



**SPECIFICATION FOR APPROVAL**

产品规格承认书

**SMD POWER INDUCTOR**

功率电感

CUSTOMER.

\_\_\_\_\_

MODEL NO.

**MPA5040S680M**

\_\_\_\_\_

CUSTOMER'S PART NO.

\_\_\_\_\_

LILE NO.

\_\_\_\_\_

DATE.

**2019.7.1**

\_\_\_\_\_

REVISION.

**A/0**

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<b>CUSTOMER APPROVE</b>		
<b>DATE:</b>		
<b>DRAWING</b>		
<b>DRAWN BY</b>	<b>CHECK BY</b>	<b>APPROVAL BY</b>
<b>DATE:</b>		



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CUSTOMER		MODEL NO.	<b>MPA5040S680M</b>	REVISION	<b>A/0</b>
FILE NO.		PART NO.		DATE	<b>2019.7.1</b>

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

<b>2.ELECTRICAL REQUIREMENTS</b>			
<b>PARAMETER</b>	<b>SPECIFICATION</b>	<b>CONDITION</b>	<b>TEST INSTRUMENTS</b>
L( uH)	<b>68±20%</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377</b>
DCR(Ω)	<b>0.52MAX</b>	<b>At 25℃</b>	<b>TH2512A</b>
I sat(A)	<b>0.9A TYP L0A* 70%</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377+6220</b>
I rms(A)	<b>0.8A TYP ΔT≅40℃</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377+6220</b>

**3.CHARACTERISTICS**

(1). All test data is based on 25℃ ambient.

(2). DC current(A)that will cause an approximate ΔT40℃

(3). DC current(A)that will cause L0 to drop approximately 10%Typ

(4). Operating temperature range: -55℃~+125℃

(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

**4.SPECIAL REQUEST**

(1)Lettering **331** on top of the body.

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**5.PRODUCT IDENTIFICATION**

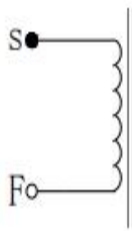
XX XXXX S XXX X

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.				MPA5040S680M		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	5.01	4.98	3.86	2.02						
	2	5.01	5.00	3.89	2.00						
	3	4.98	4.95	3.89	2.05						
	4	5.01	4.97	3.90	2.03						
	5	4.99	4.97	3.87	2.03						
	X	5.00	4.97	3.88	2.03						
	R	0.03	0.05	0.04	0.05						
ELECTRICAL & REQUIREMENTS	ITEM	L(uH)	DCR (Ω)	I sat(A)	I rms(A)	SHAPE:					
	SPEC	68±20%	0.52MAX	0.9A TYP LOA* 70%	0.8A TYP Δ T≤40℃						
	1	58.63	0.42	86.00	OK						
	2	59.93	0.43	90.00	OK						
	3	60.32	0.42	85.00	OK						
	4	61.23	0.42	90.00	OK						
	5	58.92	0.42	86.00	OK						
	X	59.81	0.42	87.40							
	R	2.60	0.01	5.00							

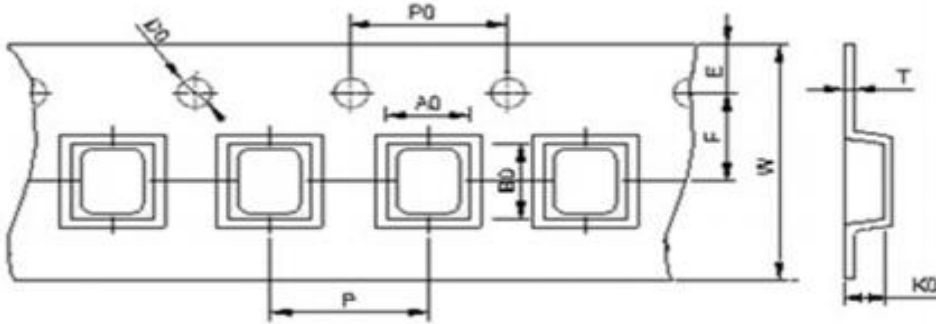
CUSTOMER		MODEL NO.	MPA5040S680M	REVISION	A/0
FILE NO.		PART NO.		DATE	2019.7.1
3					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solderability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃持续90s Preheating: 160±10℃ 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

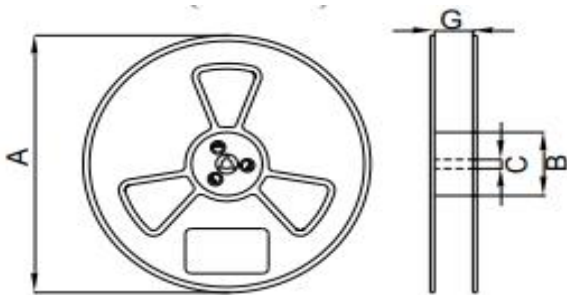
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



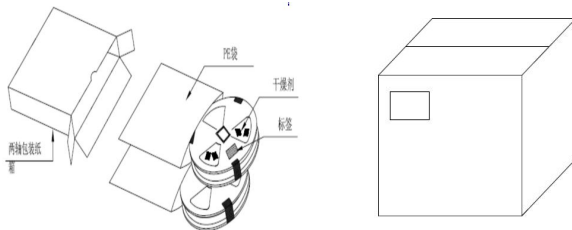
W	A0	B0	K0	E	F	P	D0	P0	T
12.0 ±0.30	15.4 ±0.10	5.4 ±0.10	4.4 ±0.10	1.75 ±0.10	5.5 ±0.1	8.0 ±0.10	1.5 ±0.10	4.0 ±0.10	0.40 ±0.05

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



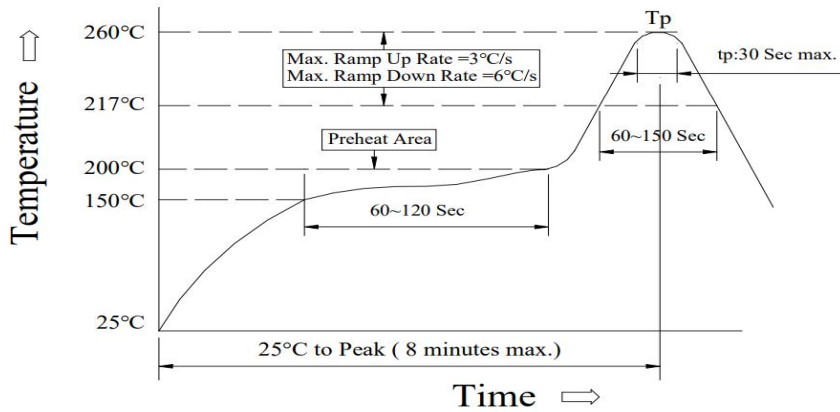
项目	数量(PCS)
1卷轴	1500
1内箱	
1外箱	

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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.