

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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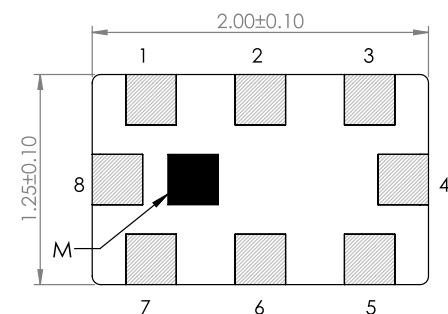


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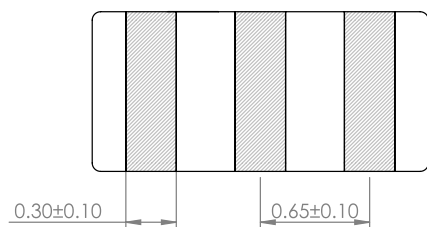


2.0 x 1.25 x 0.95 mm
RoHS Compliant
MSL Level = 1

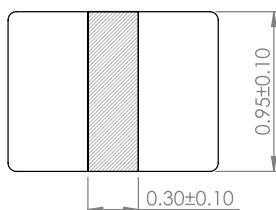
Product Dimensions



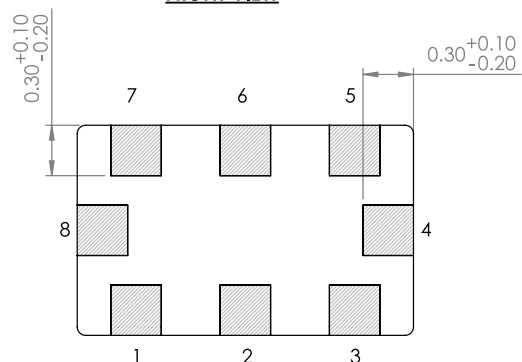
TOP VIEW



FRONT VIEW

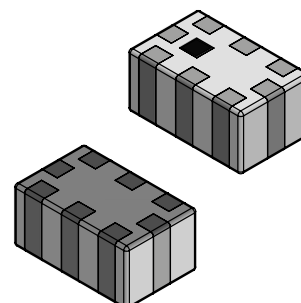
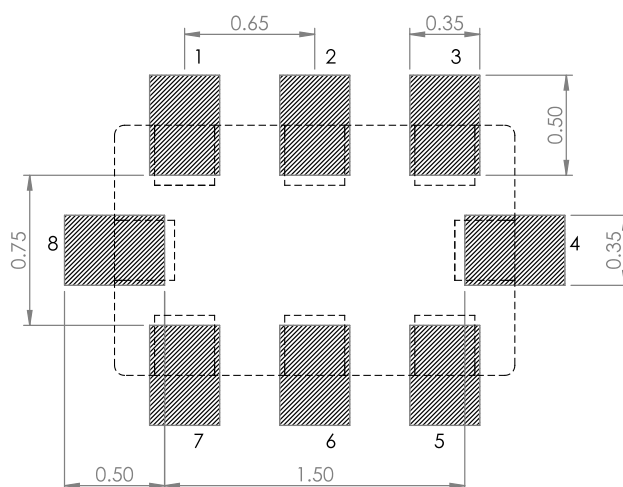


SIDE VIEW



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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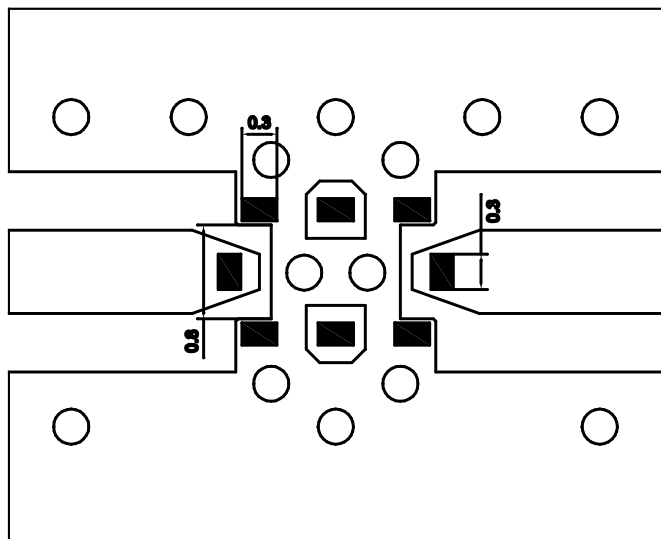


