

CUSTOMER: \_\_\_\_\_

DATE: 2015-10-19

## APPROVAL SPECIFICATION

PRODUCT NAME: \_\_\_\_\_

YOUR PART NO. : \_\_\_\_\_

OUR PART NO. : MGRC2012M900T-2-LF

VERSION: V1.0

RECEPTION THE SPECIFICATION HAS BEEN ACCEPTED.  DATE: _____  COMPANY: _____		
CFMD	CHKD	RCVD

### MANUFACTURING NAME

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### Component SPEC Version Record

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
V1.0	2014.12.04	New released	/	Charles

## 1. 适用范围 Scope

本纳入仕様书适用于 MGRC 系列共模扼流圈。

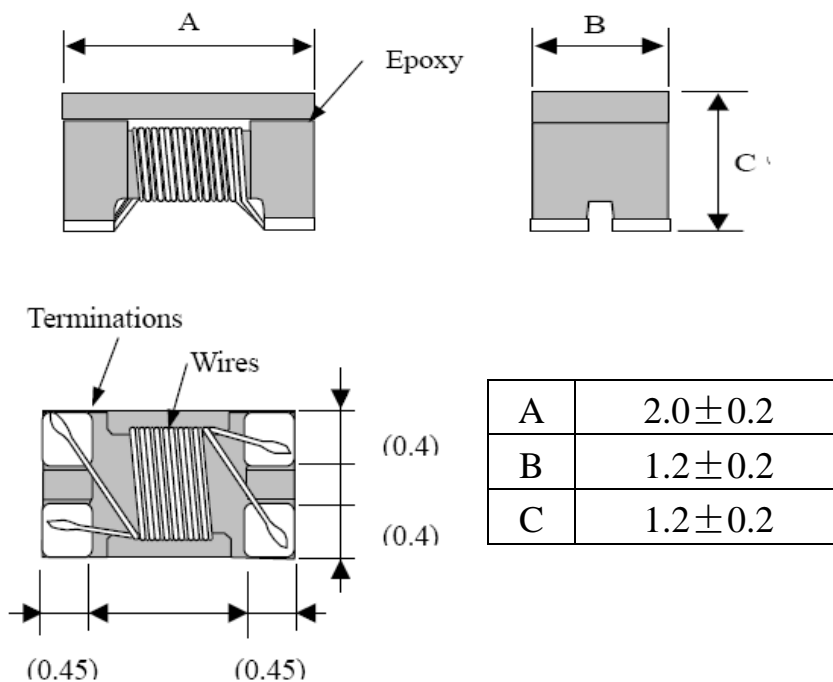
This specification applies to the MGRC series of Common Mode Choke Coil.

## 2 品名构成 Product Identification

MGRC      2012      M      900      T      -      2      -      LF  
①            ②            ③            ④            ⑤            ⑥            ⑦

- ① 系列名称 Series name
- ② 产品尺寸 Dimensions L×W: (2012=2.0×1.2 mm)
- ③ 材料编码 Material code
- ④ 阻抗 Impedance: (900=90×10<sup>0</sup>=90Ω)
- ⑤ 包装方式 Packing Style: (T: Taping 编带盘装            B: Bulk 散装)
- ⑥ 信号线数目 Number of signal lines
- ⑦ 环保标示 Lead Free

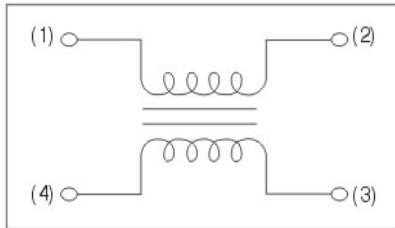
## 3 形状、尺寸 Appearance, Dimensions



### 3.2 Material List

No.	Item	Material
1	Core	Ni-Zn Ferrite
2	Solder	Sn-0.7Cu
3	Wire	Copper Wire P180-G1, $\phi$ 0.045mm

### 4 等效电路 Electrical Schematic



### 5 测试条件 Testing Conditions

除非另有规定，否则在以下条件下测试 <Unless otherwise specified>

温度 Temperature : Ordinary Temperature (5 to 35°C)

湿度 Humidity : Ordinary Humidity (25 to 85% RH)

