COILMX

# SPECIFICATION FOR APPROVAL

## 产品规格承认书

## Unibody Inductor

## 一体成型功率电感

| | |
|---|---|
| CUSTOMER. | |
| MODEL NO. | MS0840-100M |
| CUSTOMER'S PART NO. | |
| LILE NO. | |
| DATE. | 2020-6-18 |
| REVISION. | A/0 |

| CUSTOMER APPROVE | | |
|---|---|---|
| | | |
| DATE: | | |
| DRAWING | | |
| DRAWN BY | CHECK BY | APPROVAL BY |
| 林思思 | 白峰 | 曾伟 |
| DATE: 2020-6-18 | | |


COILMX
新能源光储充电子磁性元器件制造商

惠州市迈翔电子有限公司
深圳市迈翔科技有限公司
黄冈市迈翔电子有限公司　英德市迈翔电子有限公司
5~6F, Building B, Jinhao Smart Park, No. 207 Sihuan South Road, Zhongkai High tech Zone, Huizhou City,Guangdong Province, China
TEL: +86 0752-3398115　3398116　3398117
Http: //www.coilmotto.com　www.coilmx.com　E-mail: pxr@coilmx.com

COILMX 惠州市迈翔电子有限公司 深圳市迈翔科技有限公司

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

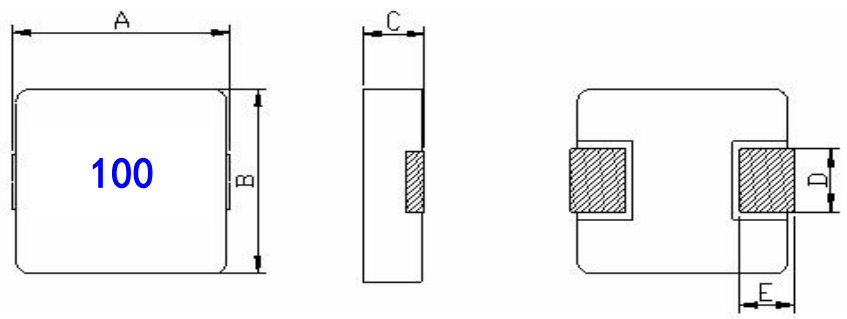
REVISIONS

| REW | PROJECT CHANGE | DESCRIPTION | Date |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

COILMX 惠州市迈翔电子有限公司 深圳市迈翔科技有限公司

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

**1.PRODUCT DIMENSION** UNIT:mm




| | |
|---|---|
| A | 8.60±0.50 |
| B | 8.0±0.5 |
| C | 4.0 Max |
| D | 3.0±0.5 |
| E | 1.8±0.5 |

**2.ELECTRICAL REQUIREMENTS**

| PARAMETER | SPECIFICATION | CONDITION | TEST INSTRUMENTS |
|---|---|---|---|
| L(uH) | 10.0μH±20% | 100KHz/1.0V | MICROTEST 6377 |
| DCR(mΩ) | 60mΩMAX | At 25℃ | TH2512A |
| I sat(A) | 6.5A TYP L0A*70% | 100KHz/1.0V | MICROTEST 6377+6220 |
| I rms(A) | 4.5A TYP △T≤40℃ | 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 △T40℃

(3). DC current(A)that will cause L0 to drop approximately 30%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 100 on top of the body.

COILMX 惠州市迈翔电子有限公司 深圳市迈翔科技有限公司

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

**5.PRODUCT IDENTIFICATION**

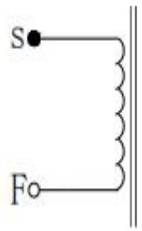
XX XXXX - XXX X X

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.

(4)DC/DC converters for field programmable gate array.

**8.FEATURES**

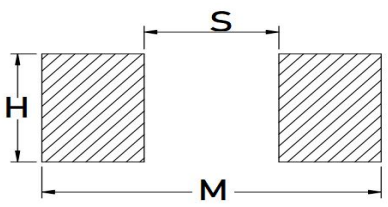
(1)ROHS compliant.

