COILMX

SPECIFICATION FOR APPROVAL

产品规格承认书

Unibody Inductor

一体成型功率电感

CUSTOMER.	
MODEL NO.	MS1770-220M
CUSTOMER'S PART NO.	
LILE NO.	
DATE.	2019-10-8
REVISION.	A/0

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

深圳市迈翔科技有限公司
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IATF16949 / ISO9001 / ISO14000

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CUSTOMER		MODEL NO.	MS1770-220M	REVISION	A/0
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REVISIONS

REW	PROJECT CHANGE	DESCRIPTION	Date

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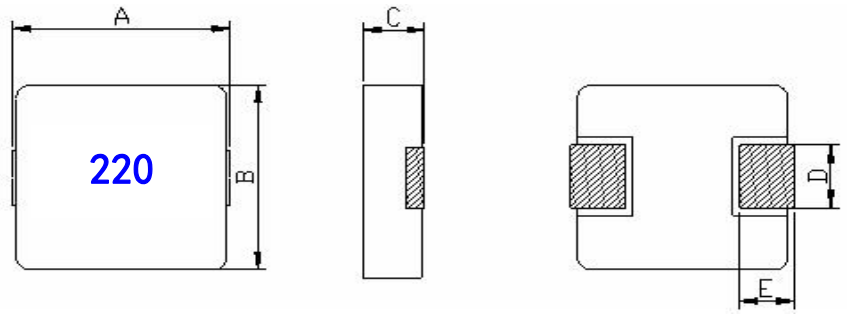
1.PRODUCT DIMENSION — UNIT:mm



A	18.7MAX
B	17.3MAX
C	7.0 Max
D	12.0±0.5
E	2.5±0.5

2.ELECTRICAL REQUIREMENTS

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L(uH)	22.0μH±20%	100KHz/1.0V	MICROTEST 6377
DCR(mΩ)	24mΩMAX	At 25℃	TH2512A
I sat(A)	12A TYP L0A*70%	100KHz/1.0V	MICROTEST 6377+6220
I rms(A)	10A 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 220 on top of the body.

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5.PRODUCT IDENTIFICATION

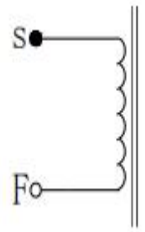
XX XXXX - XXX X X

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

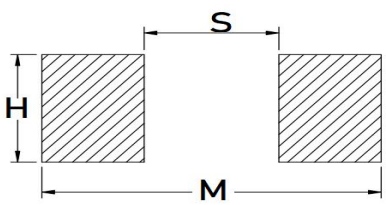
(1)ROHS compliant.

(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	12.8
S	10
M	18.7

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CUSTOMER			MODEL NO.		MS1770-220M		REVISION		A/0	
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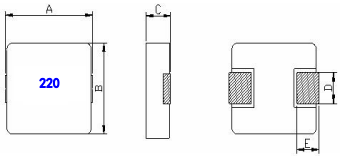
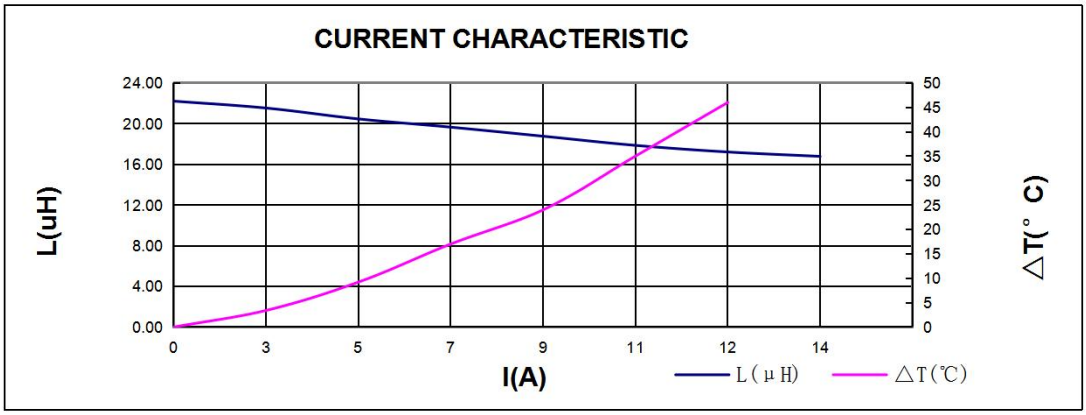
SORT	ITEM	A	B	C	D	E				
PRODUCT & DIMENSION	SPEC	18.7MAX	17.3MAX	7.0 Max	12.0±0.5	2.5±0.5				
	1	18.39	17.06	6.95	11.80	2.53				
	2	18.40	17.05	6.92	11.81	2.50				
	3	18.40	17.09	6.89	11.82	2.52				
	4	18.40	17.03	6.91	11.80	2.51				
	5	18.38	17.08	6.92	11.80	2.50				
	X	18.39	17.06	6.92	11.81	2.51				
	R	0.02	0.06	0.06	0.02	0.03				

