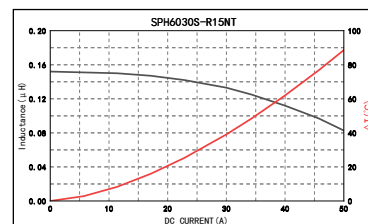
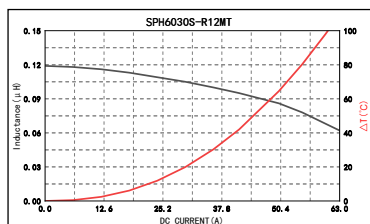
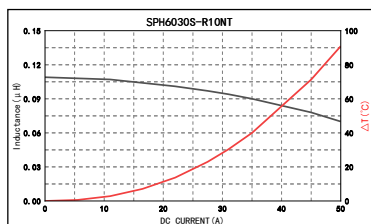
Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Irms(A)		Isat(A)		DCR(m Ω)	
			Typ	Max	Typ	Max	Typ	Max
SPH6030S-R10NT	0.10	30	35	30	45	40	1.1	1.3
SPH6030S-R12MT	0.12	20	41.5	36	50	46	0.62	0.69
SPH6030S-R15NT	0.15	30	30	25	40	36	1.7	2.1
SPH6030S-R22MT	0.22	20	23	21	34	32	2.0	2.5
SPH6030S-R33MT	0.33	20	21	20	25	22	2.8	3.4
SPH6030S-R36MT	0.36	20	20	18	24	21	3.3	3.9
SPH6030S-R47MT	0.47	20	18	16	20	18	3.4	4
SPH6030S-R56MT	0.56	20	16.5	15	18	16	3.9	4.5
SPH6030S-R68MT	0.68	20	16	14.5	17	15	4.7	5.3
SPH6030S-R82MT	0.82	20	14	13	16	14	5.4	6
SPH6030S-1R0MT	1.0	20	12	11	15	13.5	6.7	7.4
SPH6030S-1R5MT	1.5	20	10	9.0	14	12	10.2	12.1
SPH6030S-1R8MT	1.8	20	9	8.0	12	10	10.9	13
SPH6030S-2R2MT	2.2	20	8.0	7.5	10	9.0	13.5	15
SPH6030S-2R7MT	2.7	20	7.2	7	9.8	8.8	17.3	20
SPH6030S-3R3MT	3.3	20	6.5	6.0	9.5	8.5	19	22
SPH6030S-4R7MT	4.7	20	5.5	5.0	6.5	5.5	28	33
SPH6030S-5R6MT	5.6	20	5.5	5.0	6.0	5.2	39	42
SPH6030S-6R8MT	6.8	20	4.5	4.2	6.0	5.0	43	50
SPH6030S-8R2MT	8.2	20	4.5	4.0	6.0	4.7	54	60
SPH6030S-100MT	10	20	4.0	3.5	5.5	4.5	62	68
SPH6030S-120MT	12	20	3.5	3.0	4.6	4.1	65	78
SPH6030S-150MT	15	20	3	2.5	4.5	4.0	110	140
SPH6030S-180MT	18	20	2.7	2.3	3.5	3.1	130	160
SPH6030S-220MT	22	20	2.5	2.0	3.0	2.5	150	190
SPH6030S-330MT	33	20	2.1	1.8	2.5	2.0	215	258
SPH6030S-470MT	47	20	1.9	1.6	1.8	1.6	250	300

Notes

- Inductance measurement condition at 100kHz, 1.0V.
电感测试条件为100KHz,1.0V。
- Irms: DC current that will cause the temperature rise ($\Delta T = 40^{\circ}\text{C}$) from 25°C ambient.
温升电流: 使产品温度上升 40°C 时所加载的直流电流值(环境温度 25°C)。
- Isat: DC current at which the inductance drops approximately 30% from its value without current.
饱和电流: 使电感值比初始感值下降30%时所加载的直流电流值。