(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**

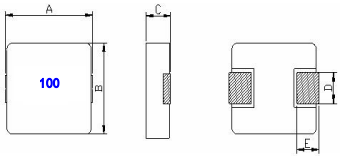


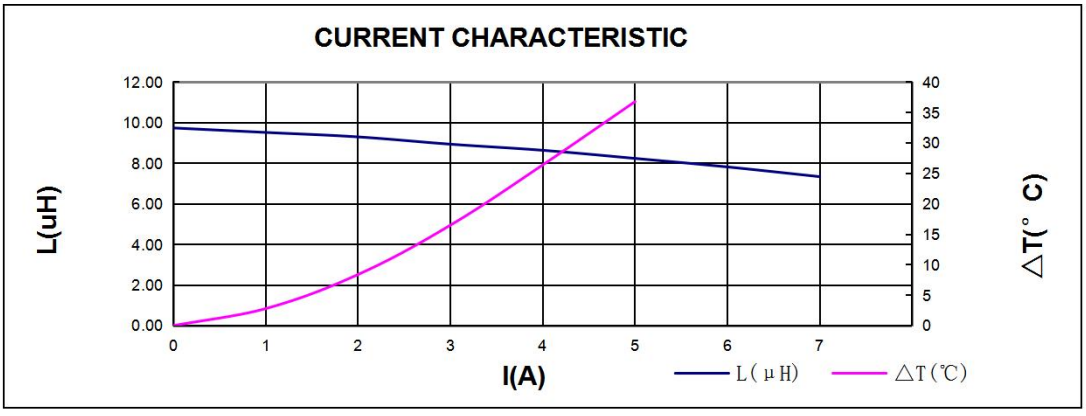

| | |
|---|---|
| H | 3.5 |
| S | 3.7 |
| M | 8.7 |
| | |
| | |
| | |

COILMX 惠州市迈翔电子有限公司 深圳市迈翔科技有限公司

| CUSTOMER | | | MODEL NO. | | MS0840-100M | | REVISION | | A/0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| FILE NO. | | | PART NO. | | | | DATE | | 2020-6-18 | |
| SORT | ITEM | A | B | C | D | E | | | | |
| PRODUCT & DIMENSION | SPEC | 8.60±0.50 | 8.0±0.5 | 4.0 Max | 3.0±0.5 | 1.8±0.5 | | | | |
| | 1 | 8.61 | 8.05 | 3.82 | 3.02 | 1.72 | | | | |
| | 2 | 8.65 | 8.05 | 3.81 | 3.01 | 1.71 | | | | |
| | 3 | 8.67 | 8.06 | 3.83 | 3.00 | 1.72 | | | | |
| | 4 | 8.66 | 8.06 | 3.82 | 3.01 | 1.73 | | | | |
| | 5 | 8.65 | 8.07 | 3.84 | 3.00 | 1.72 | | | | |
| | X | 8.65 | 8.06 | 3.82 | 3.01 | 1.72 | | | | |
| | R | 0.06 | 0.02 | 0.03 | 0.02 | 0.02 | | | | |

| ELECTRICAL & REQUIREMENTS | ITEM | L(μH) | DCR ( mΩ) | I sat(A) | DC BIAS | Irms | SHAPE: |
|---|---|---|---|---|---|---|---|
| | SPEC | 10.0μH±20% | 60mΩMAX | 6.5A TYP L0A*70% | | 4.5A TYP △T≤40℃ | |
| | 1 | 9.200 | 51.14 | 6.990 | -24.0% | OK | |
| | 2 | 9.670 | 51.02 | 7.220 | -25.3% | OK | |
| | 3 | 9.740 | 50.89 | 7.320 | -24.8% | OK | |
| | 4 | 9.760 | 50.84 | 7.330 | -24.9% | OK | |
| | 5 | 9.510 | 50.98 | 7.120 | -25.1% | OK | |
| | X | 9.58 | 50.97 | 7.20 | -24.8% | | |
| | R | 0.56 | 0.30 | 0.34 | 1.3% | | |




| I(A) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|---|---|---|---|---|---|---|---|---|---|
| L(μH) | 9.740 | 9.52 | 9.300 | 8.94 | 8.640 | 8.24 | 7.820 | 7.34 | |
| △T(℃) | 0 | 2.8 | 8.4 | 16.5 | 26.4 | 36.8 | | | |

