



SPECIFICATION FOR APPROVAL

产品规格承认书

SMD POWER INDUCTOR

功率电感

CUSTOMER.

MODEL NO.

MPA252012S2R2M

CUSTOMER'S PART
NO.

LILE NO.

DATE.

2019.7.1

REVISION.

A/1

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



IATF16949 / ISO9001 / ISO14000

深圳市迈翔科技有限公司

SHENZHEN MOTTO TECHNOLOGY Co., Ltd

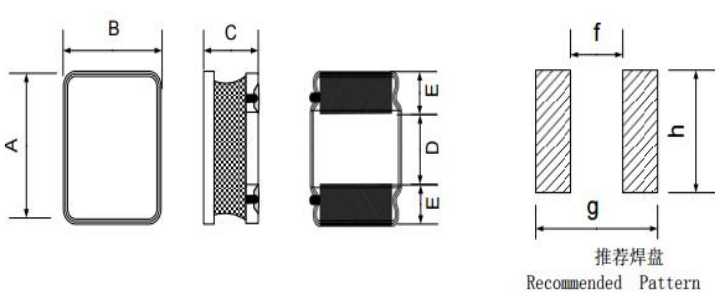
香港瑞德科技有限公司 黄冈市迈翔电子有限公司

Motto Technology park, niu e ling village no#214 xintian,nghua Town,
Guanlan Street, Longhua District, Shenzhen

TEL: +86 0755-8948751~2 89487610 Fax: +86 0755-61624574

[Http://www.coilmx.com](http://www.coilmx.com) E-mail: sales@mottotech.com

| | | | | | |
|----------|---|-----------|----------------|----------|----------|
| CUSTOMER | 0 | MODEL NO. | MPA252012S2R2M | REVISION | A/1 |
| FILE NO. | | PART NO. | | DATE | 2019.7.1 |

| 1.PRODUCT DIMENSION | | UNIT:mm | |
|---|---|----------|--|
|  <p>推荐焊盘 Recommended Pattern</p> | A | 2.5±0.2 | |
| | B | 2.0±0.2 | |
| | C | 1.2MAX | |
| | D | 0.8±0.2 | |
| | E | 0.8±0.2 | |
| | F | 0.80 TYP | |
| | G | 2.50 TYP | |
| | H | 2.00 TYP | |
| | | | |
| | | | |

| 2.ELECTRICAL REQUIREMENTS | | | |
|---------------------------|--------------------|-----------|---------------------|
| PARAMETER | SPECIFICATION | CONDITION | TEST INSTRUMENTS |
| L (uH) | 2.2±20% | 1MHz/1.0V | MICROTEST 6377 |
| DCR(mΩ) | 144MAX | At 25℃ | TH2512A |
| I sat(A) | 1.55A TYP L0A* 70% | 1MHz/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 on top of the body. |

| | | | | | |
|----------|---|-----------|----------------|----------|----------|
| CUSTOMER | 0 | MODEL NO. | MPA252012S2R2M | REVISION | A/1 |
| FILE NO. | | PART NO. | | DATE | 2019.7.1 |

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



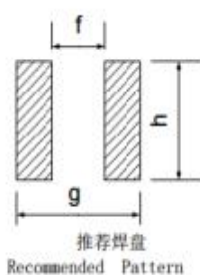
7.APPLICATION

- (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.