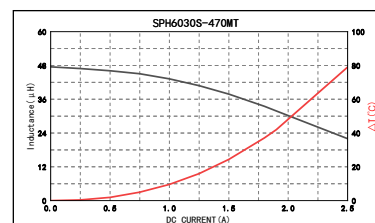
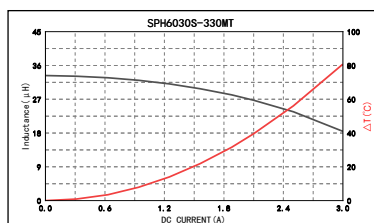
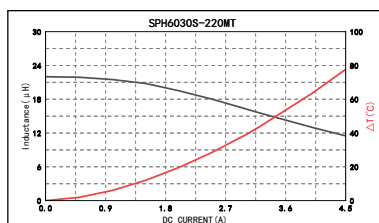
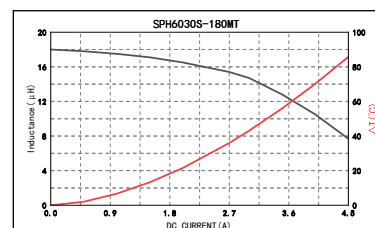
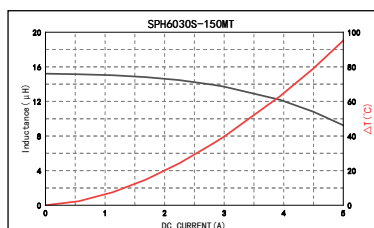
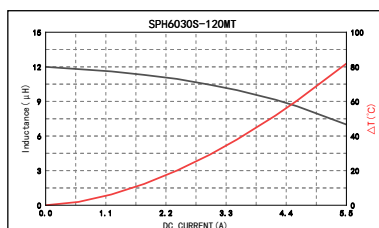
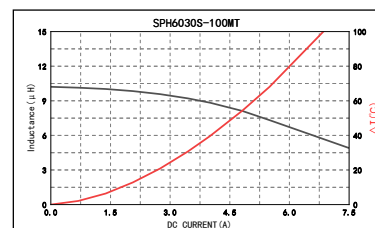
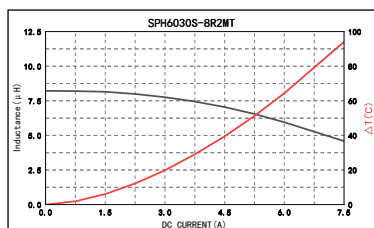
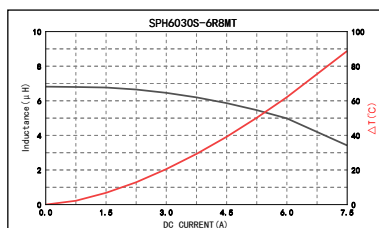
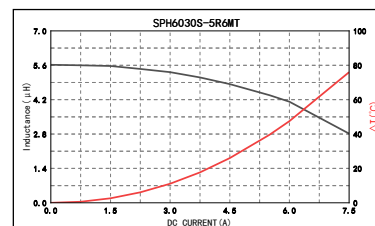
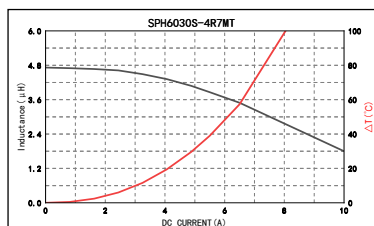
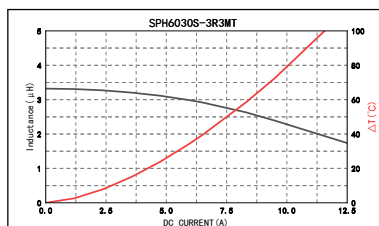
Characteristics Charts