当对测量结果有疑问时<In case of doubt>

温度 Temperature : 20±2°C

湿度 Humidity : 60 to 75% RH

大气压强 Atmospheric Pressure : 86 to 106 kPa

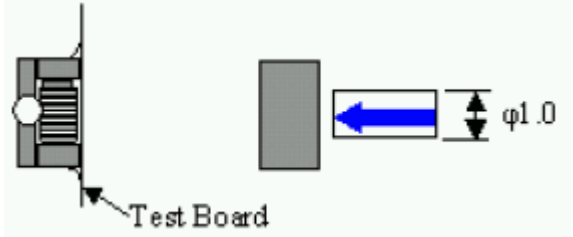
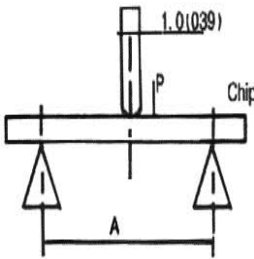
### 6 标称值 Rating

使用温度范围操作温度范围 Operating Temperature Range : -25 to +85°C

保存条件 Storage condition : 温度 Temperature 20 ~25°C, 相对湿度 Relative humidity 40%~60%

Part No.	Common mode Impedance ( $\Omega$ ) /100MHz	IR (mA) /max	RDC( $\Omega$ ) /max	Rated Voltage(V) /max
MGRC2012M900T-2-LF	90±25%	370	0.30	50

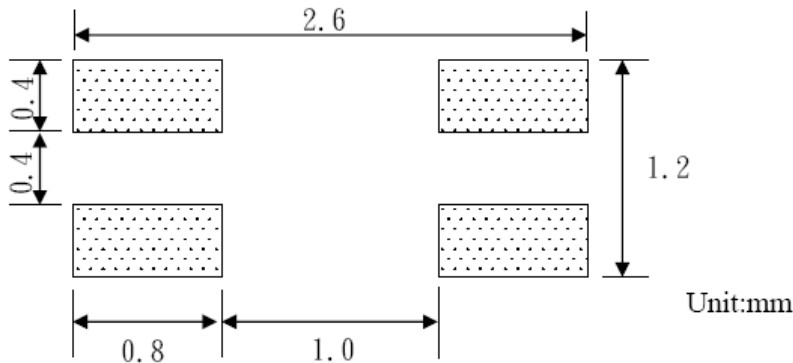
## 7 信赖性试验 Reliable Performance

Operating temperature: -25 to +85°C			Storage temp. and humidity: 20~25°C, 60%RH max.
NO.	Item 项目	Specifications 规范	Test Methods 测试方法
1	Solder-Ability 可焊性	It can be connected on the Recommendation soldering condition. 在建议的焊接条件下可焊接。	Solder 焊锡: 96.5Sn/3.5 Ag 锡 (96.5%) 银 (3.5%) Temperature 焊锡温度: 255°C ± 5°C Flux 助焊剂: rosin 松香 Duration 浸渍时间: 3.5 ± 0.5s
2	Leaching Resistance 耐焊性	More than 75% of termination Should be covered with new solder. 端电极焊锡覆盖率为 75% 以上	Solder 焊锡: 96.5Sn/3.5 Ag 锡 (96.5%) 银 (3.5%) Temperature 焊锡温度: 270°C ± 2°C Flux 助焊剂: rosin 松香 Duration 浸渍时间: 10 ± 0.5s
3	Terminal Strength 端头强度	The terminal and body should be no damage 端头和磁体不应见损伤	Solder a chip to test substrate, and then laterally apply a load 7.5N in the arrow direction 在箭头方向上施加拉力如下: 
4	Bending Strength 弯曲试验	No mechanical damage should be noticed 不应见机械损伤	When the board curve to 2mm(0.079 inches) 当板弯曲挠度达 2mm 时 

NO.	Item 项目	Specifications 规范	Test Methods 测试方法
5	Vibration 振动		频率 Frequency: 10 to 55Hz 振幅 Amplitude: 1.52mm 方向及时间 Direction and time: X, Y and Z directions for 2 hours each.
6	Humidity resistance 耐潮湿		a. 试验条件 Test condition 温度 Temp.: 85±2℃ 湿度 Humidity: 90%~95% 试验时间 Test time: 500±12 h b. 测量条件 Measurement method: 试验后常温常湿环境中放置 (24±2) 小时后测量。 The component should be stabilized at normal condition for (24±2) hours before test.
7	High temperature resistance 耐高温	1.No mechanical damage shall be noticed 外观无可见机械损伤 2.Impedance shall be within ±20% of the initial value 阻抗变化率≤±20%	a. 试验条件 Test condition 施加额定电流 Applied rated current. 温度 Temp.: 85±2℃ 试验时间 Test time: 50±12 h b. 测量条件 Measurement method: 试验后常温常湿环境中放置 (24±2) 小时后测量。 The component should be stabilized at normal condition for (24±2) hours before test.
8	Low temperature resistance 耐低温	3.Insulation resistance 绝缘电阻: > 10(MΩ)DC	a. 试验条件 Test condition 温度 Temp.: -25±2℃ 试验时间 Test time: 48±12 h b. 测量条件 Measurement method: 试验后常温常湿环境中放置 (24±2) 小时后测量。 The component should be stabilized at normal condition for (24±2) hours before test.
9	Thermal shock (Temperature cycle) 热冲击 (温度循环)		a. 试验条件 Test condition 1) 温度 Temp.: -25℃, 时间 time: 30±3min 2) 温度 Temp.: +85℃, 时间 time: 30±3min 3) 5 循环 5 cycles b. 测量条件 Measurement method: 试验后常温常湿环境中放置 (24±2) 小时后测量。 The component should be stabilized at normal condition for (24±2) hours before test.

