

SMD 900 MHz Low Pass Ceramic Filter



AFII-LC-0086

Request Samples



Check Inventory



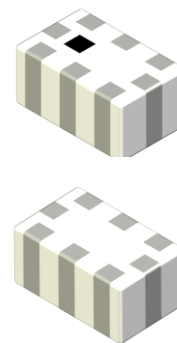
2.0 x 1.25 x 0.95 mm

RoHS Compliant

MSL Level = 1

Description

Engineered for critical Sub-GHz IoT networks, this advanced harmonic rejection filter delivers unparalleled suppression performance for LoRa, Sigfox, and Wi-Fi HaLow applications. Its key feature is an exceptional out-of-band rejection of >53 dB at the 2nd and 3rd harmonics, ensuring strict regulatory compliance and superior spectral purity. Housed in a compact 2.0 x 1.25 x 0.95 mm package, it maintains a low 0.4 dB insertion loss for optimal power efficiency. The 50-ohm, MSL Level 1 compliant component is the ideal solution for integrating between PAs and antennas in smart metering, lighting, and industrial RF modules, guaranteeing clean and reliable long-range communication.



Features

- 2.0 x 1.25 x 0.95 mm in Size
- Low Insertion Loss: 0.4 dB
- Out-of-Band Rejection: > 53 dB (at 2nd & 3rd harmonics)
- 50 Ohms Single-Ended Input & Output
- [RoHS Compliant](#) | [MSL Level 1](#)

Applications

- Sub-GHz LoRa / Sigfox / Wi-Fi HaLow
- Smart Metering & Smart Lighting
- Suppress Harmonics and Improve Spectral Purity Between Power Amplifiers and Antennas
- Antenna Matching & Filtering in RF Modules

Ordering Information

Part Number	Description
AFII-LC-0086	SMD 900 MHz Low Pass Ceramic Filter on Cut Tape
AFII-LC-0086-T	SMD 900 MHz Low Pass Ceramic Filter on Tape & Reel
AFII-LC-0086-EVB	SMD 900 MHz Low Pass Ceramic Filter Evaluation Board

Note: Other options not listed may be available upon request via [Abracon online support](#)



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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (f_0)	-	900	-	MHz	-
Passband	863	-	960	MHz	-
Insertion Loss ⁽¹⁾	-	0.4	0.42	dB	-
VSWR	-	-	1.2	-	-
Relative Attenuation ⁽¹⁾ (Reference level: 0dB)	41	53	-	dB	2 nd harmonics 1800MHz (1726 - 1920 MHz)
	57	63	-		3 rd harmonics 2700MHz (2589 - 2880 MHz)
Amplitude Ripple ⁽¹⁾	-	0.017	0.036	dB	
Group Delay ⁽¹⁾	-	0.67	0.73	ns	
Group Delay Ripple ⁽¹⁾	-	0.03	0.06		
Source Impedance ⁽²⁾ (single ended)	-	50	-	Ω	-
Load Impedance ⁽²⁾ (single ended)	-	50	-	Ω	-
Power Capacity		3		W	

Notes: (1) Typical values are the average values within the corresponding frequency band.

(2) A matching network is unnecessary (refer to the Measurement Circuits section).

Mechanical Specification

Parameters	Specifications
Dimension	2.0 x 1.25 x 0.95 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-10°C ~ +40°C
MSL level	1
RoHS Complaint	Yes

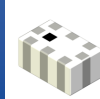


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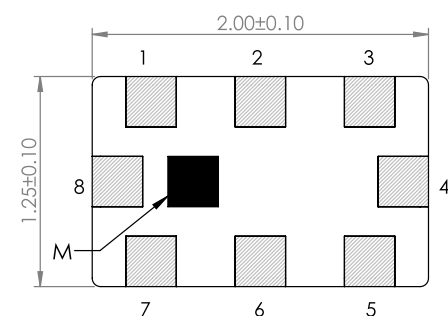


