



**SPECIFICATION FOR APPROVAL**

产品规格承认书

**SMD POWER INDUCTOR**

功率电感

CUSTOMER.

\_\_\_\_\_

MODEL NO.

**MSA54-2R2M**

\_\_\_\_\_

CUSTOMER'S PART NO.

\_\_\_\_\_

LILE NO.

\_\_\_\_\_

DATE.

**2019.4.26**

\_\_\_\_\_

REVISION.

**A/0**

\_\_\_\_\_

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



IATF16949 / ISO9001 / ISO14000

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CUSTOMER		MODEL NO.	MSA54-2R2M	REVISION	A/0
FILE NO.		PART NO.		DATE	2019.4.26

REVISIONS

REW	PROJECT CHANGE	DESCRIPTION	Date

CUSTOMER		MODEL NO.	MSA54-2R2M	REVISION	A/0
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<p><b>1.PRODUCT DIMENSION</b></p>	UNIT:mm	
	A	5.8±0.3
	B	5.2±0.3
	C	4.5±0.3

<b>2.ELECTRICAL REQUIREMENTS</b>			
PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L( uH)	2.2±20%	100KHz/1.0V	MICROTEST 6377
DCR(mΩ)	19.6MAX	At 25℃	TH2512A
I sat(A)	5A TYP 30%	100KHz/1.0V	MICROTEST 6377+6220

**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 2R2 on top of the body.

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**5.PRODUCT IDENTIFICATION**

XX XXXX - XXX X X

①      ②      ③      ④      ⑤

①、 Product Symbol    ②、 Dimensions    ③、 Inductance

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

**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(I sat)realized by metal dust core.
- (4)Frequency Range:up to 1MHZ.

**9.RECOMMENDED PCB LAYOUT**

	H	
	S	
	M	

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SORT		ITEM	A	B	C					
PRODUCT & DIMENSION	SPEC	5.8±0.3	5.2±0.3	4.5±0.3						
	1	5.83	5.23	4.52						
	2	5.82	5.22	4.54						
	3	5.83	5.24	4.52						
	4	5.81	5.23	4.53						
	5	5.82	5.22	4.52						
	X	5.82	5.23	4.53						
	R	0.02	0.02	0.02						
ELECTRICAL & REQUIREMENTS	ITEM	L(uH)	DCR (mΩ)	I sat(A)			SHAPE:			
	SPEC	2.2±20%	19.6MAX	5A TYP 30%						
	1	2.18	16.38	2.07						
	2	2.15	16.32	2.06						
	3	2.19	16.35	2.08						
	4	2.18	16.37	2.09						
	5	2.16	16.38	2.06						
	X	2.17	16.36	2.07						
	R	0.04	0.06	0.03						

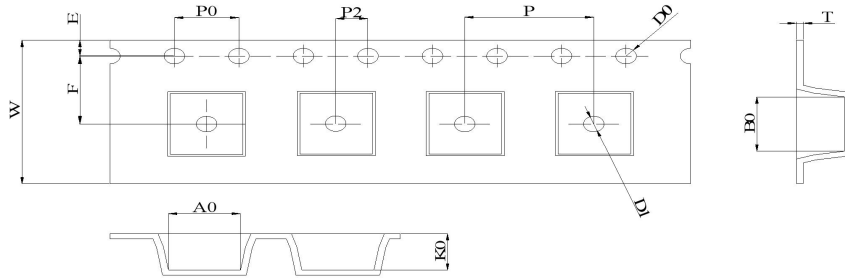
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3					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solder ability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃持续90s Preheating: 160±10℃ for 90 seconds (2) 恒温时段: 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**



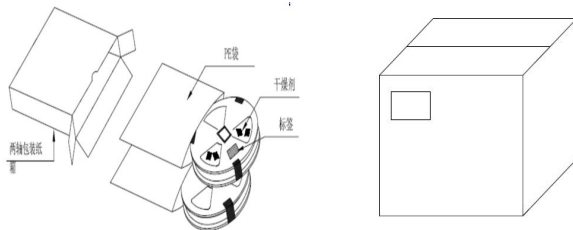
W	A0	B0	K0	P	F	E	D0	P0	T
<b>12.00</b> <b>±0.30</b>	<b>5.4</b> <b>±0.10</b>	<b>6.0</b> <b>±0.10</b>	<b>4.8</b> <b>±0.10</b>	<b>8.0</b> <b>±0.10</b>	<b>5.5</b> <b>±0.1</b>	<b>1.75</b> <b>±0.10</b>	<b>1.50</b> <b>±0.10</b>	<b>4.0</b> <b>±0.10</b>	<b>0.35</b> <b>±0.05</b>

**12.1.2 卷轴尺寸 Reel dimensions**



项目	尺寸(mm)
<b>A</b>	<b>330.0 ± 2.0</b>
<b>B</b>	<b>100.0 ± 1.0</b>
<b>C</b>	<b>13.0 ± 1.0</b>
<b>D</b>	<b>1.9 ± 0.4</b>
<b>W</b>	<b>17.5max</b>
<b>W1</b>	<b>12.5max</b>

**12.1.3 外箱尺寸 Carton dimensions**



项目	数量(PCS)
<b>1卷轴</b>	<b>1500</b>
<b>1内箱</b>	<b>6000</b>
<b>1外箱</b>	<b>18000</b>

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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.