



SPECIFICATION FOR APPROVAL

产品规格承认书

SMD POWER INDUCTOR

功率电感

CUSTOMER.

MODEL NO.

MPA4030S181M

CUSTOMER'S PART NO.

LILE NO.

DATE.

2019.7.1

REVISION.

A/0

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



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CUSTOMER		MODEL NO.	MPA4030S181M	REVISION	A/0
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REVISIONS

REW	PROJECT CHANGE	DESCRIPTION	Date

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1.PRODUCT DIMENSION		UNIT:mm	
	A	4.0±0.2	
	B	4.0±0.2	
	C	3.0MAX	
	D	2.1±0.2	

2.ELECTRICAL REQUIREMENTS			
PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L(uH)	180±20%	1KHz/1.0V	MICROTEST 6377
DCR(Ω)	1.836MAX	At 25℃	TH2512A
I sat(A)	0.48A TYP L0A* 70%	1KHz/1.0V	MICROTEST 6377+6220
Irms(A)	0.40A TYP ΔT≤40℃	1KHz/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>
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<p>4.SPECIAL REQUEST</p> <p>(1)Lettering 181 on top of the body.</p>
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5.PRODUCT IDENTIFICATION

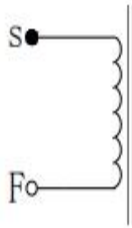
XX XXXX S XXX X

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



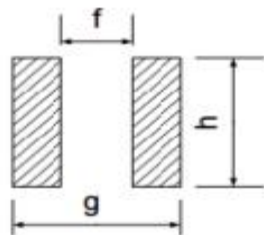
7.APPLICATION

- (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.

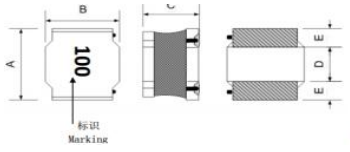
8.FEATURES

- (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



g	3.1typ
f	1.5typ
h	2.7typ

CUSTOMER		MODEL NO.				MPA4030S181M		REVISION		A/0	
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SORT		ITEM	A	B	C	D					
PRODUCT & DIMENSION	SPEC	4.0±0.2	4.0±0.2	3.0MAX	2.1±0.2						
	1	4.13	4.03	2.84	2.09						
	2	4.01	4.00	2.86	2.12						
	3	4.04	4.03	2.86	2.13						
	4	4.05	4.03	2.82	2.12						
	5	4.13	4.02	2.84	2.13						
	X	4.07	4.02	2.84	2.12						
	R	0.12	0.03	0.04	0.04						
ELECTRICAL & REQUIREMENTS	ITEM	L(uH)	DCR (Ω)	I sat(A)	I rms(A)	SHAPE:					
	SPEC	180±20%	1.836MAX	0.48A TYP LOA* 70%	0.40A TYP ΔT≤40℃						
	1	172.40	1.61	82.00	OK						
	2	177.30	1.62	81.00	OK						
	3	178.80	1.53	78.00	OK						
	4	168.90	1.53	83.00	OK						
	5	181.70	1.53	78.00	OK						
	X	175.82	1.56	80.40							
	R	12.80	0.09	5.00							

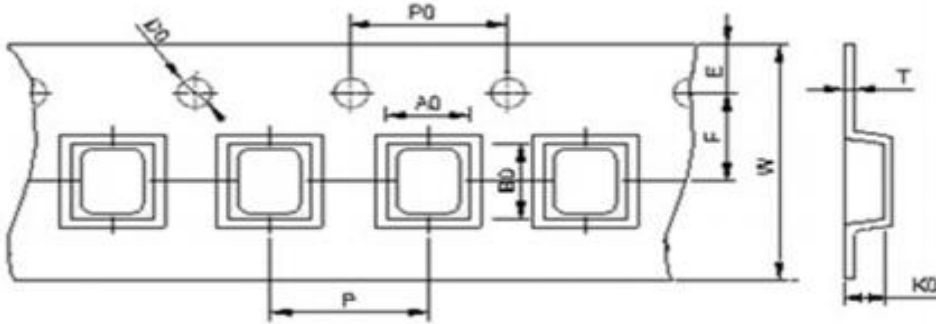
CUSTOMER		MODEL NO.	MPA4030S181M	REVISION	A/0
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3					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solderability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃持续90s 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

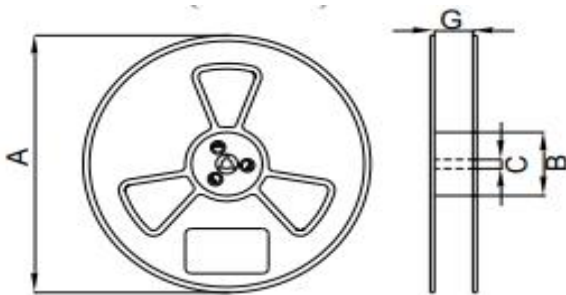
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



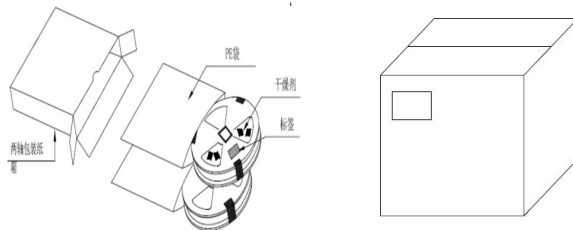
W	A0	B0	K0	E	F	P	D0	P0	T
8.00 ±0.30	1.9 ±0.10	2.3 ±0.10	1.2 ±0.10	1.75 ±0.10	3.5 ±0.05	4.0 ±0.10	1.5 ±0.10	4.0 ±0.10	0.18 ±0.03

12.1.2 卷轴尺寸 Reel dimensions



项目	尺寸(mm)
A	178 ± 2.0
B	58 ± 1.0
C	13.5 ± 0.2
D	9.0 ± 1.5

12.1.3 外箱尺寸 Carton dimensions



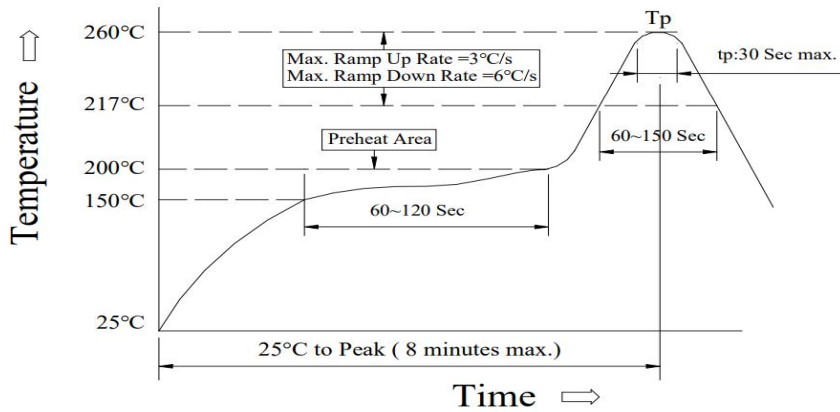
项目	数量 (PCS)
1 卷轴	2000
1 内箱	
1 外箱	

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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.