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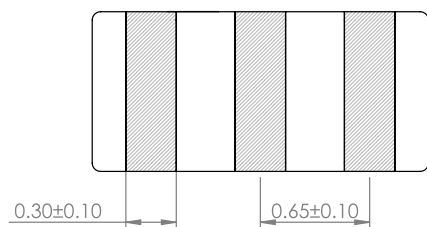


2.0 x 1.25 x 0.95 mm
RoHS Compliant
MSL Level = 1

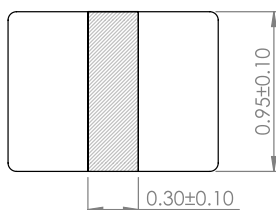
Product Dimensions



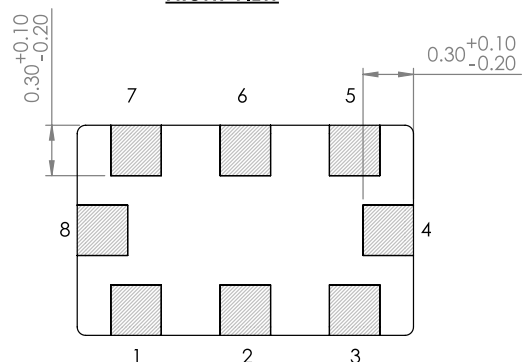
TOP VIEW



FRONT VIEW

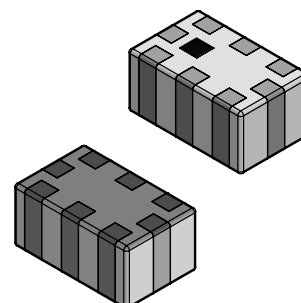
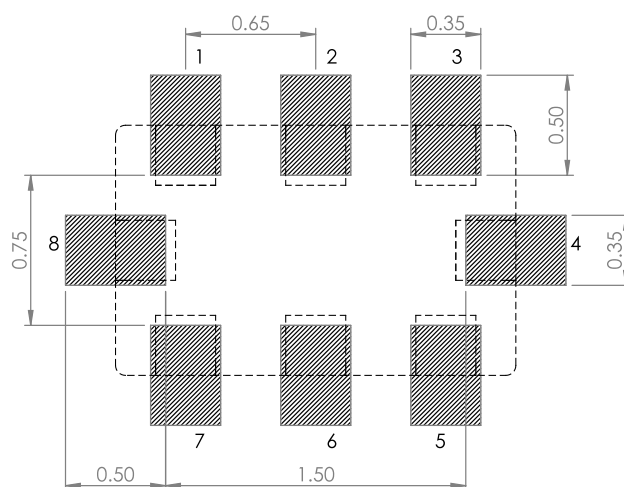


SIDE VIEW



BOTTOM VIEW

RECOMMENDED LAND PATTERN



Pin #	Function
1, 3, 5, 7	GND
2, 6	NC
4, 8	IN/OUT
M	MARK

Unit: mm

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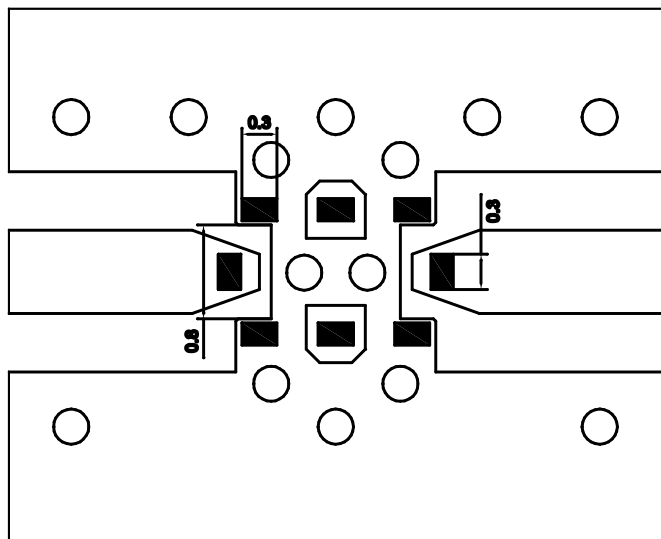


2.0 x 1.25 x 0.95 mm

RoHS Compliant

MSL Level = 1

Recommended Land Pattern



Land



Through-hole(0.28&0.3)

Unit: mm

Please note: The line width should be designed to achieve a 50-ohm characteristic impedance, depending on the PCB material and thickness. For technical assistance, please contact [Abracon online support](#) through our online support platform.