## 8 焊接条件 Recommended Soldering Conditions

### (1) 推荐焊位 Recommended Footprint

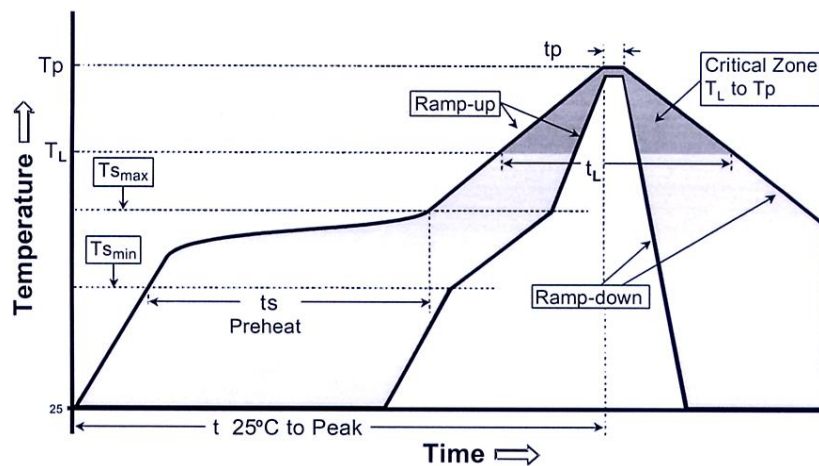


### (2) 回流焊条件 Recommended Reflow soldering conditions

Profile Feature	Lead-Free Assembly
Average Ramp-Up Rate ( T <sub>smax</sub> to T <sub>p</sub> )	3°C /second max.
Preheat <ul style="list-style-type: none"> <li>Temperature Min (T<sub>smin</sub>)</li> <li>Temperature Max (T<sub>smax</sub>)</li> <li>Time ( t<sub>smin</sub> to t<sub>smax</sub> ) min to t<sub>smax</sub>)</li> </ul>	150 °C 200 °C 60-180 seconds
Time maintained above: <ul style="list-style-type: none"> <li>Temperature (T<sub>L</sub>)</li> <li>Time (t<sub>L</sub>)</li> </ul>	217 °C 60-150 seconds
Peak/Classification Temperature (T <sub>p</sub> )	255 °C
Peak/Classification Time (T <sub>p</sub> )	3-4 seconds
Time within 5 °C of actual Peak Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

标准回流焊曲线 Standard soldering profile





(3) 手工焊接 Reworking with soldering iron

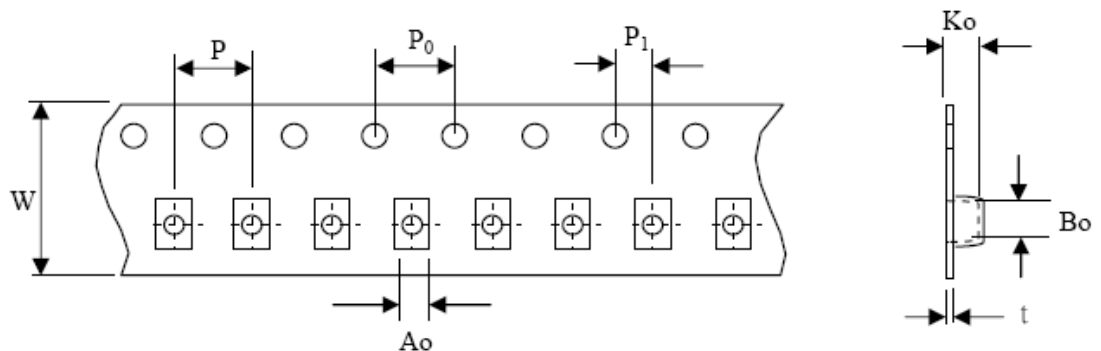
当使用电烙铁进行手工焊接时，以下条件必须严格遵守

The following conditions must be strictly followed when using a soldering iron.

