

# COILMX

## SPECIFICATION FOR APPROVAL

产品规格承认书

### Unibody Inductor

一体成型功率电感

CUSTOMER.

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MODEL NO.

MS0840-3R3M

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CUSTOMER'S PART NO.

---

LILE NO.

---

DATE.

2020-8-31

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REVISION.

A/0

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CUSTOMER APPROVE

DATE:

DRAWING

DRAWN BY

CHECK BY

APPROVAL BY

DATE:



**sira**  
CERTIFICATION



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,

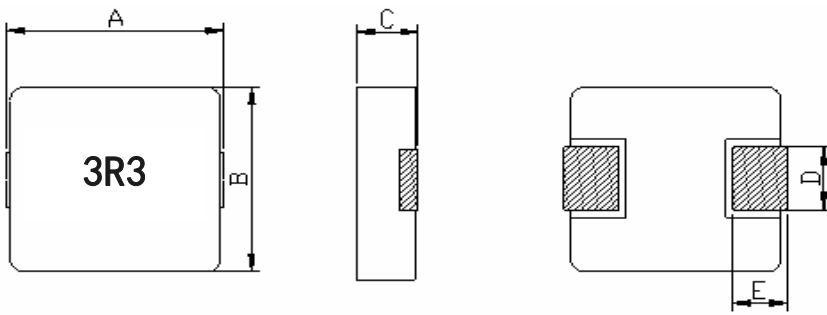
Guanlan Street, Longhua District, Shenzhen

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

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



<b>CUSTOMER</b>		<b>MODEL NO.</b>	MS0840-3R3M	<b>REVISION</b>	A/0
<b>FILE NO.</b>		<b>PART NO.</b>		<b>DATE</b>	2020-8-31

<b>1.PRODUCT DIMENSION</b>  	<b>UNIT:mm</b>	
	<b>A</b>	8.60±0.50
	<b>B</b>	8.0±0.5
	<b>C</b>	4.0 Max
	<b>D</b>	3.0±0.5
	<b>E</b>	1.8±0.5

<b>2.ELECTRICAL REQUIREMENTS</b>			
<b>PARAMETER</b>	<b>SPECIFICATION</b>	<b>CONDITION</b>	<b>TEST INSTRUMENTS</b>
<b>L(uH)</b>	3.3μH±20%	100KHz/1.0V	MICROTEST 6377
<b>DCR(mΩ)</b>	18.0mΩMAX	At 25°C	TH2512A
<b>I sat(A)</b>	10.0A TYP L0A*70%	100KHz/1.0V	MICROTEST 6377+6220
<b>I rms(A)</b>	9.0A TYP ΔT≤40°C	100KHz/1.0V	MICROTEST 6377+6220

**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 3R3 on top of the body.

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<b>FILE NO.</b>		<b>PART NO.</b>		<b>DATE</b>	2020-8-31

**5.PRODUCT IDENTIFICATION**

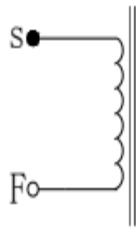
XX XXXX - XXX X X

① ② ③ ④ ⑤

①、 Product Symbol ②、 Dimensions ③、 Inductance

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

**6.ELECTRICAL SCHEMATICS**



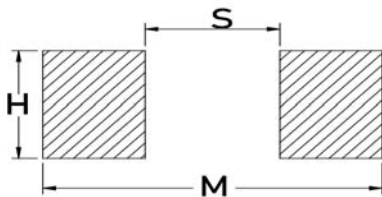
**7.APPLICATION**

- (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.