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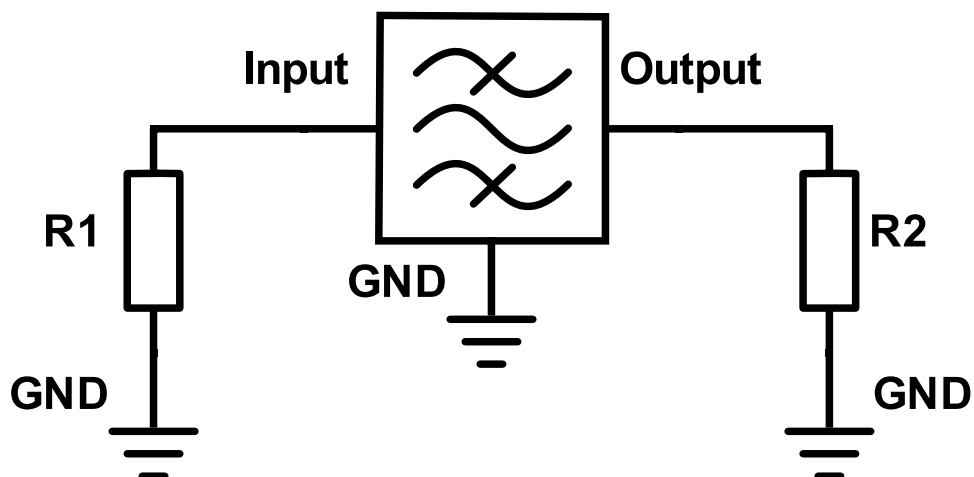


2.0 x 1.25 x 0.95 mm

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Measurement Circuit



Port	Matching Component
Input	R1: 50Ω
Output	R2: 50Ω

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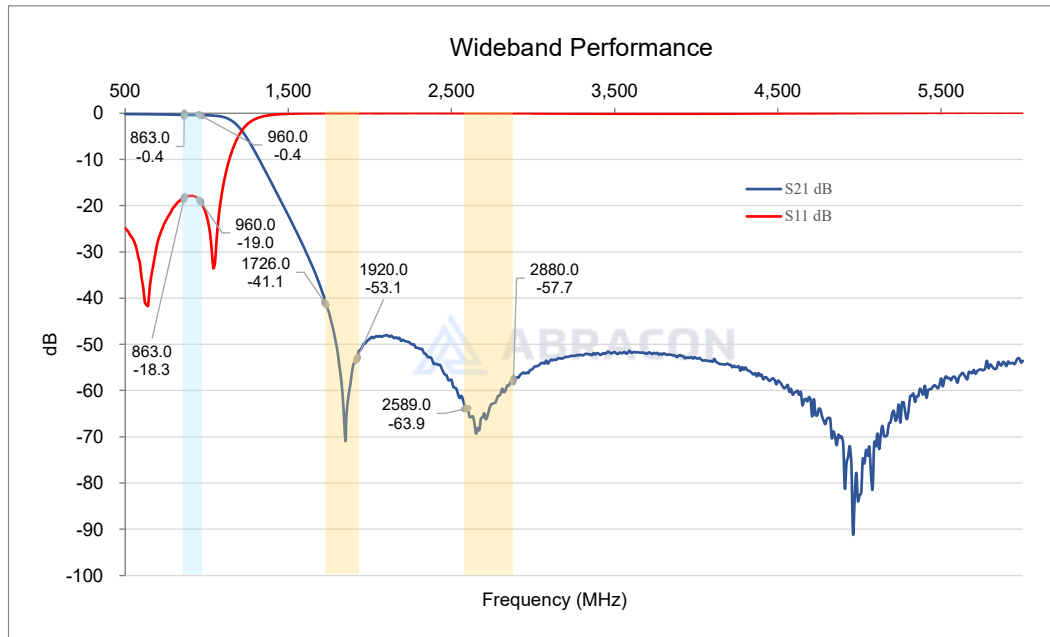


