

**SPECIFICATION FOR APPROVAL**

产品规格承认书

**Unibody Inductor**

一体成型功率电感

CUSTOMER.

MODEL NO.

MS1040-1R0M

CUSTOMER'S PART NO.

LILE NO.

DATE.

2018/12/12

REVISION.

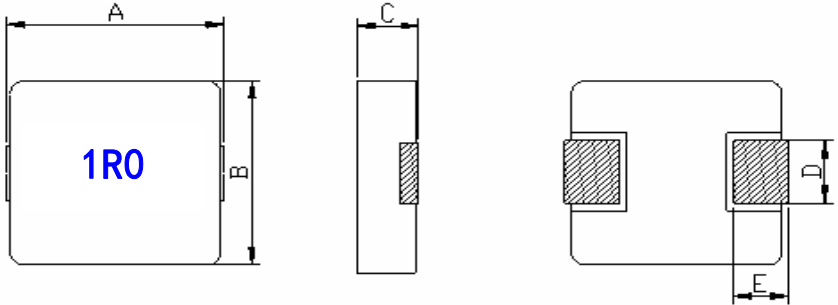
A/0

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

深圳市迈翔科技有限公司  
SHENZHEN MOTTO TECHNOLOGY Co., Ltd  
深圳市龙华区、观澜街道、新田社区、牛轭岭新村214号、迈翔科技园  
Motto Technology park, niu e ling village no#214 xintian, nghua Town,  
guanlan street, longhua District, Shenzhen  
TEL: +86 0755-89487511 89487512 89487610  
Fax: +86 0755-61624574  
Http://www.mottotech.com E-mail: sales@mottotech.com



CUSTOMER		MODEL NO.	<b>MS1040-1R0M</b>	REVISION	<b>A/0</b>
FILE NO.		PART NO.		DATE	<b>2018/12/12</b>

<p><b>1.PRODUCT DIMENSION</b></p> 	<b>UNIT:mm</b>	
	<b>A</b>	<b>10.85±0.35</b>
	<b>B</b>	<b>10.0±0.3</b>
	<b>C</b>	<b>4.0 Max</b>
	<b>D</b>	<b>3.0±0.5</b>
	<b>E</b>	<b>2.0±0.5</b>

<b>2.ELECTRICAL REQUIREMENTS</b>			
PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L(uH)	<b>1.0μH±20%</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377</b>
DCR(mΩ)	<b>3.3mΩMAX</b>	<b>At 25°C</b>	<b>TH2512A</b>
I sat(A)	<b>28A TYP L0A*70%</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377+6220</b>
I rms(A)	<b>18A TYP ΔT≤40°C</b>	<b>100KHz/1.0V</b>	<b>MICROTEST 6377+6220</b>

**3.CHARACTERISTICS**

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

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

(3). DC current(A)that will cause L0 to drop approximately 30%Typ

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

(5).The part temperature (ambient + temp rise)should not exceed 125°C 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 **1R0** on top of the body.

CUSTOMER		MODEL NO.	MS1040-1R0M	REVISION	A/0
FILE NO.		PART NO.		DATE	2018/12/12

**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



- 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.

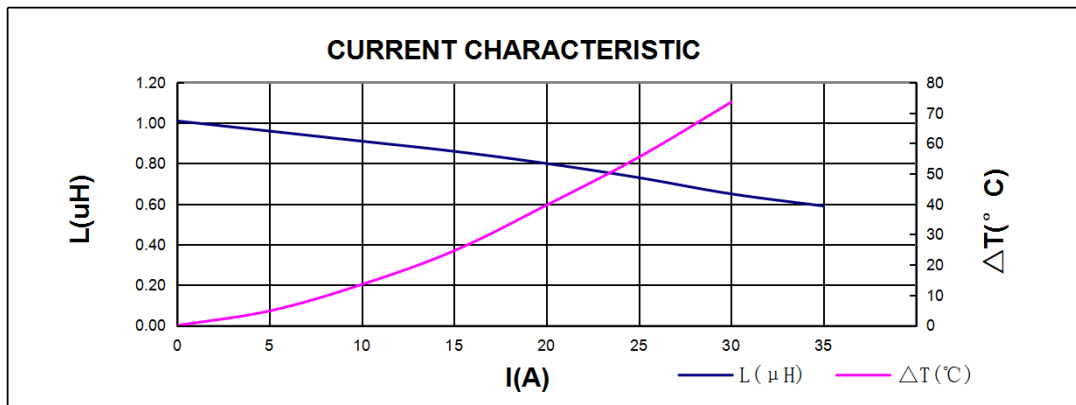
- 8.FEATURES**
- (1)ROHS compliant.
  - (2)Super low resistance,ultra high current rating.
  - (3)high performance(I sat)realized by metal dust core.
  - (4)Frequency Range:up to 1MHZ.

