

SPECIFICATION

产品规格书

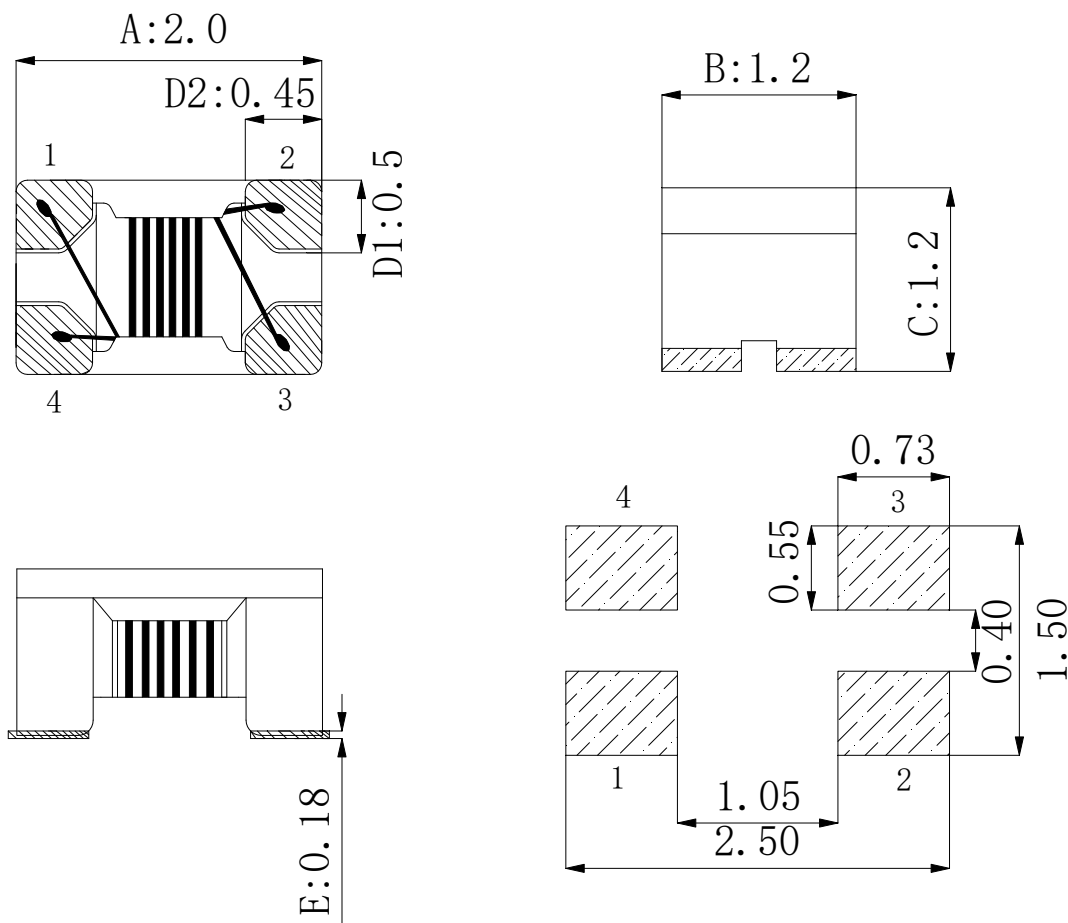
FPE PART NO. :	LC0402SN		
DESCRIPTION:	Wire Wound Type Common Mode Filter		
 广东美信科技股份有限公司 GUANGDONG MISUN TECHNOLOGY CO., LTD TEL: (86)769-86761589 86762589 FAX: (86)769-86761549 广东省东莞市企石镇新南金湖一路 3 号 No.3, Jinhu 1st Road, Xinnan, Qishi Town, Dongguan City, Guangdong Province 为电磁赋能，创工业至美 Enable electromagnetism, Create ultimate beauty		FPE APPROVAL (公司承认章)	
			
		DRAWN BY:	<i>Jingwei XU</i>
		CHECKED BY:	<i>Junmao Zhang</i>
		APPROVAL BY:	<i>Angus Shi</i>

1. 特征 Features

- ◆ High common mode impedance at high frequency Effects excellent noise suppression performance
- ◆ 100% Lead(Pb) & Halogen-Free and RoHS compliant.
- ◆ Operating temperature -40~+125°C
- ◆ FOR LAN Module application



