



SPECIFICATION FOR APPROVAL

产品规格承认书

SMD POWER INDUCTOR

功率电感

CUSTOMER.

MODEL NO.

MPA5040S1R0M

CUSTOMER'S PART NO.

LILE NO.

DATE.

2019.7.1

REVISION.

A/0

CUSTOMER APPROVE		
DATE:		
DRAWING		
DRAWN BY	CHECK BY	APPROVAL BY
DATE:		



深圳市迈翔科技有限公司

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COILMX

深圳市迈翔科技有限公司

CUSTOMER		MODEL NO.	MPA5040S1R0M	REVISION	A/0
FILE NO.		PART NO.		DATE	2019.7.1
REVISIONS					
REW	PROJECT CHANGE	DESCRIPTION		Date	

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1.PRODUCT DIMENSION			UNIT:mm	
	A	5.00±0.20		
	B	5.00±0.20		
	C	4.10MAX		
	D	2.0±0.3		
	E	1.50±0.3		

2.ELECTRICAL REQUIREMENTS			
PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L(uH)	1.0±30%	100KHz/1.0V	MICROTEST 6377
DCR(mΩ)	15.6MAX	At 25℃	TH2512A
I sat(A)	7.35A TYP L0A* 70%	100KHz/1.0V	MICROTEST 6377+6220
Irms(A)	4.9A TYP ΔT≅40℃	100KHz/1.0V	MICROTEST 6377+6220

<p>3.CHARACTERISTICS</p> <p>(1). All test data is based on 25℃ ambient.</p> <p>(2). DC current(A)that will cause an approximate ΔT40℃</p> <p>(3). DC current(A)that will cause L0 to drop approximately 10%Typ</p> <p>(4). Operating temperature range: -55℃~+125℃</p> <p>(5).The part temperature (ambient + temp rise)should not exceed 125℃ under worst case operating conditions. circuit design, component.PWB trace size and thickness,airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the den application</p>

<p>4.SPECIAL REQUEST</p> <p>(1)Lettering 331 on top of the body.</p>

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5.PRODUCT IDENTIFICATION

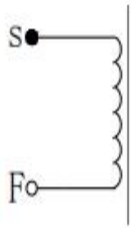
XX XXXX S XXX X

① ② ③ ④ ⑤

①、 Product Symbol ②、 Dimensions ③、 material class number

④、 Inductance ⑤ 、 Tolerance: M±20%, N±30%.

6.ELECTRICAL SCHEMATICS



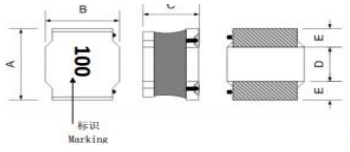
7.APPLICATION

- (1)Low profile,high current power supplies.
- (2)Battery powered devices.
- (3)DC/DC converters in distributed power systems.
- (5)DC/DC converters for field programmable gate array.

8.FEATURES

- (1)ROHS compliant.
- (2)Super low resistance,ultra high current rating.
- (3)high performance(l sat)realized by metal dust core.
- (4)Frequency Range:up to 1MHZ.

9.RECOMMENDED PCB LAYOUT

CUSTOMER		MODEL NO.				MPA5040S1R0M		REVISION		A/0	
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SORT	ITEM	A	B	C	D						
PRODUCT & DIMENSION	SPEC	5.00±0.20	5.00±0.20	4.10MAX	2.0±0.3						
	1	5.02	5.00	3.89	1.99						
	2	4.99	4.94	3.88	2.01						
	3	5.04	4.98	3.81	2.02						
	4	5.03	5.01	3.90	2.01						
	5	5.03	4.98	3.82	2.06						
	X	5.02	4.98	3.86	2.02						
	R	0.05	0.07	0.09	0.07						
ELECTRICAL & REQUIREMENTS	ITEM	L(uH)	DCR (mΩ)	I sat(A)	I rms(A)	SHAPE:					
	SPEC	1.0±30%	15.6MAX	7.35A TYP LOA* 70%	4.9A TYP Δ T≤40℃						
	1	0.79	14.31	92.00	OK						
	2	0.79	13.40	93.00	OK						
	3	0.82	14.14	93.00	OK						
	4	0.81	15.15	92.00	OK						
	5	0.77	15.24	91.00	OK						
	X	0.80	14.45	92.20							
	R	0.05	1.84	2.00							