**9.RECOMMENDED PCB LAYOUT**

H	4.95
S	5.4
M	13.6

CUSTOMER		MODEL NO.	MS1040-1R0M		REVISION	A/0	
FILE NO.		PART NO.			DATE	2018/12/12	
SORT	ITEM	A	B	C	D	E	
PRODUCT & DIMENSION	SPEC	10.85±0.35	10.0±0.3	4.0 Max	3.0±0.5	2.0±0.5	
	1	10.76	10.03	3.92	2.98	2.08	
	2	10.78	10.03	3.95	2.98	2.06	
	3	10.76	10.04	3.94	2.98	2.10	
	4	10.76	10.03	3.93	2.97	2.08	
	5	10.74	10.04	3.93	2.98	2.07	
	X	10.76	10.03	3.93	2.98	2.08	
R	0.04	0.01	0.03	0.01	0.04		

ELECTRICAL & REQUIREMENTS	ITEM	L(μH)	DCR (mΩ)	I sat(A)	DC BIAS	Irms	SHAPE:
	SPEC	1.0μH±20%	3.3mΩMAX	28A TYP LOA*70%		18A TYP Δ T≤40℃	
	1	0.980	2.85	0.716	-26.9%	OK	
	2	0.950	2.88	0.702	-26.1%	OK	
	3	0.950	2.85	0.701	-26.2%	OK	
	4	0.950	2.88	0.701	-26.2%	OK	
	5	0.980	2.84	0.710	-27.6%	OK	
	X	0.96	2.86	0.71	-26.6%		
	R	0.03	0.04	0.02	1.4%		



I(A)	0	5	10	15	20	25	30	35	
L(μH)	1.010	0.96	0.91	0.86	0.8	0.73	0.65	0.59	
ΔT(°C)	0	4.8	13.5	24.6	39.6	55.4	73.5		

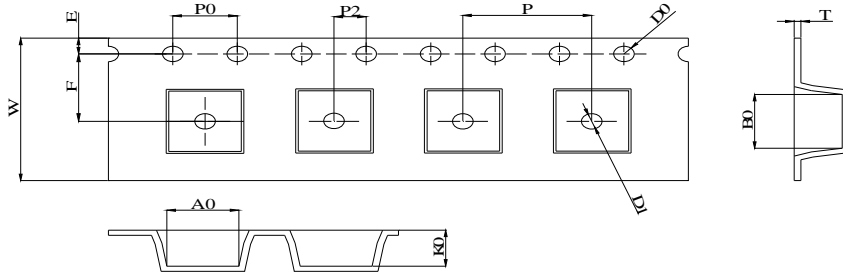
CUSTOMER		MODEL NO.	MS1040-1R0M	REVISION	A/0
FILE NO.		PART NO.		DATE	2018/12/12
<b>11.可靠性Reliability</b>					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solder ability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃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			

CUSTOMER		MODEL NO.	MS1040-1R0M	REVISION	A/0
FILE NO.		PART NO.		DATE	2018/12/12

12、包装 Packaging

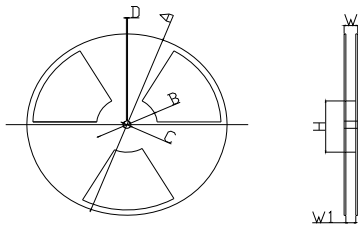
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



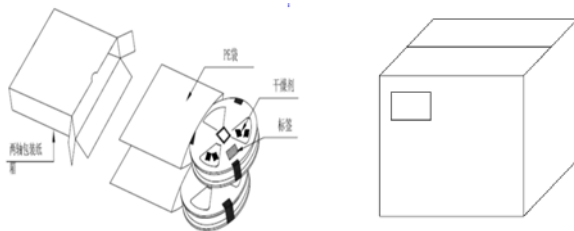
W	A0	B0	K0	P	F	E	D0	P0	T
24.00 ±0.30	10.6 ±0.10	11.8 ±0.10	4.35 ±0.10	16.0 ±0.10	11.5 ±0.1	1.75 ±0.10	1.50 ±0.10	4.0 ±0.10	0.35 ±0.05

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	30.4 Max
W1	24.4 ± 1.0

12.1.3 外箱尺寸 Carton dimensions



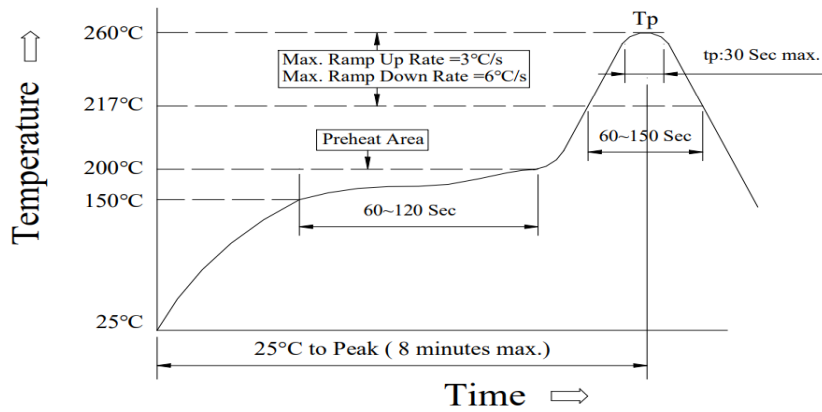
项目	数量 (PCS)
1 卷轴	500
1 内箱	1000
1 外箱	3000

CUSTOMER		MODEL NO.	MS1040-1R0M	REVISION	A/0
FILE NO.		PART NO.		DATE	2018/12/12

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.