2. 外形尺寸 Dimension



SUGGEST LAYOUT

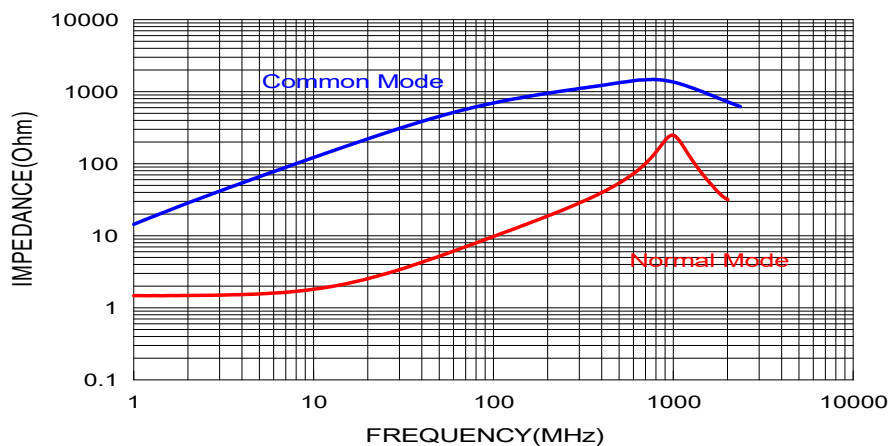
(Steel plate thickness 0.1mm Typ)

Dimensions in mm

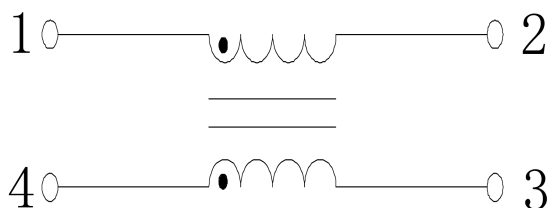
A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
2.0±0.20	1.20±0.20	1.20±0.20	0.50±0.10	0.45±0.10	0.18 REF

3. 电性规格 Specification

Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) Max.	Capacitance (pF)Max	Rated Current (mA)Max.	Rated Volt. (Vdc)Max.	Withstand Volt. (Vdc) Max.	IR (Ω) Min.
LC0402SN	800 $\pm$ 25%	100	0.88	5	300	50	125	10M

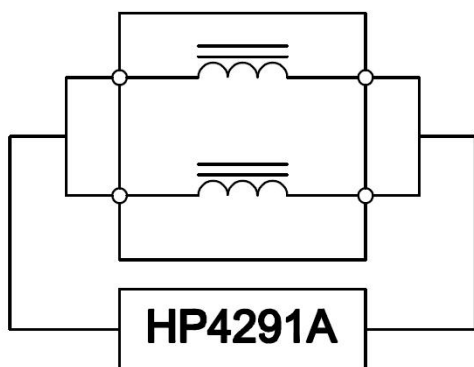


4. 电路图 Schematic Diagram

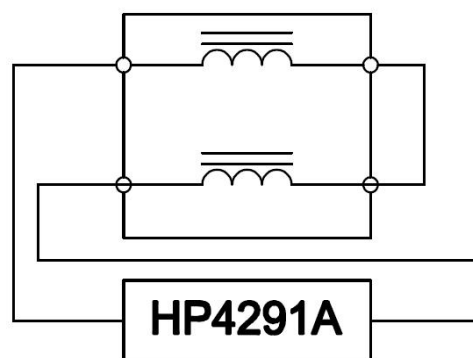


5. 测量电路 Measurement Circuits 2Line

Common mode

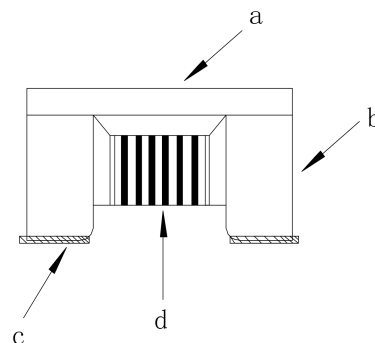


Differential mode



6.材料 Materials

No.	Description	Specification
a.	Upper Plate	Ferrite
b.	Core	Ferrite Core
c.	Termination	Ag/Ni/Sn
d.	Wire	Enameled Copper Wire