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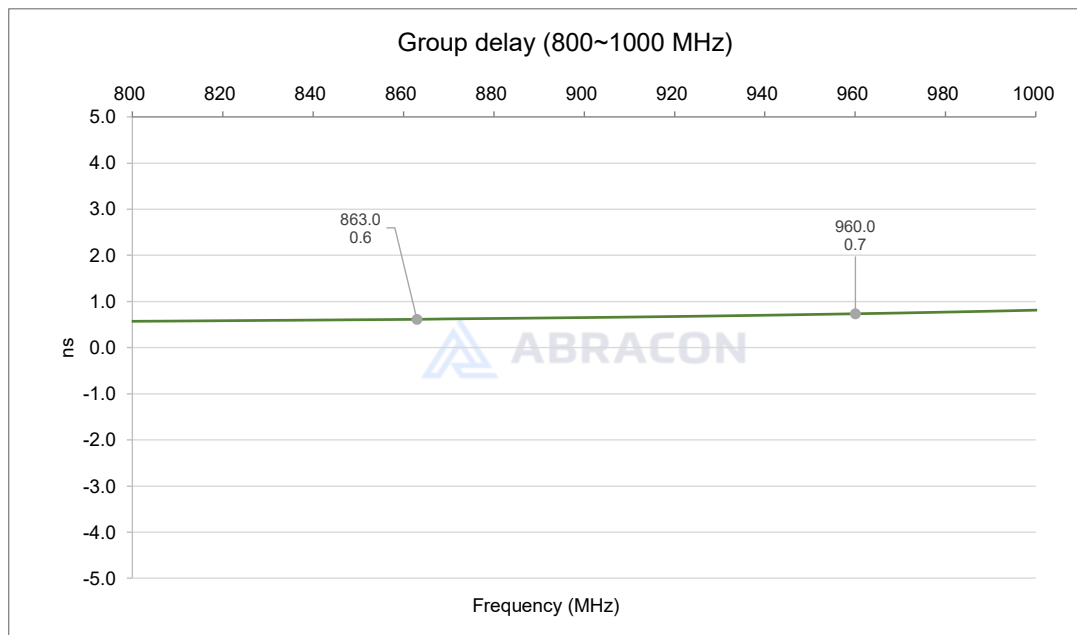
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Frequency Characteristics



Group Delay



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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

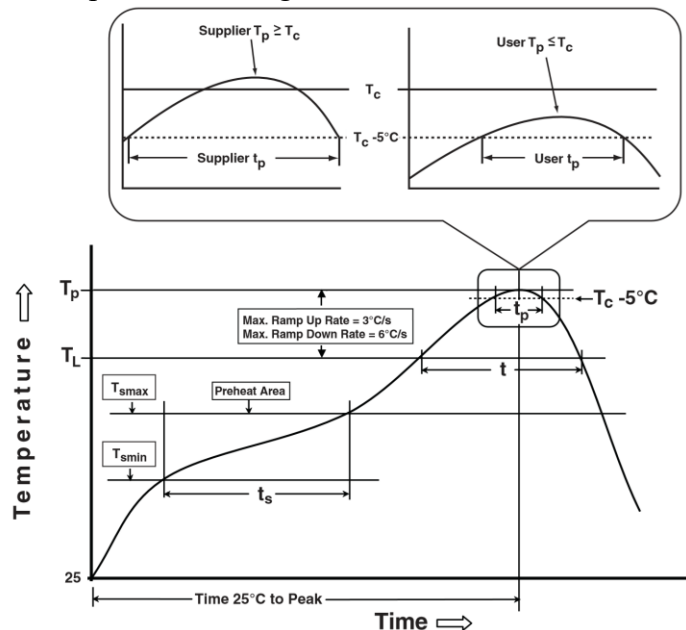


Table 1

SnPb Eutectic Process

Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥ 350
<2.5mm	235°C	220°C
≥ 2.5mm	220°C	220°C

