

AEC-Q200 SMD 2450MHz Band Pass Ceramic Filter



AFII-LC-0109-Q

Request Samples



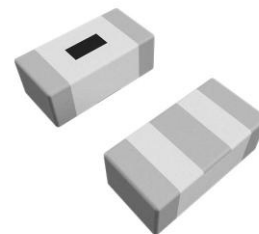
Check Inventory



1.0 x 0.5 x 0.4 mm
RoHS Compliant
MSL Level = 1

Description

This AEC-Q200 qualified band-pass ceramic filter is engineered for 2.45 GHz wireless applications requiring reliable performance in demanding automotive environments. Housed in an ultra-compact 1.0 x 0.5 x 0.4 mm SMD package with 50-ohm single-ended I/O, it delivers low 1.3 dB typical insertion loss for excellent signal integrity. This RoHS-compliant MSL Level 1 component is ideal for Bluetooth®, ZigBee, Thread, Matter, IoT, V2X, keyless entry (RKE/PKE), TPMS, in-vehicle infotainment, and wireless charging modules where robust filtering and space efficiency are essential.



Features

- AEC-Q200 Qualified
- 1.0 x 0.5 x 0.4 mm in Size
- Low Insertion Loss: 1.3 dB Typ.
- 50 Ohms Single-Ended Input & Output
- [RoHS Compliant](#) | [MSL Level 1](#)

Applications

- Bluetooth® / ZigBee® / Thread / Matter
- IoT, Wi-Fi, V2X, Wearables, ISM
- Keyless entry systems (RKE/PKE)
- Tire pressure monitoring systems (TPMS)
- In-vehicle infotainment
- Wireless charging modules

Ordering Information

Part Number	Description
AFII-LC-0109-Q	AEC-Q200 SMD 2450MHz Band Pass Ceramic Filter on Cut Tape
AFII-LC-0109-Q-T	AEC-Q200 SMD 2450MHz Band Pass Ceramic Filter on Tape & Reel

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



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Cave, TX 78738
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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (f_0)	-	2450	-	MHz	-
Passband	2400	-	2500	MHz	-
Insertion Loss	-	1.3	1.5	dB	@25°C
	-	-	1.8	dB	@-40°C ~ +125°C
Amplitude Ripple	-	0.47	0.5	dB	-
VSWR	-	-	2.1	:1	-
Group Delay	-	0.47	-	ns	-
Group Delay Ripple	-	0.01	-		-
Relative Attenuation (Reference level: 0dB)	34.0	34.4	-	dB	800 ~ 960 MHz
	8.0	12.6	-		1710~ 1970 MHz
	40.3	43.9	-		4800 ~ 5000 MHz
	37.3	39.9	-		7200 ~ 7500 MHz
Source Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	-
Load Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	-
Power Capacity	-	500	-	mW	-

Notes: (1) Without Matching Network (Ref. Testing Environment Circuit as shown below)

Mechanical Specification

Parameters	Specifications
Dimension	1.0 x 0.5 x 0.38 mm
Mounting Type	Surface Mount
Additional Resources	Download STEP File, Package Drawing, 3D PDF

Environmental Specification

Parameters	Specifications
Operating & Storage Temperature (Unpackaged Component)	-40°C ~ +125°C
Storage Temperature in Packaging	-10°C ~ +40°C
Packaging Storage Relative Humidity	70% (Max.)
RoHS Complaint	Yes
MSL Level	1



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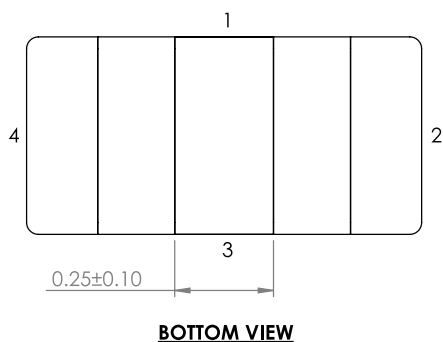
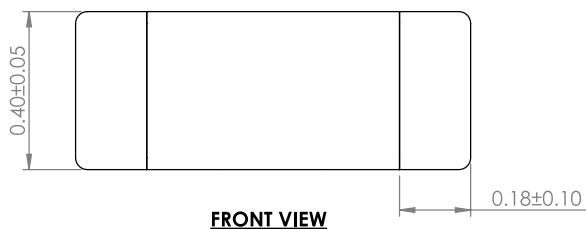
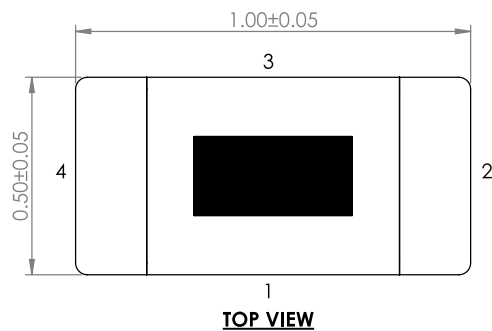