7.样品测试数据 Sample Test Data

SAMPLE TEST DATA

PARAMETER:	OCL	OCL	DCR	DCR	CP	CP	CM Impedance	Vdc	IR
UNIT:	uH	uH	Ω	Ω	pF	pF	Ω	V	Ω
CONDITION:	100kHz/0.1 V	100kHz/0.1 V	DC	DC	100kHz/0.1 V	100kHz/0.1 V	100MHz	DC	DC
PIN NO.:	1-2	4-3	1-2	4-3	1-4	2-3	1-2	1-4	1-4
MAX SPEC.:			0.88	0.88	5.0	5.0	1000		
MIN SPEC.:	2.0	2.0					600	125	10M
AVERAGE =	3.2	3.2	0.53	0.53	3.11	3.13	873.91	-	-
STD DEV =	0.0	0.0	0.0	0.0	0.0	0.1	4.4	-	-
MAX =	3.2	3.2	0.53	0.53	3.18	3.19	879.68	-	-
MIN =	3.2	3.1	0.53	0.53	3.04	3.02	866.61	-	-
Max spec for 1.33 Cpk			0.53	0.53	3.3	3.3	891.5	-	-
Min spec for 1.33 Cpk	3.1	3.1					856.3	-	-
Cpk for Max spec			116.98	105.55	12.8	12.3	9.5	-	-
Cpk for Min spec	18.4	16.4					20.7	-	-
DATA -----									
1	3.15	3.19	0.53	0.53	3.06	3.16	868	PASS	PASS
2	3.19	3.18	0.53	0.53	3.08	3.14	880	PASS	PASS
3	3.19	3.15	0.53	0.53	3.10	3.10	880	PASS	PASS
4	3.22	3.20	0.53	0.53	3.16	3.12	876	PASS	PASS
5	3.15	3.22	0.53	0.53	3.15	3.02	877	PASS	PASS
6	3.19	3.17	0.53	0.53	3.04	3.19	869	PASS	PASS
7	3.22	3.20	0.53	0.53	3.18	3.12	876	PASS	PASS
8	3.19	3.20	0.53	0.53	3.10	3.17	873	PASS	PASS
9	3.20	3.15	0.53	0.53	3.18	3.17	867	PASS	PASS
10	3.20	3.21	0.53	0.53	3.09	3.06	874	PASS	PASS

8. 可靠性和试验条件 Reliability and Test Condition

序号	试验项目	参考标准	试验条件	判断依据	结果判定
1	可焊性	J-STD-002	8 小时蒸汽老化, 助焊剂类型: ROL0, 温度: 245℃。时间: 2.5s	1. 试验前后外观无可见物理性异常; 2. 端子表面焊锡覆盖率大于 95%。	PASS
2	低温	IEC-68-2-1	温度: -40℃, 持续时间: 96h。	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
3	高温	IEC-68-2-2	温度: 125℃, 持续时间: 96h。	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
4	振动	MIL-STD-202 method 204	加速度: 10g; 频率: 10~55~10 Hz; 12 个周期: 方向: 3 (X、Y、Z) 个方向, 每个方向 20 分钟 ;	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
5	跌落	IEC68-2-32	高度: 1000mm; 位置: 一角、三棱、六面 (共 10 次)	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
6	推力	GB/T16512 方法 Ua1	对器件侧面均衡施加 10N 作用力, 保持 60s	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
7	盐雾	EIA-364-26B ITEM B	盐雾浓度: 5%± 1%, pH 值: 6.5~7.2; 试验温度: 35℃, 时间: 16h:	1. 试验前后外观无可见物理性异常。 2. 试验后无明显生锈产生等不良现象。	PASS
8	耐焊接热	J-STD-002	回流焊三次, 峰值温度: 260℃。	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
9	湿热	IEC68-2-67	温度: 40℃, 相对湿度: 95%RH, 持续时间: 96h。	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS
10	冷热冲击	IEC68-2-67	低温: -55℃, 高温: 125℃, 持续时间: 15min; 温度转换时间: ≤5min; 循环数: 100	1. 试验前后外观无可见物理性异常; 2. 电性能满足规格书要求。	PASS

9. 焊接和安装 Soldering and Mounting

9-1. Soldering

Mildly activated rosin fluxes are preferred. FPE terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