2.0 x 1.25 x 0.95 mm

RoHS Compliant

MSL Level = 1

Recommended Land Pattern



Land



Through-hole(0.2&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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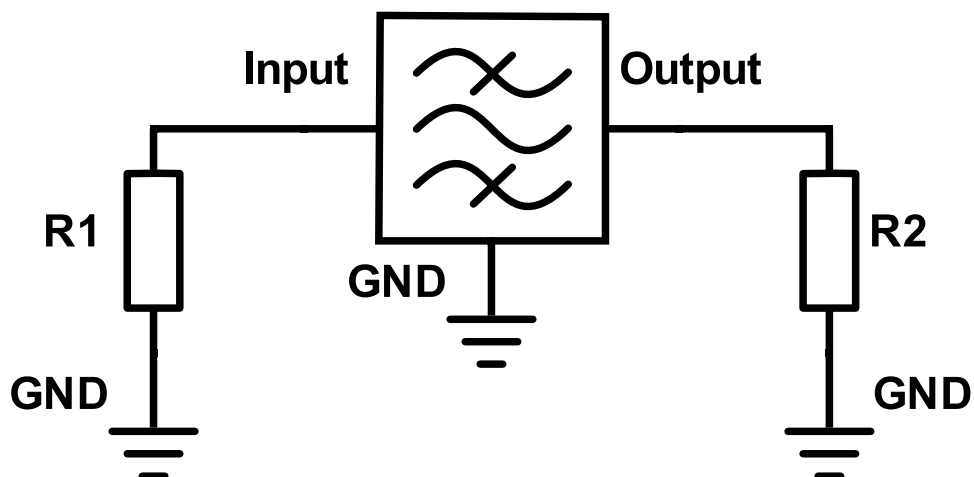


2.0 x 1.25 x 0.95 mm

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Measurement Circuit



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

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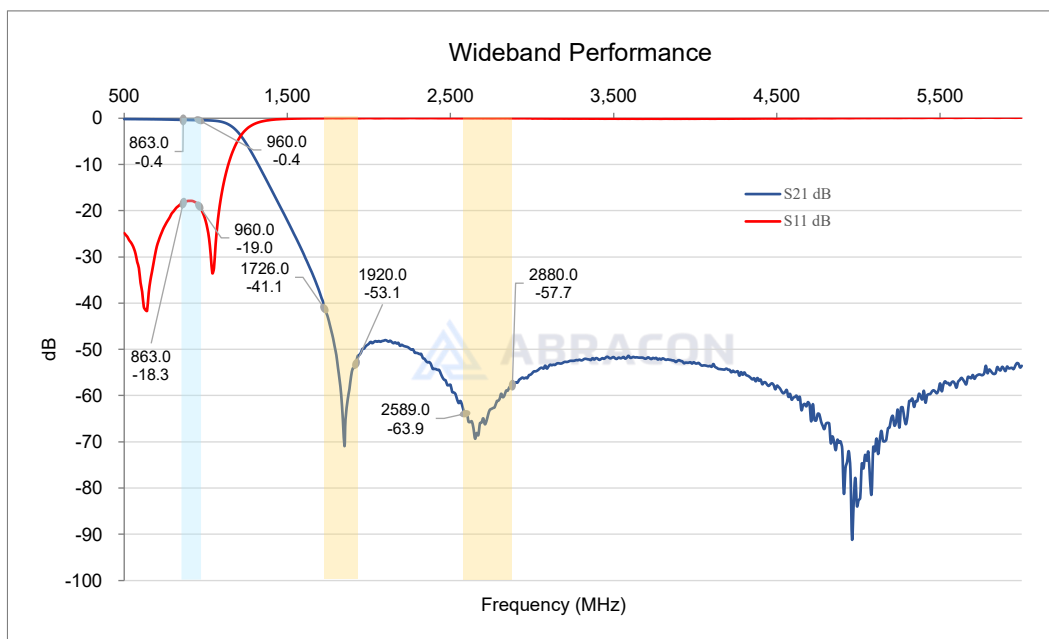