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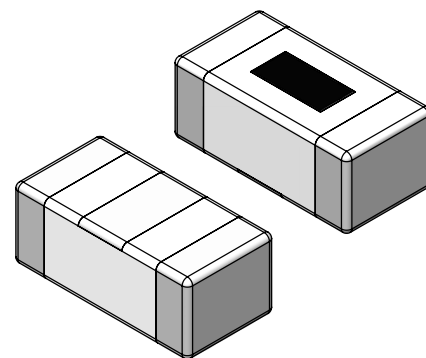
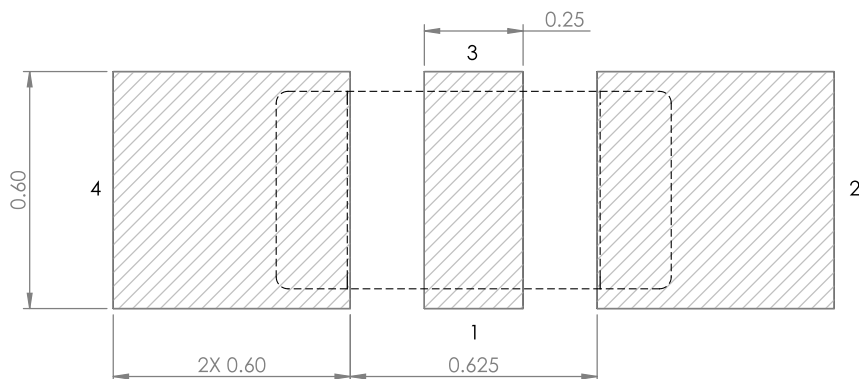


1.0 x 0.5 x 0.4 mm
RoHS Compliant
MSL Level = 1

Product Dimensions



RECOMMENDED LAND PATTERN



Pin #	Function
1	GND
2	Output/Input
3	GND
4	Input/Output

Unit: mm



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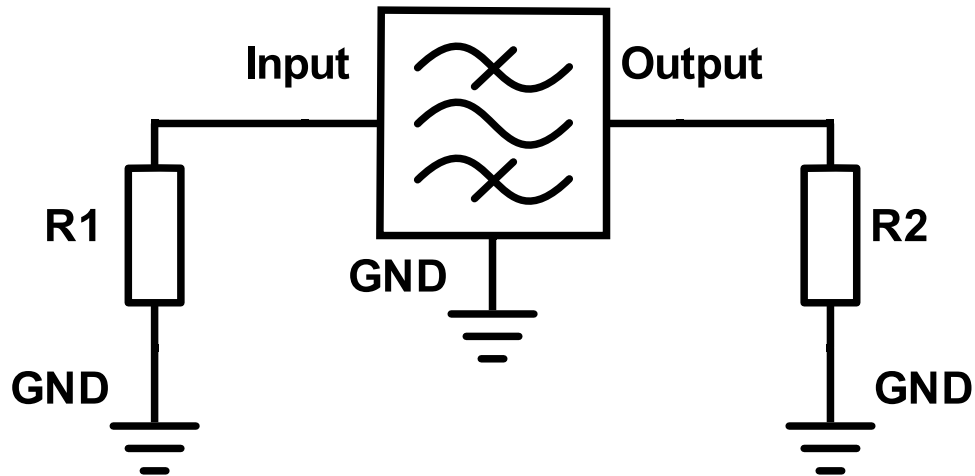