特征图表



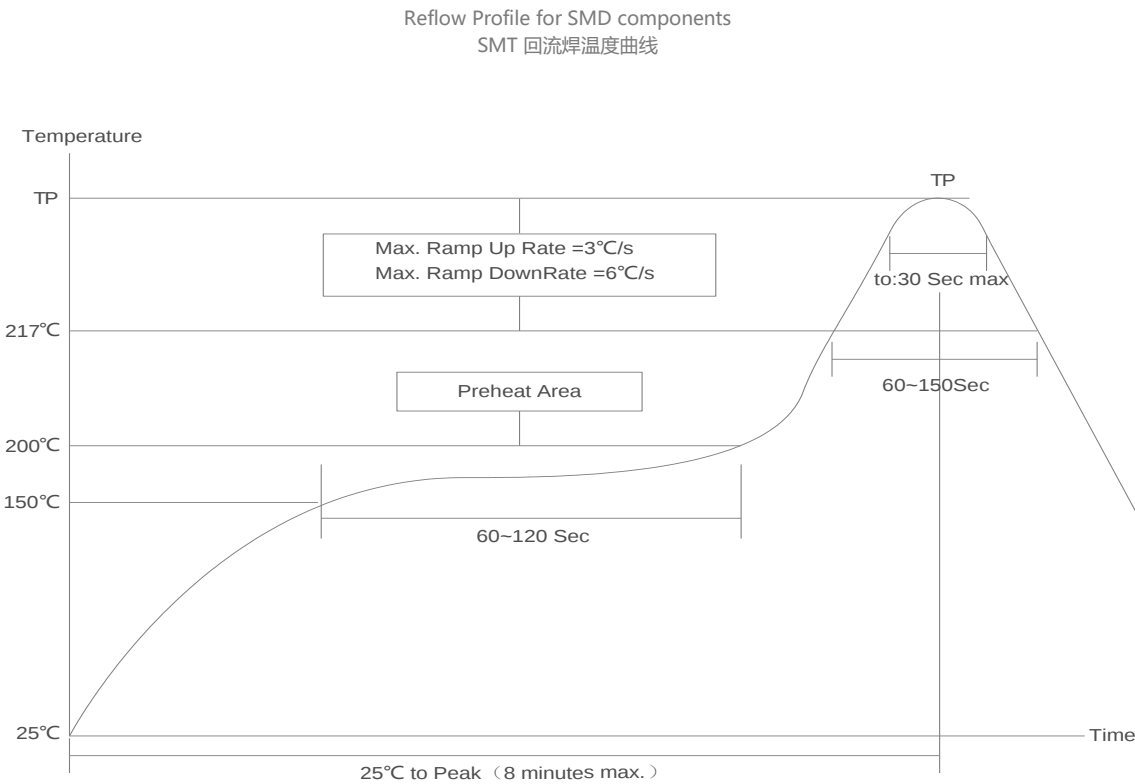
Characteristics Charts

特征图表



■ Soldering Specification

焊接规格



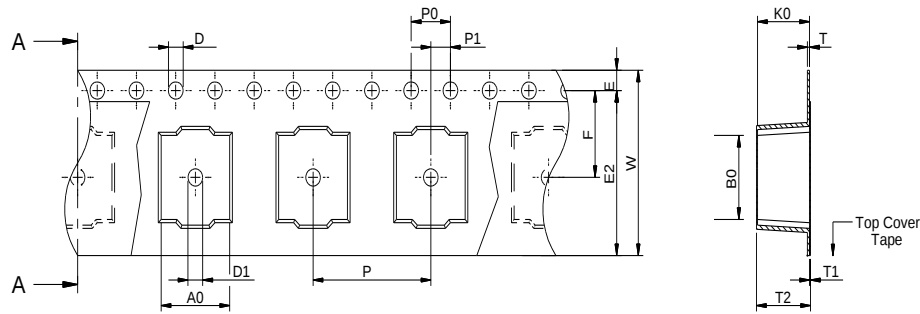
Pb-Free Process-Classification (TP)
无铅工艺-分类温度(TP)

	Package Thickness 封装厚度	Package Volume 封装体积		
		<350 mm ³	350~2000 mm ³	>2000 mm ³
PB-Free Assembly 无铅装配	<1.6mm	260°C	260°C	260°C
	1.6~2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020E.
回流焊参照标准 IPC/JEDEC J-STD-020E

Carrier Tape Dimensions (Unit: mm)