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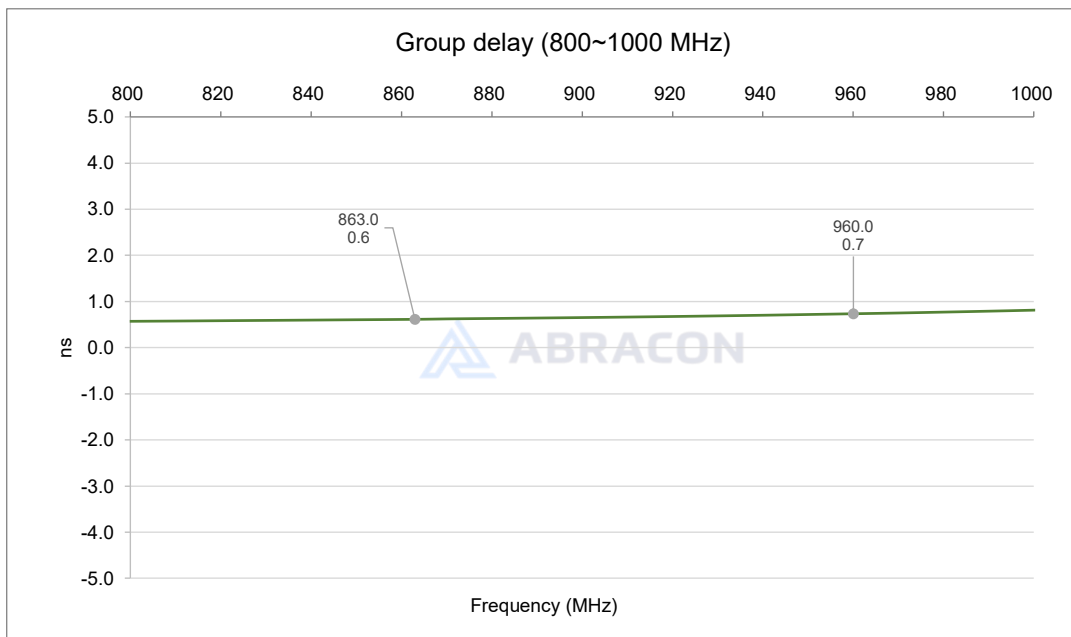
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Frequency Characteristics



Group Delay



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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

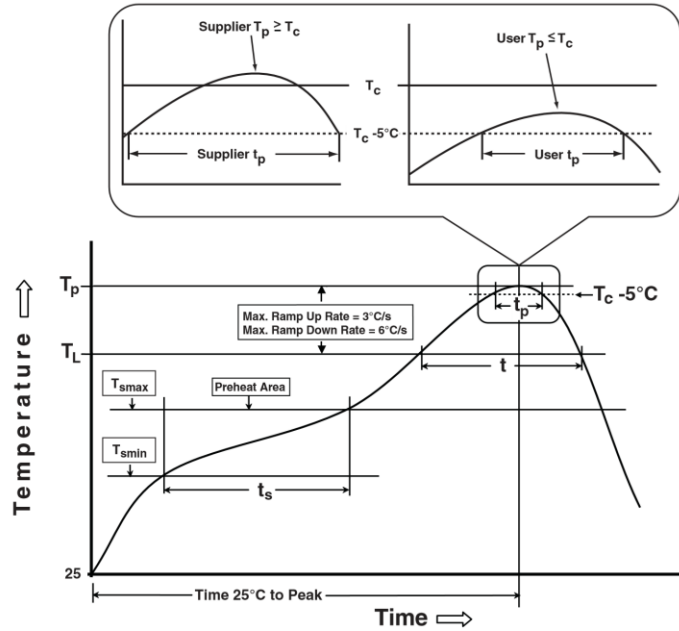


Table 1

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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