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Measurement Circuit



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

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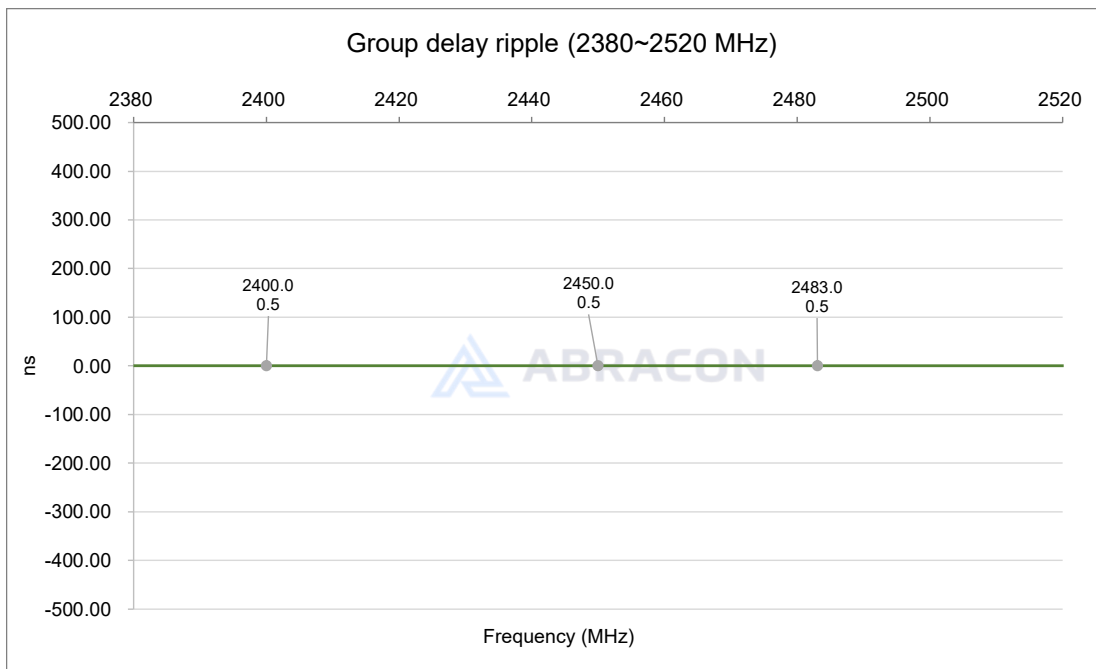
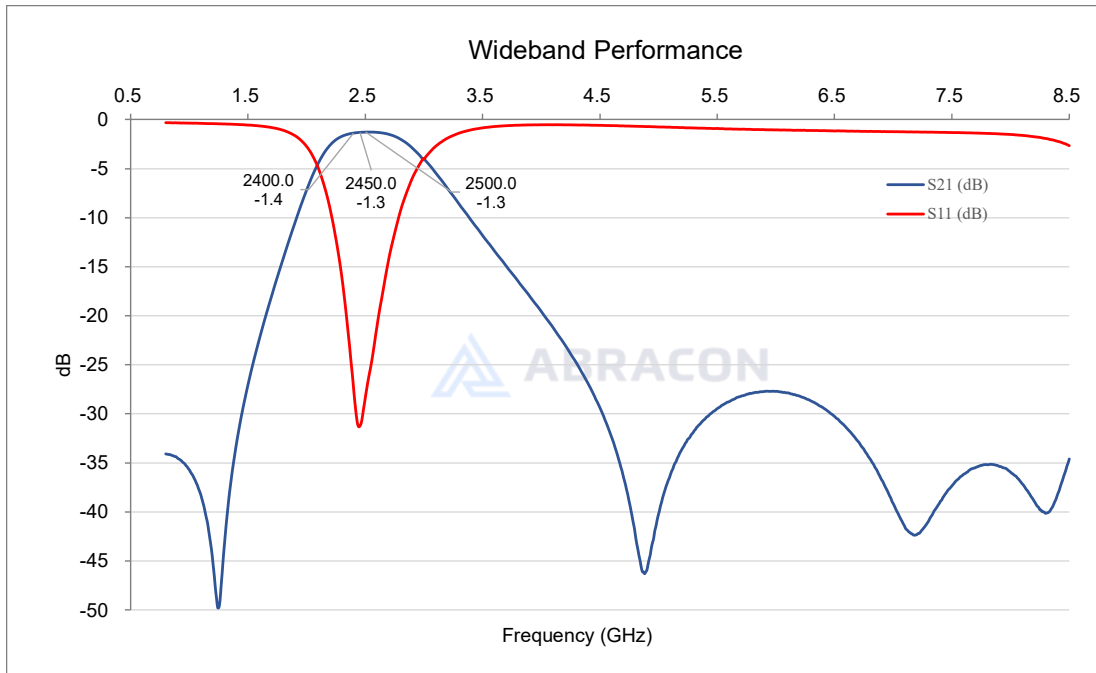