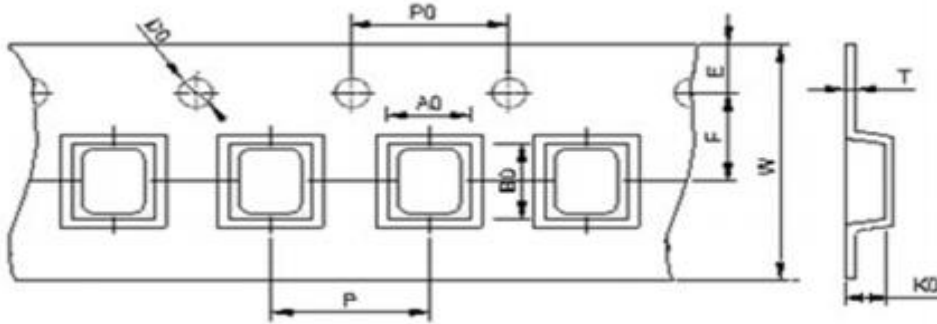
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FILE NO.		PART NO.		DATE	2019.7.1
3					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solderability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃持续90s Preheating: 160±10℃ for 90 seconds (2) 恒温时段: 245±5℃持续2±0.5s Retention time: 245±5℃ for 2±0.5 seconds			
振动测试 Vibration test	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1) 振动频率(10Hz 55Hz 10Hz)60s为一个周期 Vibration frequency: (10Hz to 55Hz to 10Hz) in 60 seconds as a period (2) 振动时间 Vibration time: 三维正交坐标系每个方向振动(周期)循环2小时 Period cycled for 2 hours in each of 3 mutual perpendicular directions (3) 振幅 Amplitude: 1.5 mm Max			
冲击测试 Shock test	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1) 最大振幅 Peak value: 100G (2) 脉冲波长 Duration of pulse: 11ms (3) 三维正交坐标系每个方向正负方向冲击3次 Times in each positive and negative direction of 3 mutual perpendicular directions			
冷热冲击 Thermal shock	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1)重复以上100个循环Repeat 100 cycle as follow (-55±2℃,30±3分钟) 室温5分钟 (-55±2℃,30±3 minutes) Room temperature,5 minutes (+125±2℃,30±3分钟) 室温5分钟 (+125±2℃,30±3 minutes) Room temperature,5 minutes (2)恢复: 测试于标准条件下恢复48+4/-0小时(参考注释1) Recovery:48+4/-0 hours of recovery under the standard condition after the test. (see Note1)			
耐高温测试 High temperature life test	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1)环境条件: 85±2℃ Environment condition : 85±2℃ 应用电流: 额定电流 Applied current: Rated current (2)持续时间: 1000+4/-0 小时(参考注释1) Duration:1000+4/-0 hours (see Note1)			
耐湿测试 Humidity Resistance	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1)环境条件: 60±2℃ Environment condition : 60±2℃ 湿度: 90~95% Humidity:90~95% 应用电流: 额定电流 Applied current: Rated current (2)持续时间: 1000+4/-0 小时(参考注释1) Duration:1000+4/-0 hours (see Note1)			
低温存放测试 Low temperature life test	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1)存储温度 Store temperature -55±2℃下存放 1000+4/-0 小时 -55±2℃for total 1000+4/-0 hours			
高温存放测试 High temperature life test	感值变化: 不超过±5% 且无破裂等机械损伤产生 Inductance change: Within±5% Without mechanical damage such as break	(1)存储温度 Store temperature +125±2℃下存放 1000+4/-0 小时 +125±2℃for total 1000+4/-0 hours			

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12、包装 Packaging

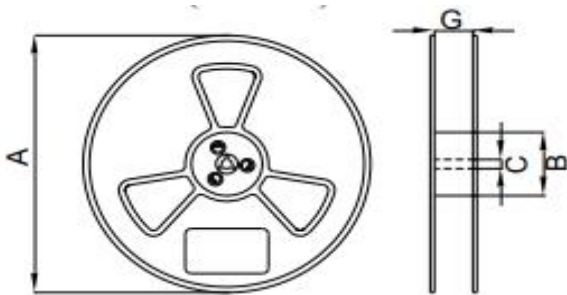
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



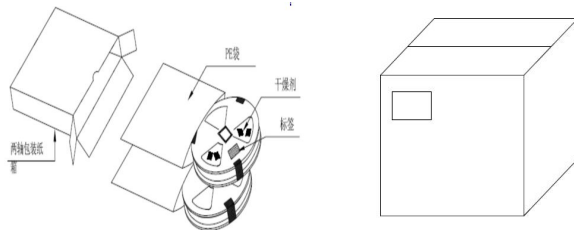
W	A0	B0	K0	E	F	P	D0	P0	T
12.0 ±0.30	15.4 ±0.10	5.4 ±0.10	4.4 ±0.10	1.75 ±0.10	5.5 ±0.1	8.0 ±0.10	1.5 ±0.10	4.0 ±0.10	0.40 ±0.05

12.1.2 卷轴尺寸 Reel dimensions



项目	尺寸(mm)
A	330± 1.0
B	100± 1.0
C	13.0 ±0.5
G	13.0± 0.5

12.1.3 外箱尺寸Carton dimensions



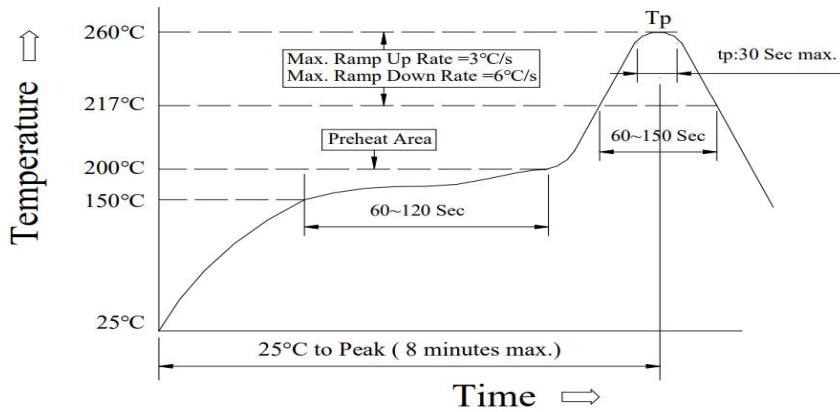
项目	数量(PCS)
1卷轴	1500
1内箱	
1外箱	

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Reflow curve

※ Reflow Profile

Power Choke Coil Type



1. Reflow Soldering Method

Reflow Soldering	Tp:255~260°C	Max.30 seconds (tp)
	217°C	60~150 seconds
Pre-Heat	150 ~ 200°C	60~120 seconds
Time 25°C to peak temperature	8 minutes max.	

2. Soldering iron method : 350±5°C Max.3 seconds.