COILMX 惠州市迈翔电子有限公司 深圳市迈翔科技有限公司

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

**11.可靠性Reliability**

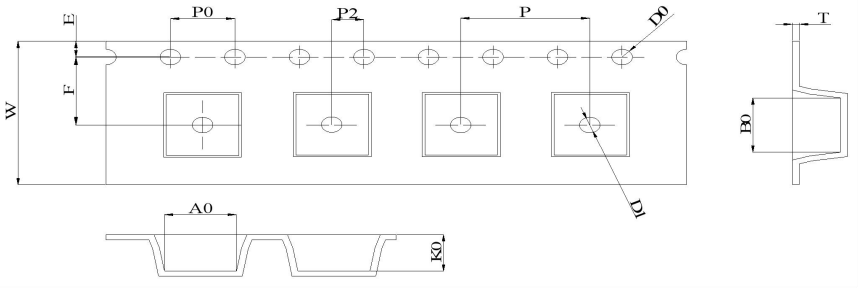
| 项目Item | 规格与需求 Specification and Requirement | 测试方法Test Method |
|---|---|---|
| 可焊性 Solder a bility test | 沾锡面积不得小于95%上锡面<br><br>Terminals area must have 95% min solder coverage | 上锡升温曲线Solder heat proof:<br>(1) 预热：160±10℃持续90s<br>Preheating: 160±10℃ for 90 seconds<br>(2) 恒温时段：245±5℃持续2±0.5s<br>Retention time: 245±5℃ for 2±0.5 seconds |
| 振动测试 Vibration test | 感值变化：不超过±5%<br>且无破裂等机械损伤产生<br><br>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<br>(2) 振动时间 Vibration time:<br>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<br>(3) 振幅 Amplitude: 1.5 mm Max |
| 冲击测试 Shock test | 感值变化：不超过±5%<br>且无破裂等机械损伤产生<br>Inductance change: Within±5% Without mechanical damage such as break | (1) 最大振幅 Peak value: 100G<br>(2) 脉冲波长 Duration of pulse: 11ms<br>(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%<br>且无破裂等机械损伤产生<br><br>Inductance change: Within±5% Without mechanical damage such as break | (1)重复以上100个循环Repeat 100 cycle as follow<br>(-55±2℃,30±3分钟) 室温5分钟<br>(-55±2℃,30±3 minutes)<br>Room temperature,5 minutes<br>(+125±2℃,30±3分钟) 室温5分钟<br>(+125±2℃,30±3 minutes)<br>Room temperature,5 minutes<br>(2)恢复：测试于标准条件下恢复48+4/-0小时 （参考注释1）<br>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%<br>且无破裂等机械损伤产生<br>Inductance change: Within±5% Without mechanical damage such as break | (1)环境条件：85±2℃<br>Environment condition : 85±2℃<br>应用电流：额定电流<br>Applied current: Rated current<br>(2)持续时间：1000+4/-0 小时（参考注释1）<br>Duration:1000+4/-0 hours (see Note1) |
| 耐湿测试 Humidity Resistance | 感值变化：不超过±5%<br>且无破裂等机械损伤产生<br>Inductance change: Within±5% Without mechanical damage such as break | (1)环境条件：60±2℃<br>Environment condition : 60±2℃<br>湿度：90~95%<br>Humidity:90~95%<br>应用电流：额定电流<br>Applied current: Rated current<br>(2)持续时间：1000+4/-0 小时（参考注释1）<br>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%<br>且无破裂等机械损伤产生<br>Inductance change: Within±5% Without mechanical damage such as break | (1)存储温度 Store temperature<br>-55±2℃下存放 1000+4/-0 小时<br>-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%<br>且无破裂等机械损伤产生<br>Inductance change: Within±5% Without mechanical damage such as break | (1)存储温度 Store temperature<br>+125±2℃下存放 1000+4/-0 小时<br>+125±2℃for total 1000+4/-0 hours |

