COILMX

SPECIFICATION FOR APPROVAL

产品规格承认书

Unibody Inductor

一体成型功率电感

CUSTOMER.	
MODEL NO.	MSM252012系列
CUSTOMER'S PART NO.	
LILE NO.	
DATE.	2025.06.19
REVISION.	A/0

CUSTOMER APPROVE		
DATE:		
DRAWING		
DRAWN BY	CHECK BY	APPROVAL BY
林思思	白峰	曾伟
DATE: 2025.06.19		

COILMX
新能源光储充电子磁性元器件制造商

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CUSTOMER		MODEL NO.	MSM252012系列	REVISION	A/0
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REVISIONS

REW	PROJECT CHANGE	DESCRIPTION	Date

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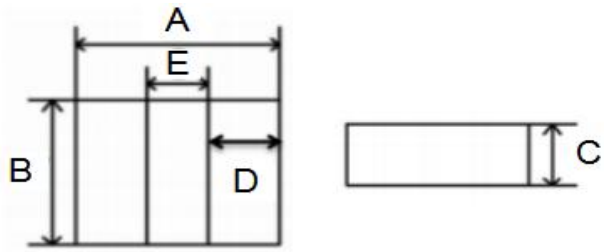
1.PRODUCT DIMENSION UNIT:mm



A	2.5±0.2
B	2.0±0.2
C	1.2Max
D	0.85±0.2
E	0.8±0.2

2.ELECTRICAL REQUIREMENTS

PARAMETER	Inductance L(uH)	DCR (mΩ)		Isat (A)	Irms (A)
	±20 %, 1MHz, 1V	TYP.	MAX.	MAX.	MAX.
MSM252012-R10M	0.10	6	10	12.50	10.50
MSM252012-R15M	0.15	7	11	12.00	10.00
MSM252012-R22M	0.22	9	14	9.00	7.60
MSM252012-R24M	0.24	10	15	8.80	7.50
MSM252012-R33M	0.33	11	17	7.80	6.40
MSM252012-R47M	0.47	13	19	7.00	6.00
MSM252012-R68M	0.68	17	23	6.00	5.50
MSM252012-R82M	0.82	19	24	5.80	5.30
MSM252012-1R0M	1.00	35	42	5.00	3.60
MSM252012-1R2M	1.20	40	45	4.10	3.40
MSM252012-1R5M	1.50	44	50	4.10	3.20
MSM252012-2R2M	2.20	55	65	3.30	2.70
MSM252012-3R3M	3.30	80	97	2.70	1.80
MSM252012-4R7M	4.70	150	170	2.10	1.50
MSM252012-6R8M	6.80	245	270	1.70	1.40
MSM252012-100M	10.00	330	400	1.45	1.05
MSM252012-220M	22.00	740	800	1.00	1.10

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

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4.SPECIAL REQUEST

(1)NO Marking on top of the body.

5.PRODUCT IDENTIFICATION

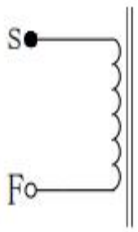
XXX XXXXXX - XXX X X

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

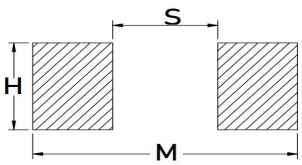
(1)ROHS compliant.

(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	2.1
S	0.7
M	2.6

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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 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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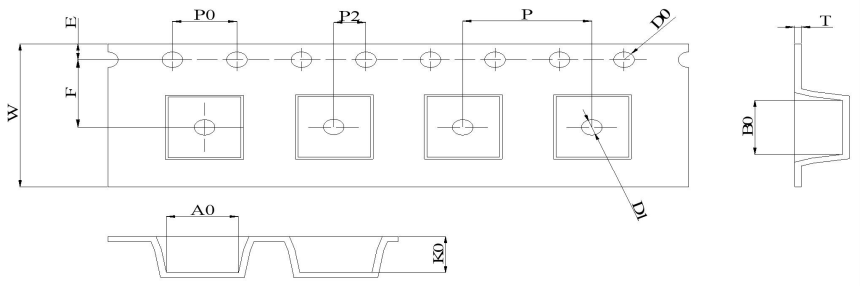
12、包装 Packaging

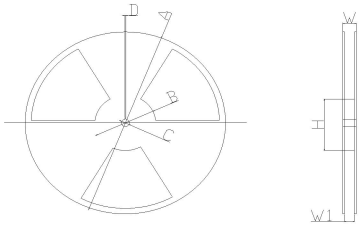
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



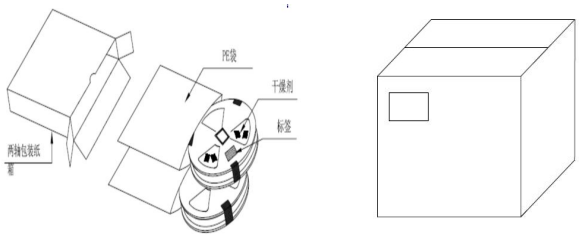
W	A0	B0	K0	P	F	E	D0	P0	T
8.0 ±0.30	2.45 ±0.10	2.80 ±0.10	1.35 ±0.05	4.0 ±0.10	3.5 ±0.1	1.75 ±0.10	1.50 ±0.10	4.0 ±0.10	0.25 ±0.05

12.1.2 卷轴尺寸 Reel dimensions



项目	尺寸(mm)
A	180.0 ± 2.0
B	60.0 ± 1.0
C	13.0 ± 1.0
D	2.0± 0.2
W	14.4 Max
W1	8.4 ± 1.0

12.1.3 外箱尺寸Carton dimensions



项目	数量(PCS)
1卷轴	3000
1内箱	30000
1外箱	120000

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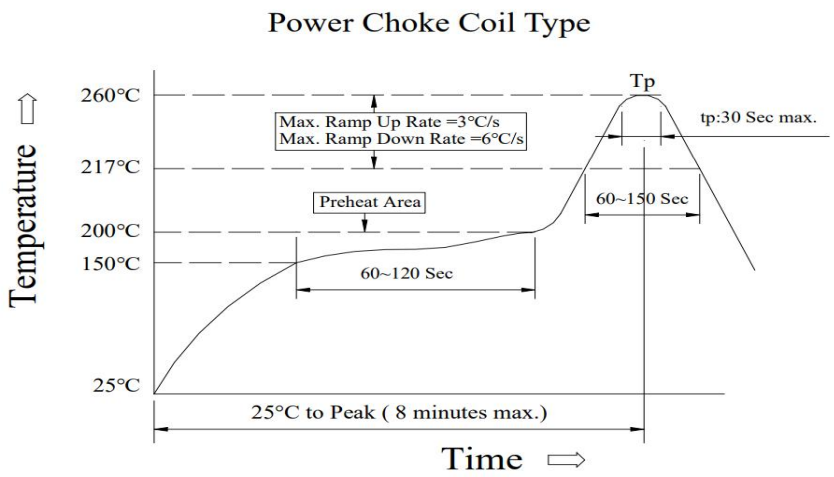
Reflow curve

※ 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.