Table 2

Pb-Free Process

Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 – 120 sec.	60 – 90 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at Liquidous (T_L)	60 – 150 sec.	60 – 150 sec.
Peak package body temperature (T_p)*	See Table 1	See Table 2
Time (T_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	10 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.



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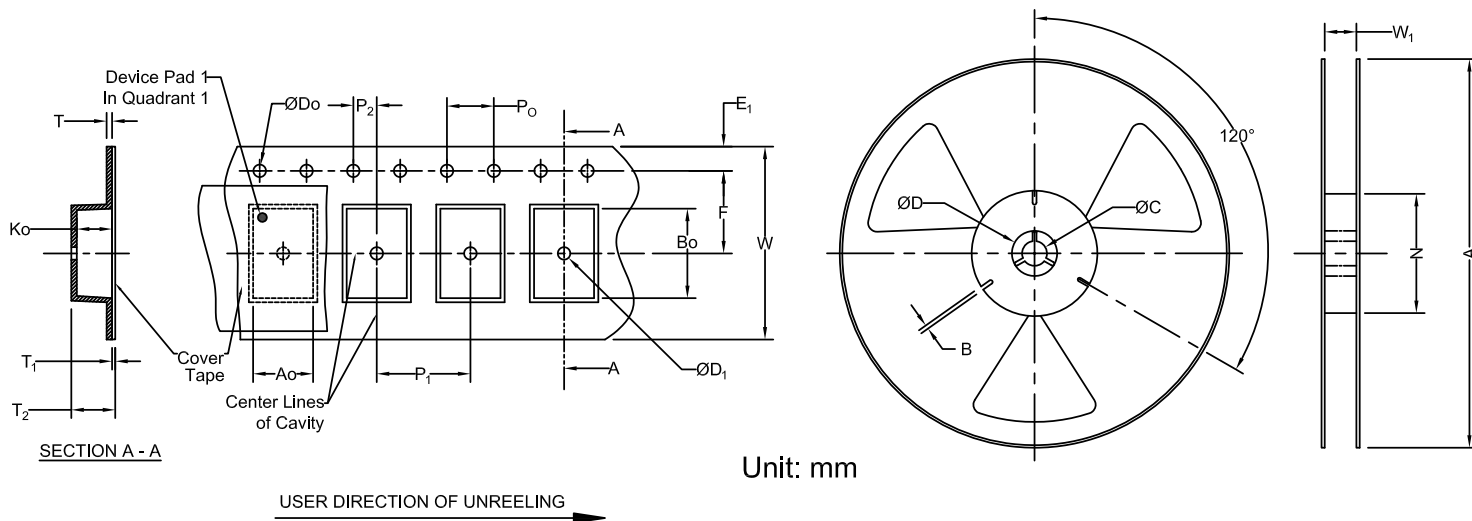
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MSL Level = 1

Packaging

Tape & Reel Dimension



Carrier Tape Specifications (mm)

E1	D0	P0	P2	F	P1	W	A0	B0	K0	Reel Qty
1.75 ± 0.1	1.5 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	3.5 ± 0.05	2.0 ± 0.05	8.0 ± 0.3	1.42 ± 0.10	2.25 ± 0.10	1.14 max	4,000

Reel Specifications (mm)

A	W1	N	C
178 ± 2.0	10.0 ± 1.5	58 ± 2.0	13.5 ± 0.2

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf ('COTS'), which are designed, intended, and validated for use in commercial, industrial, and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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