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

## 12、包装 Packaging

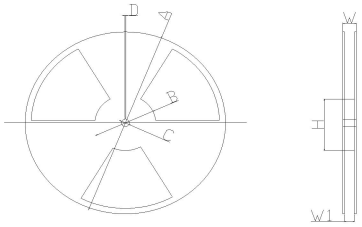
### 12.1、尺寸 Dimensions

#### 12.1.1 包装料带尺寸 Tape packaging dimensions



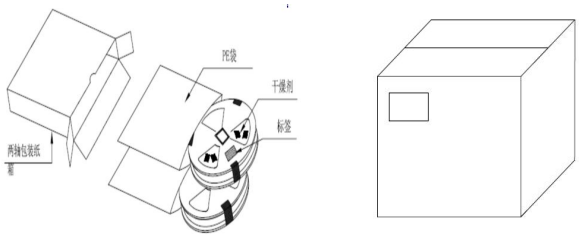

| W | A0 | B0 | K0 | P | F | E | D0 | P0 | T |
|---|---|---|---|---|---|---|---|---|---|
| 16.00 ±0.30 | 9.5 ±0.10 | 8.5 ±0.10 | 4.3 ±0.10 | 12 ±0.10 | 11.5 ±0.1 | 1.75 ±0.10 | 1.50 ±0.10 | 4.0 ±0.10 | 0.35 ±0.05 |

#### 12.1.2 卷轴尺寸 Reel dimensions




| 项目 | 尺寸(mm) |
|---|---|
| A | 330.0 ± 2.0 |
| B | 100.0 ± 1.0 |
| C | 13.0 ± 1.0 |
| D | 1.9 ± 0.4 |
| W | 22.4 Max |
| W1 | 16.4 ± 1.0 |

#### 12.1.3 外箱尺寸Carton dimensions

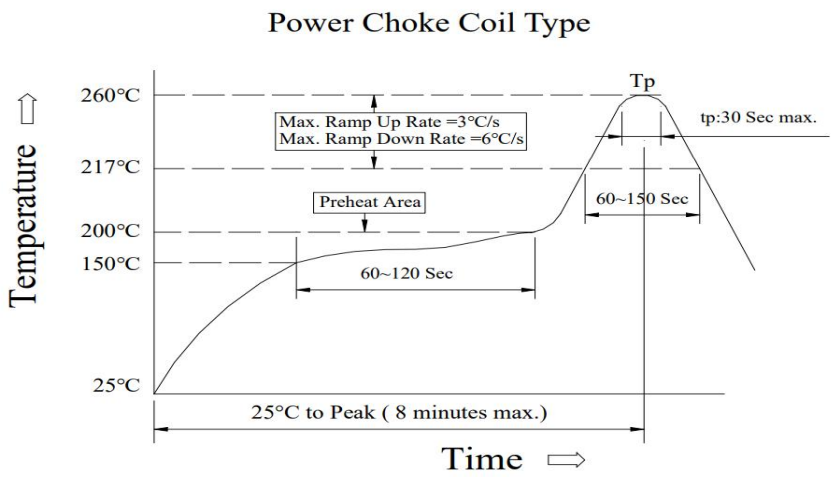


| 项目 | 数量(PCS) |
|---|---|
| 1卷轴 | 1000 |
| 1内箱 | 3000 |
| 1外箱 | 9000 |

| CUSTOMER | | MODEL NO. | MS0840-100M | REVISION | A/0 |
|---|---|---|---|---|---|
| FILE NO. | | PART NO. | | DATE | 2020-6-18 |

## Reflow curve

**※ Reflow Profile**




**1. Reflow Soldering Method**

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

**2. Soldering iron method： 350±5℃ Max.3 seconds.**