预热 Pre-heating	150°C, 1 minute
尖端温度 Tip temperature	260°C max
输出功率 Soldering iron output	30w max
电烙铁头尖端尺寸 End of soldering iron	φ 1mm max
焊接时间 Soldering time	5 seconds max

9 包装 Packaging

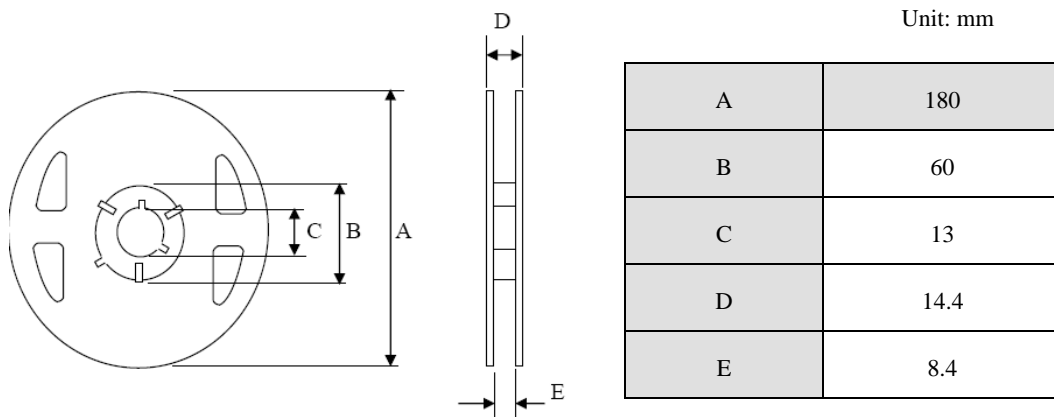
(1) 编带尺寸 Dimensions of Tape:



(Dimensions in mm; Tolerance : ±0.1)

Symbol	W	P	P <sub>0</sub>	P <sub>1</sub>	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	t
Dimension	8	4	4	2	1.5	2.25	1.35	0.24

(2) 带轮尺寸 Dimensions of Reel



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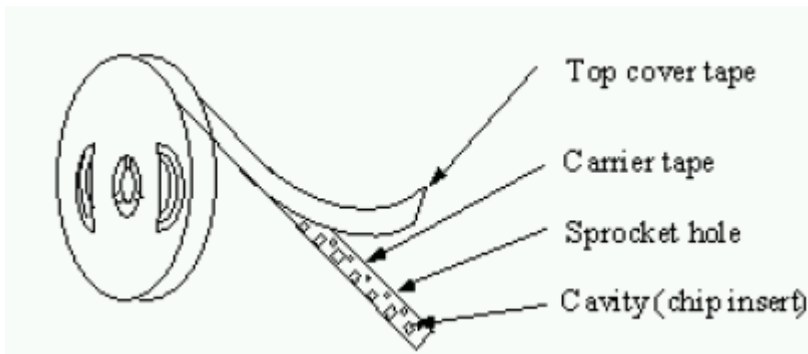
邮编(Postcode): 518110

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(3) 编带抗拉强度 Pulling strength of tapes:

载带 Carrier tape	10N or more (1kgf or more)
上盖带 Cover tape	5N or more (1kgf or more)

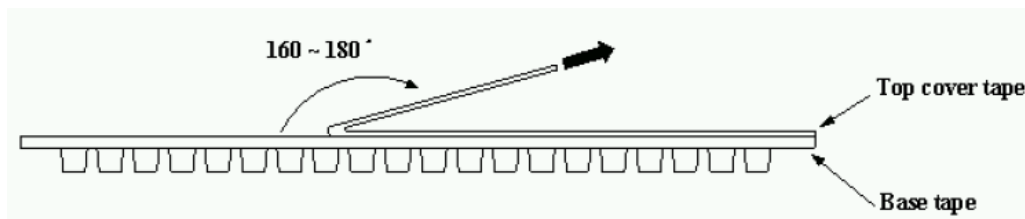
(4) 编带简图及拉伸方向 Taping figure and drawing direction:



编带材料 Tape material:  
基带 Base tape: Polystyrene  
盖带 Cover tape: polyester

(5) 盖带的剥离强度 Peeling strength of cover tape:

盖带 Cover tape	0.05~0.69N
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测试条件 Test condition:

温度 Temperature: 5~35℃  
湿度 Humidity: 45~85%  
大气压力 Atmospheric pressure: 860~1060 hpa.

(6) 包装数量 Packing quantity

Φ180 mm reel T type: 2000pcs/reel