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Frequency Characteristics



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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

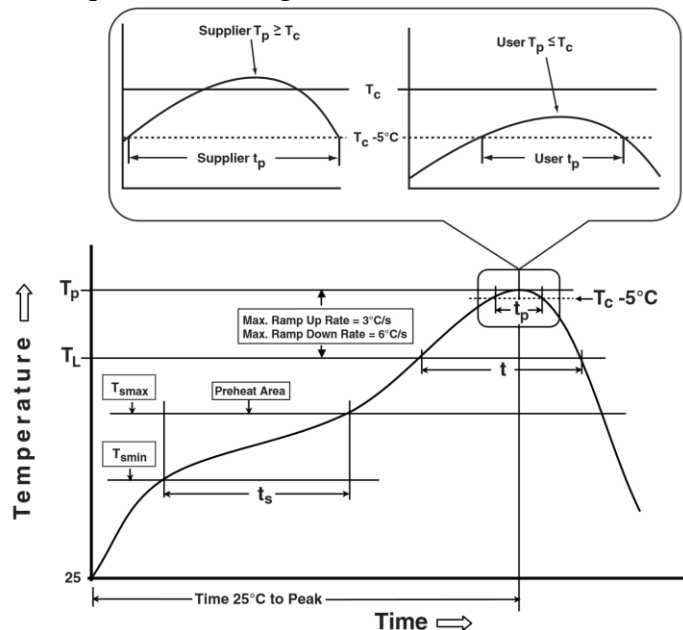


Table 1

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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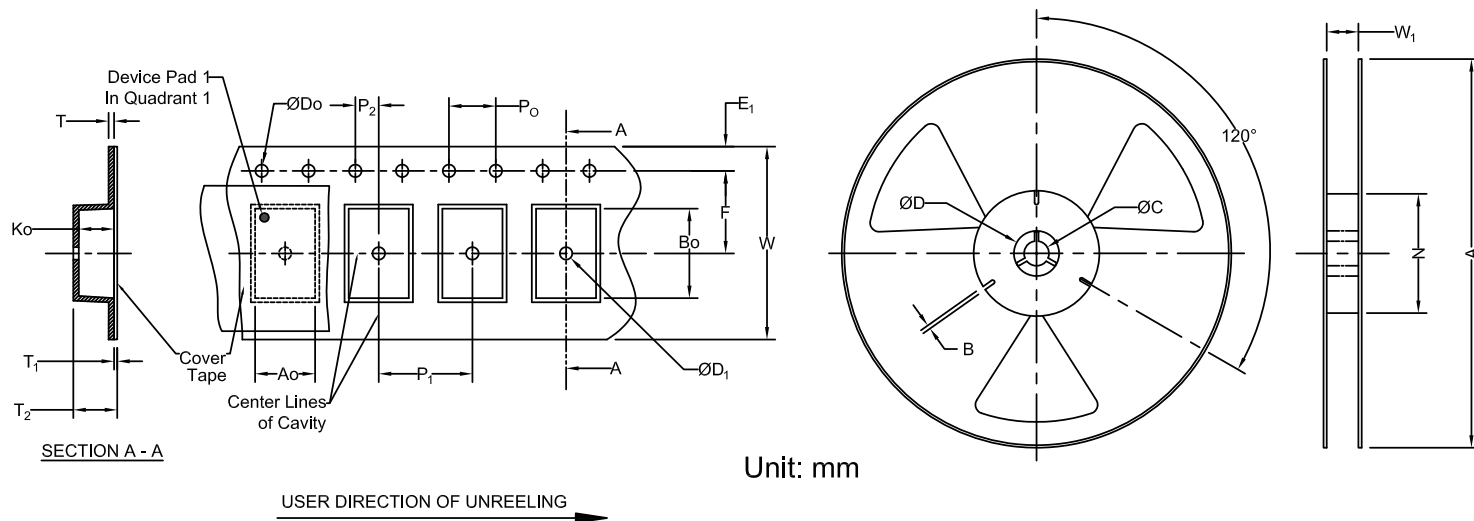
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Packaging

Tape & Reel Dimension



Carrier Tape Specifications (mm)

E1	D0	P0	P2	F	P1	W	A0	B0	T ₂	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	0.62 ± 0.03	1.12 ± 0.03	0.45 Max	10,000

Reel Specifications (mm)

A	W ₁	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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