ELECTRICAL & REQUIREMENTS	ITEM	L(μH)	DCR (mΩ)	I sat(A)	DC BIAS	Irms	SHAPE:
	SPEC	22.0μH±20%	24mΩMAX	12A TYP L0A*70%		10A TYP △T≤40℃	
	1	22.240	19.580	16.480	-25.9%	OK	
	2	23.410	19.810	17.510	-25.2%	OK	
	3	21.640	19.790	16.960	-21.6%	OK	
	4	21.780	19.660	16.960	-22.1%	OK	
	5	21.200	19.750	16.750	-21.0%	OK	
	X	22.05	19.72	16.93	-23.2%		
	R	2.21	0.23	1.03	4.9%		





I(A)	0	3	5	7	9	11	12	14	
L(μH)	22.210	21.53	20.46	19.65	18.76	17.86	17.21	16.78	
△T(℃)	0	3.4	9.2	17	24	35	46		

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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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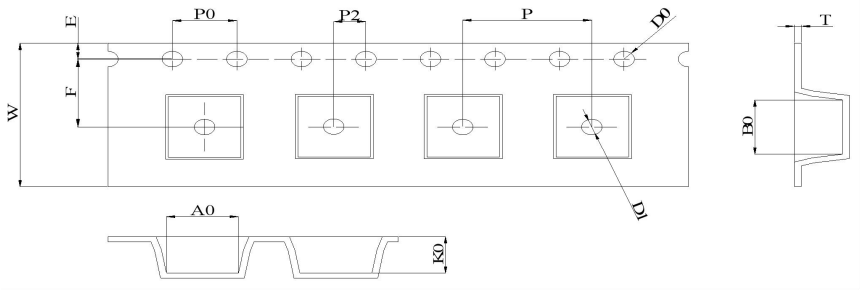
12、包装 Packaging

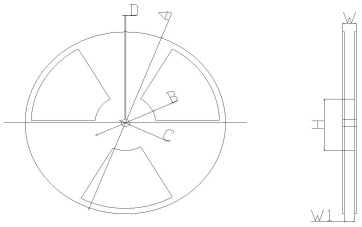
12.1、尺寸 Dimensions

12.1.1 包装料带尺寸 Tape packaging dimensions



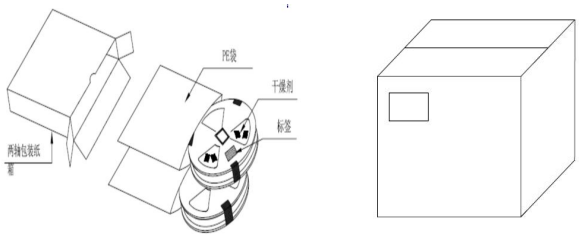
W	A0	B0	K0	P	F	E	D0	P0	T
32 ±0.30	17 ±0.15	17 ±0.15	7.4 ±0.10	23 ±0.10	14.25 ±0.1	1.75 ±0.10	1.50 ±0.10	4.0 ±0.10	0.35 ±0.05

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	35.0 Max
W1	33.0 ± 1.0

12.1.3 外箱尺寸Carton dimensions



项目	数量(PCS)
1卷轴	300
1内箱	900
1外箱	4500

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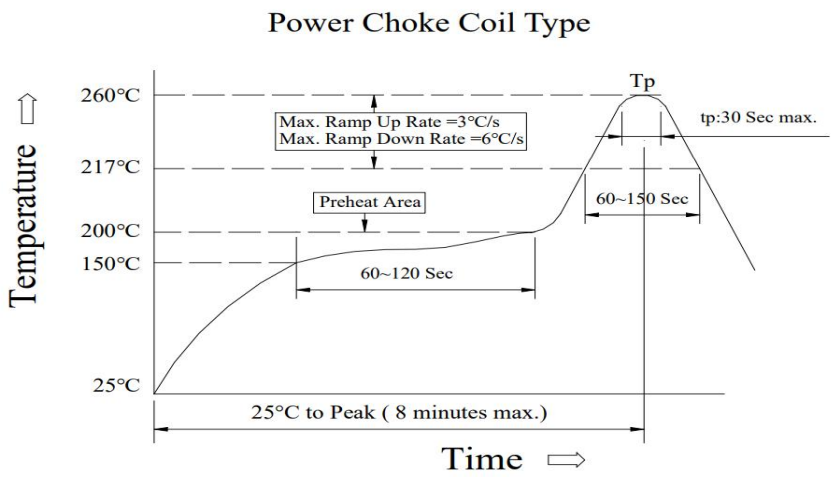
Reflow curve

※ 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.

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