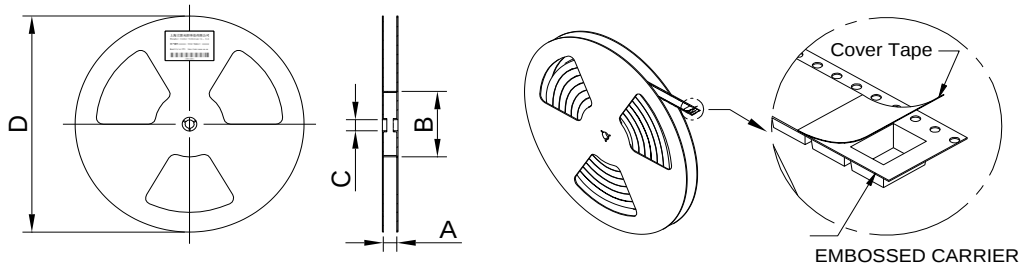
载带尺寸 (单位: mm)



Dimensions Code(mm)													
Series	B0	A0	K0	P	W	D	E	F	P1	P0	T	T1	T2
SPH6030S	7.7±0.1	7.1±0.1	3.3±0.1	12.0±0.1	16.0±0.3	1.5±0.1	1.75±0.1	7.5±0.1	2.0±0.1	4.0±0.1	0.35±0.05	8.0±0.9	15.7±1.0

Reel Dimensions (Unit: mm)

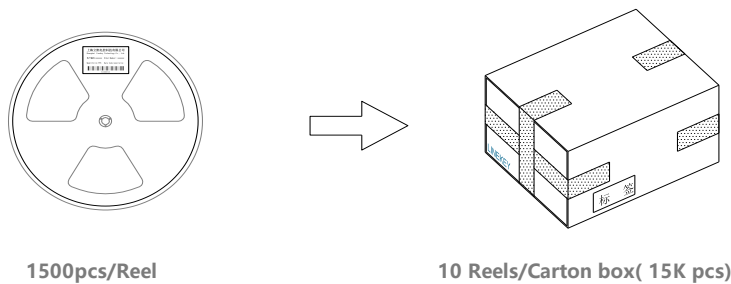
料盘尺寸 (单位: mm)



Series	Type	A	B	C	D
SPH6030S	13" x16mm	16.4+2/-0	100±2	13+0.5/-0.2	330

Packaging Specification

包装信息



■ Notice of Use

使用注意事项

1. Please note the recommendations in our product datasheet (latest edition).

请留意我们的产品手册(最新版本)中的推荐使用条件。

- Particular attention should be paid to the derating curves given there.

如果有降额曲线，请格外留意：

- The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.

请注意焊接曲线。如果是波峰焊工艺，焊接温度指的是引脚温度，而不是底座。

2. If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints, in particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.

如果要用有机溶剂清洗元件，必须检查清洗剂的成份，因为清洗剂对线材绝缘层和塑料部件或者点胶部位有负面影响。尤其要避免清洗剂中的成份对线材绝缘造成长期负面影响。

3. The following points must be observed if the components are potted in customer applications.

如果产品被封装在客户特别的应用中，下面几点必须引起关注：

- Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.

很多封装材料在固化时会收缩，这样会在元件的塑料外壳或者磁芯上施加额外的应力。这种应力对电气性能有破坏性，在极端情况下会损坏磁芯或外壳。

- It is necessary to check whether the potting material used attacks or destroys the wire insulation, plastics or glue.

需要检查所使用的封装材料是否会破坏线材绝缘层，塑料外壳或者点胶。

- The effect of the potting material can change the high-frequency behaviour of the components.

封装材料的应力可能会影响器件的高频特性。

4. Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.

铁氧体材料不堪直接冲击，可能会造成磁芯材料脱落或者磁芯破损。

5. Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

即便是为客户定制的产品，也需要客户在电路中对元件做全方位测试验证。

6. Specifications are subject to change without notice.

产品规格更改不会提前告知。

7. Customers should verify actual device performance in their specific applications.

客户需要在特殊应用中验证元件的性能。