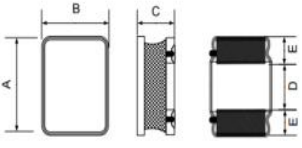
8.FEATURES

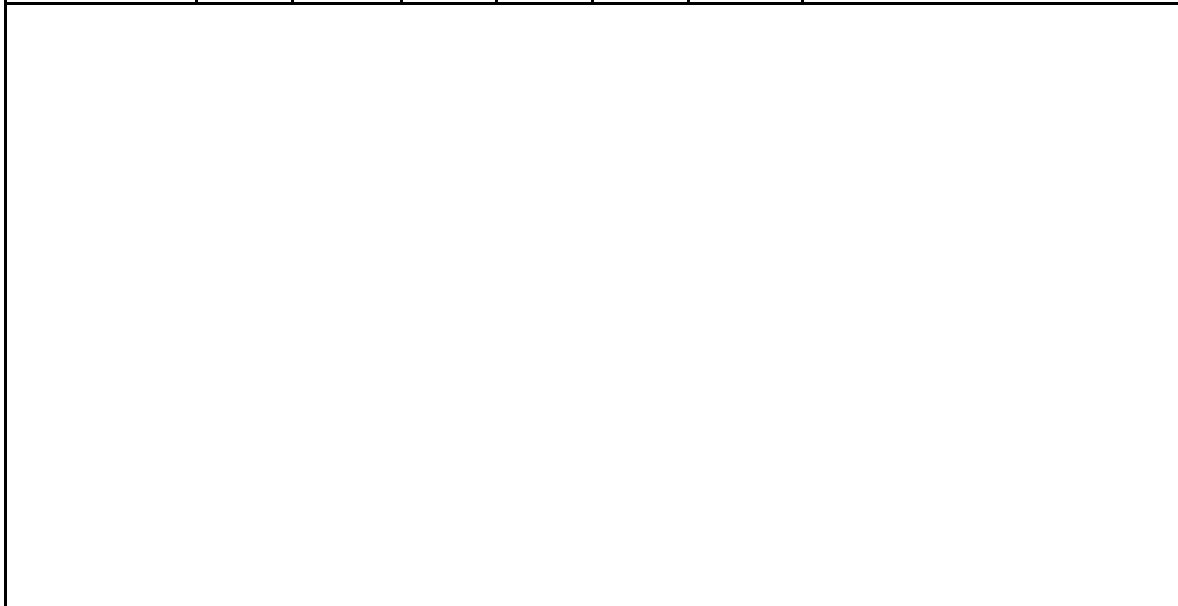
- (1)ROHS compliant.
- (2)Super low resistance,ultra high current rating.
- (3)high performance(I sat)realized by metal dust core.
- (4)Frequency Range:up to 1MHZ.

9.RECOMMENDED PCB LAYOUT



| | |
|---|--------|
| g | 2.5typ |
| f | 0.8typ |
| h | 2.0typ |
| | |
| | |
| | |

| CUSTOMER | 0 | | MODEL NO. | MPA252012S2R2M | | | REVISION | A/1 | | |
|---------------------------|------|---------|-----------|-----------------------|---------|--|--|----------|--|--|
| FILE NO. | | | PART NO. | | | | DATE | 2019.7.1 | | |
| SORT | ITEM | A | B | C | D | | | | | |
| PRODUCT & DIMENSION | SPEC | 2.5±0.2 | 2.0±0.2 | 1.2MAX | 0.8±0.2 | | | | | |
| | 1 | 2.55 | 2.15 | 1.12 | 0.82 | | | | | |
| | 2 | 2.50 | 2.14 | 1.17 | 0.84 | | | | | |
| | 3 | 2.49 | 2.18 | 1.14 | 0.85 | | | | | |
| | 4 | 2.47 | 2.18 | 1.14 | 0.82 | | | | | |
| | 5 | 2.54 | 2.14 | 1.16 | 0.84 | | | | | |
| | X | 2.51 | 2.16 | 1.15 | 0.83 | | | | | |
| | R | 0.08 | 0.04 | 0.05 | 0.03 | | | | | |
| ELECTRICAL & REQUIREMENTS | ITEM | L(uH) | DCR (mΩ) | I sat(A) | | | SHAPE: | | | |
| | SPEC | 2.2±20% | 144MAX | 1.55A TYP LOA* 70% | | |  | | | |
| | 1 | 1.95 | 87.85 | 83.00 | | | | | | |
| | 2 | 2.08 | 87.51 | 77.00 | | | | | | |
| | 3 | 2.23 | 88.60 | 78.00 | | | | | | |
| | 4 | 2.07 | 88.70 | 81.00 | | | | | | |
| | 5 | 2.01 | 87.38 | 74.00 | | | | | | |
| | X | 2.07 | 88.01 | 78.60 | | | | | | |
| | R | 0.28 | 1.32 | 9.00 | | | | | | |