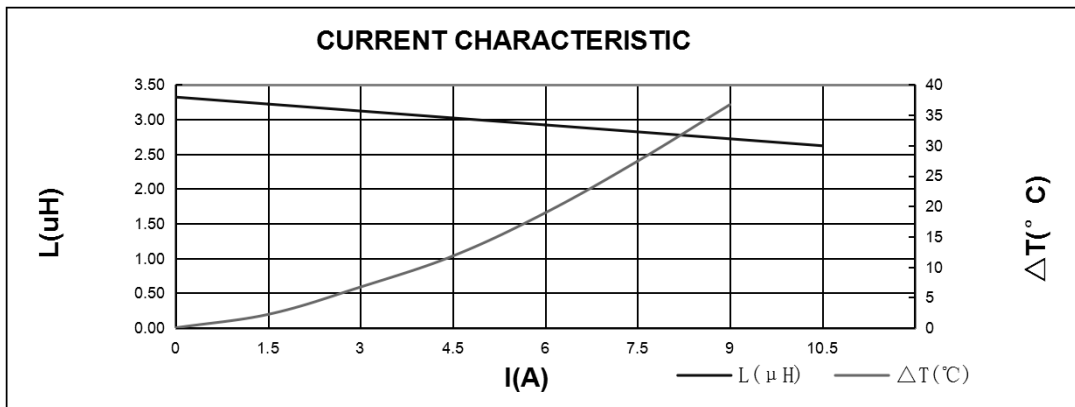
**9.RECOMMENDED PCB LAYOUT**



<b>H</b>	3.5
<b>S</b>	3.7
<b>M</b>	8.7

CUSTOMER		MODEL NO.	MS0840-3R3M		REVISION	A/0	
FILE NO.		PART NO.			DATE	2020-8-31	
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	3.3μH±20%	18.0mΩ MAX	10.0A TYP L0A*70%		9.0A TYP ΔT≤40℃	
	1	3.390	14.60	2.500	-26.3%	OK	
	2	3.340	14.70	2.470	-26.0%	OK	
	3	3.330	14.63	2.470	-25.8%	OK	
	4	3.360	14.64	2.490	-25.9%	OK	
	5	3.280	14.58	2.470	-24.7%	OK	
	X	3.34	14.63	2.48	-25.7%		
	R	0.11	0.12	0.03	1.6%		



I(A)	0	1.5	3	4.5	6	7.5	9	10.5	
L(μH)	3.320	3.22	3.120	3.02	2.920	2.82	2.720	2.62	
ΔT(°C)	0	2.2	6.7	11.8	18.9	27.4	36.7		

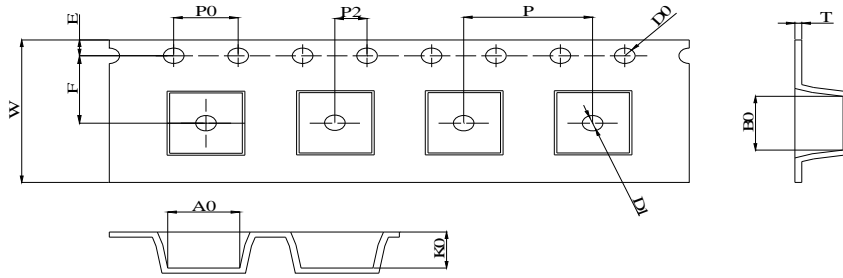
CUSTOMER		MODEL NO.	MS0840-3R3M	REVISION	A/0
FILE NO.		PART NO.		DATE	2020-8-31
<b>11.可靠性Reliability</b>					
项目Item	规格与需求 Specification and Requirement	测试方法Test Method			
可焊性 Solder ability test	沾锡面积不得小于95%上锡面 Terminals area must have 95% min solder coverage	上锡升温曲线Solder heat proof: (1) 预热: 160±10℃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			

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12、包装 Packaging

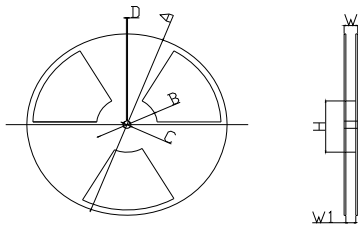
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



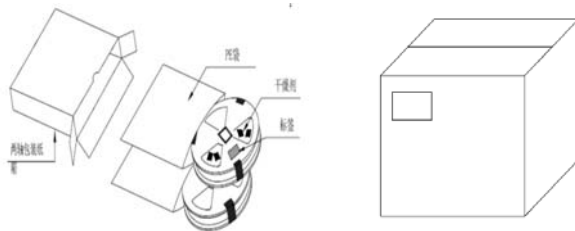
W	A0	B0	K0	P	F	E	D0	P0	T
16.00 ±0.30	9.5 ±0.10	8.5 ±0.10	4.3 ±0.10	12 ±0.10	11.5 ±0.1	1.75 ±0.10	1.50 ±0.10	4.0 ±0.10	0.35 ±0.05

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	30.4 Max
W1	24.4 ± 1.0

12.1.3 外箱尺寸 Carton dimensions



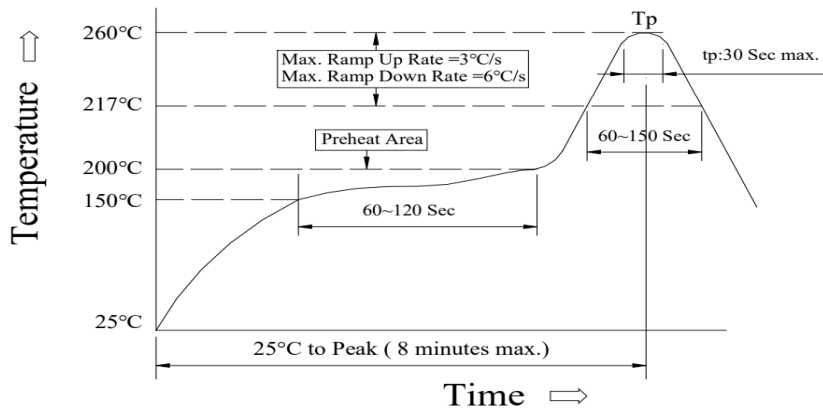
项目	数量(PCS)
1 卷轴	1000
1 内箱	3000
1 外箱	9000

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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.



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