USB409B - Preliminary

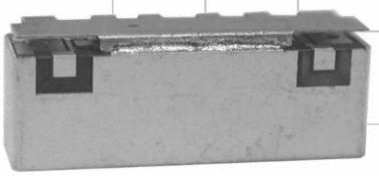
3.98-4.20GHz USB Series TDD BPF

Features

- Low Loss with High Rejection
- Universal footprint across family for all TDD bands

Applications

- Wireless Infrastructure applications
- High-performance carrier-grade TDD Pico-cells.



Part Dimensions: 25.7 × 5.3 × 6.7 mm • <2.6 g
Materials: Ag plated ceramic block with tin plated brass shield

Description

Surface mount ceramic bandpass filter supports a universal footprint across all TDD frequency bands enabling the use of a common system PCB. Superior rejection, insertion loss, reliability, as well as both peak and average power handling compared to other bandpass filter technologies.

Electrical Specifications

Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
Nominal Impedance	-	50 ohms	-	-
Average Input Power	-	-	-	8.0 Watt max
Peak Input Power	-	-	-	80 Watt max
Input-Output Response				
Passband Insertion Loss (20 MHz avg)	3980-4200	2.0 dB	2.4 dB max	2.4 dB max
Passband Ripple	3980-4200	1.2 dB	1.5 dB max	1.7 dB max
Passband Return Loss	3980-4200	14 dB	12 dB min	12 dB min
Attenuation:	1-2700		40dB min	40 dB min
	2701-3600		30 dB min	30 dB min
	3601-3960	12 dB	11 dB min	10 dB min
	4220-4599	12 dB	11 dB min	10 dB min
	4600-5950		30 dB min	30 dB min

Note: CTS tests each unit to the critical specifications above. Subsequent audits may deviate due to repeatability among different test systems which shall not exceed these allowances.

Specification Allowance	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

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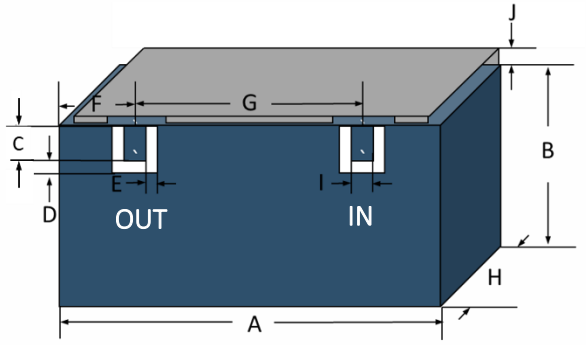
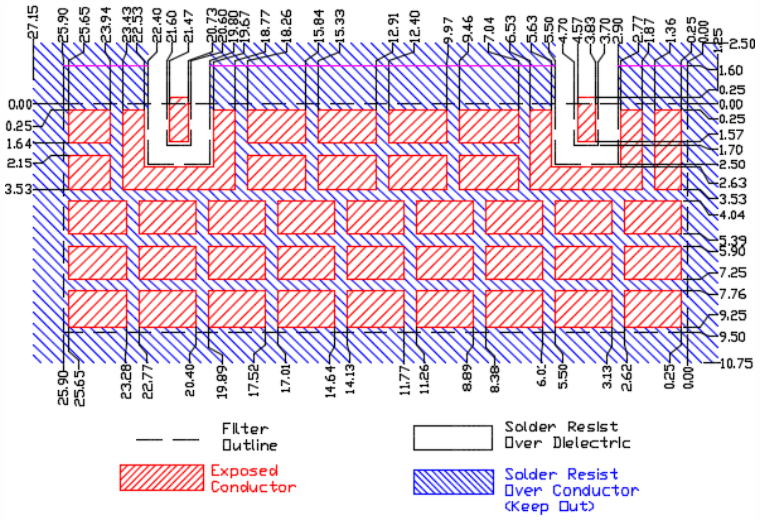
Mechanical Drawing



Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	25.40	0.30
B	<3.70est	0.30
C	1.70	0.13
D	0.80	0.13
E	0.80	0.13
F	4.20	0.13
G	16.90	0.13
H	6.40	0.30
I	1.00	0.13
J	1.10	0.20

PCB Layout



IMPORTANT: Please assure >=30mils (0.75mm) thickness of dielectric beneath the I/O Pads and the surrounding clearance zone down to the ground plane.

Please assure sufficient ground vias between the top metal ground plane and the primary ground plane.

Recommended solder: 4-6 mils of SAC305 with reflow including 120s of soak at 217°C, and up to 30 sec peak at 241°C.

NOTE: The width of 9.50mm is necessary to support frequencies as low as 1885MHz for Band 39. If only higher frequency TDD bands are supported, then a smaller space can be allocated on the layout.

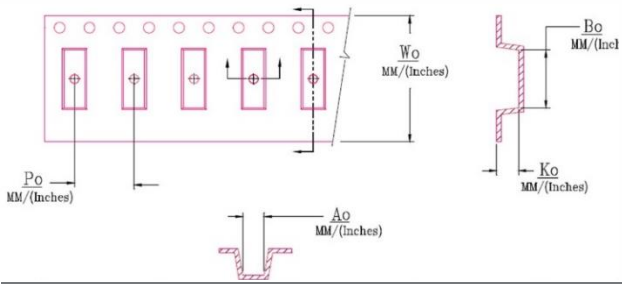
Packaging and Marking

Dimension	Units	Spec.
Reel Diameter	mm	330
Reel Weight	kg	5.5
Reel Quantity	ea.	500

Product Marking

CTS
409B
YWW

Customer Feed Direction → → →



W_o	A_o	B_o	K_o	P_o
1.732 in	0.236 in	1.028 in	0.283 in	0.472 in
44.0 mm	6.00 mm	26.10 mm	7.20 mm	12.0 mm

Electrical Response