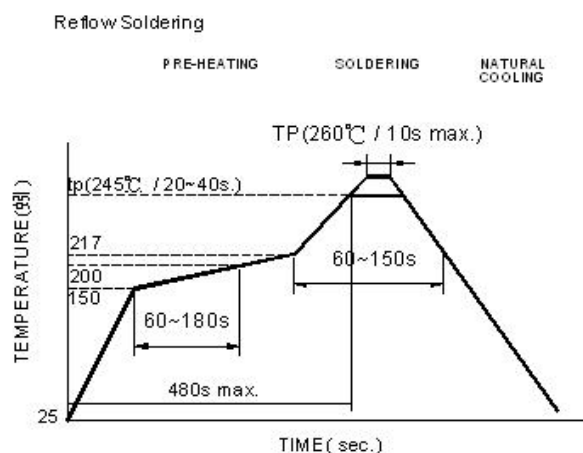
9-1.1 Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

9-1.2 Soldering Iron(Figure 2):

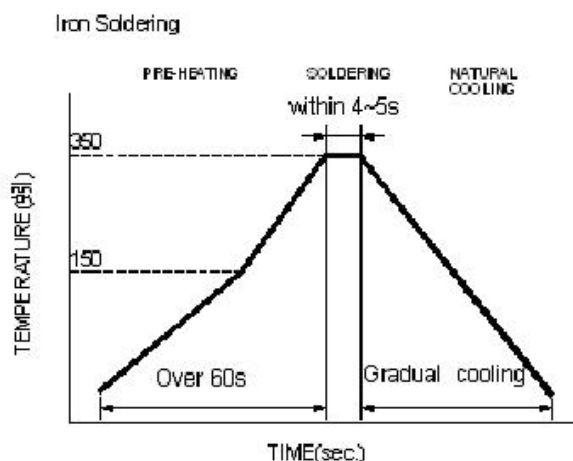
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150°C
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 350°C tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1

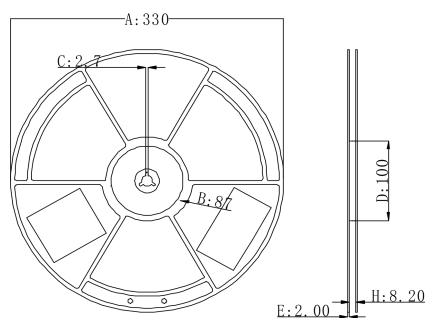


Iron Soldering times: 1 times max.

Fig.2

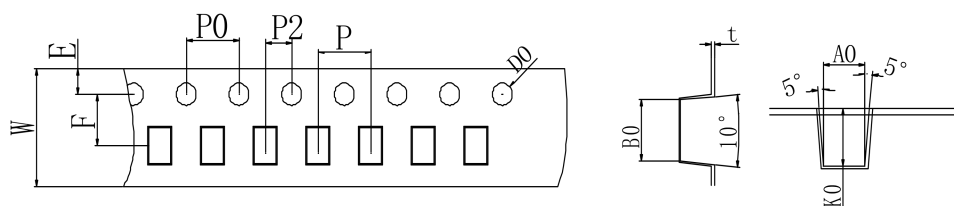
10. 包装信息 Packaging Information

10-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	H(mm)
13"x8mm	330±2	87±1	2.7±0.5	100±1	1.9±0.2	8±0.5

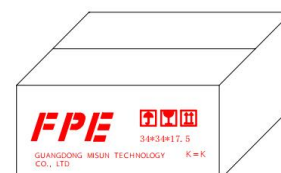
10-2. Tape Dimension / 8mm



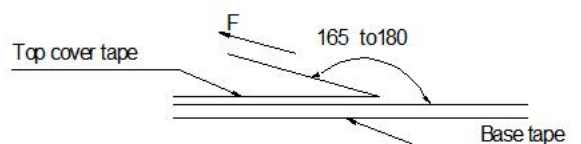
W(mm)	E(mm)	F(mm)	P0(mm)	P2(mm)	P(mm)	DO(mm)	t(mm)	B0(mm)	A0(mm)	K0(mm)
8.00±0.10	1.75±0.10	3.50±0.10	4.00±0.10	2.00±0.10	4.00±0.10	1.50±0.10	0.25±0.05	2.35±0.10	1.50±0.10	1.45±0.10

10-3. Packaging Quantity

Chip/Reel	Carton
10000	100000



10-4. Tearing Off Force



The force for tearing off cover tape is 15 to 85 grams in the arrow direction under the following conditions.

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

·Storage Conditions

To maintain the solderability of terminal electrodes:

1. FPE products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
2. Temperature and humidity conditions: Less than 40°C and 60% RH.
3. Recommended products should be used within 12 months from the time of delivery.
4. The packaging material should be kept where no chlorine or sulfur exists in the air.

·Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.