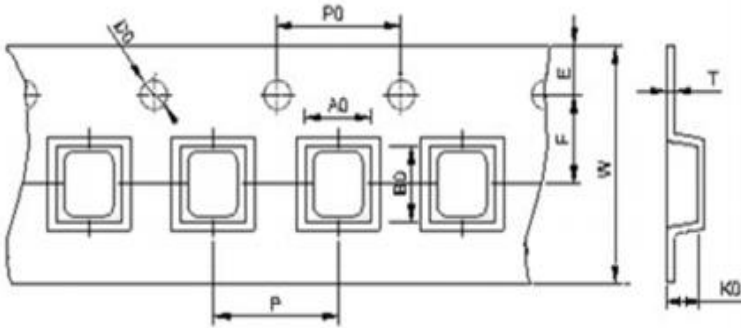
| CUSTOMER | 0 | MODEL NO. | MPA252012S2R2M | REVISION | A/1 |
|-------------------------------------|---|--|----------------|----------|----------|
| FILE NO. | | PART NO. | | DATE | 2019.7.1 |
| 3 | | | | | |
| 项目Item | 规格与需求 Specification and Requirement | 测试方法Test Method | | | |
| 可焊性 Solderability 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 | | | |

| | | | | | |
|----------|--|-----------|----------------|----------|----------|
| CUSTOMER | | MODEL NO. | MPA252012S2R2M | REVISION | A/0 |
| FILE NO. | | PART NO. | | DATE | 2019.7.1 |

12、包装 Packaging

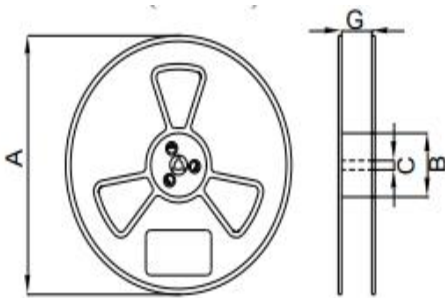
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



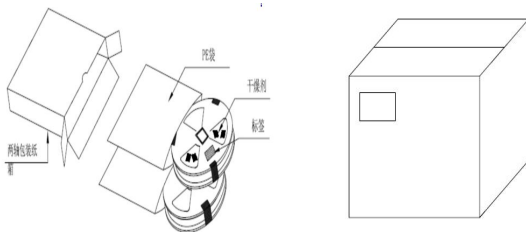
| W | A0 | B0 | K0 | E | F | P | D0 | P0 | T |
|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|
| 8.00 ±0.30 | 1.9 ±0.10 | 2.3 ±0.10 | 1.2 ±0.10 | 1.75 ±0.10 | 3.5 ±0.05 | 4.0 ±0.10 | 1.5 ±0.10 |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



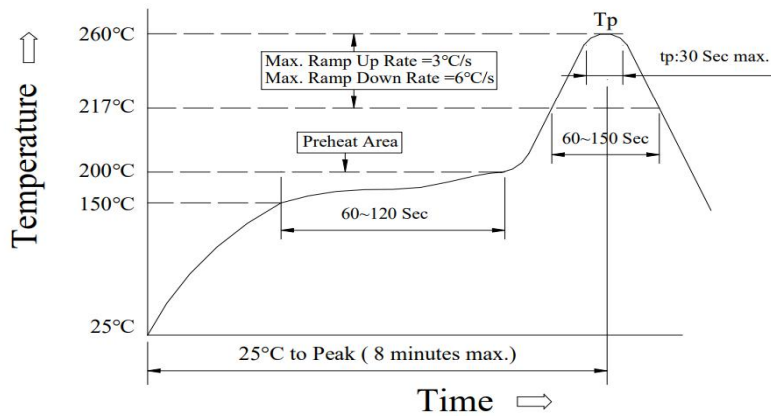
| 项目 | 数量 (PCS) |
|------|----------|
| 1 卷轴 | 2000 |
| 1 内箱 | |
| 1 外箱 | |

| | | | | | |
|----------|---|-----------|----------------|----------|----------|
| CUSTOMER | 0 | MODEL NO. | MPA252012S2R2M | REVISION | A/1 |
| FILE NO. | | PART NO. | | DATE | 2019.7.1 |

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.