UPB350B - Preliminary

3450-3550MHz UPB Series TDD Bandpass Filter

Features

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

Part Dimensions: 10.3 × 6.0 × 4.1 mm • 0.75 g
Materials: Ag plated ceramic block with tin plated brass shield

Applications

- Wireless Infrastructure applications
- High-performance carrier-grade single-band TDD Pico-cell basestations for up to 1.0W at the antenna port.

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 other bandpass filter technologies.

Electrical Specifications

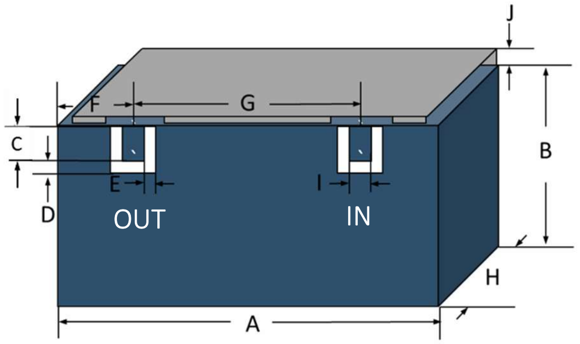
Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
Nominal Impedance	-	50 ohms	-	-
Average Input Power	-	-	-	2.0 Watt max
Peak Input Power	-	-	-	20 Watt max
Input-Output Response				
Passband Insertion Loss (10 MHz avg)	3450-3550	1.2 dB	1.4 dB max	1.5 dB max
Passband Ripple	3450-3550	0.3 dB	0.5 dB max	0.5 dB max
Passband Return Loss	3450-3550	14 dB	12 dB min	12 dB min
Attenuation:	1-3200	40 dB	35 dB min	35 dB min
	3201-3300	27 dB	22-24 dB min	22-24 dB min
	3700-3799	27 dB	22-24 dB min	22-24 dB min
	3800-5000	40 dB	35 dB min	35 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

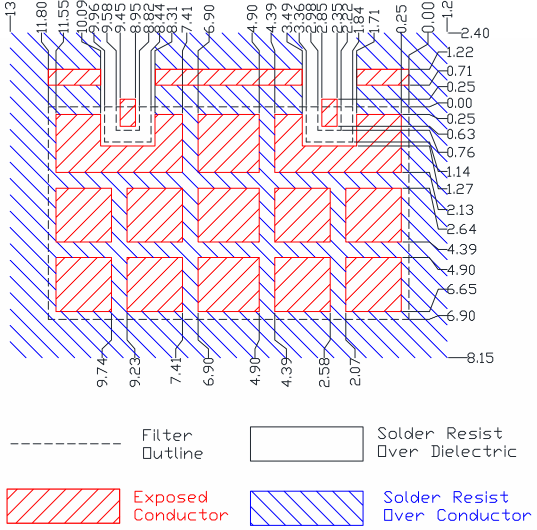
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

Mechanical Drawing



Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	10.1	0.20
B	4.50	0.30
C	0.76	0.13
D	0.38	0.13
E	0.38	0.13
F	1.80	0.13
G	6.60	0.13
H	4.10	max
I	0.76	0.13
J	0.95	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 required 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: A 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 this smaller space can be allocated on the layout.

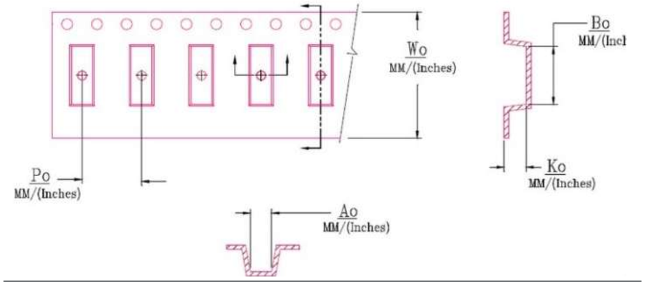
Packaging and Marking

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

Product Marking

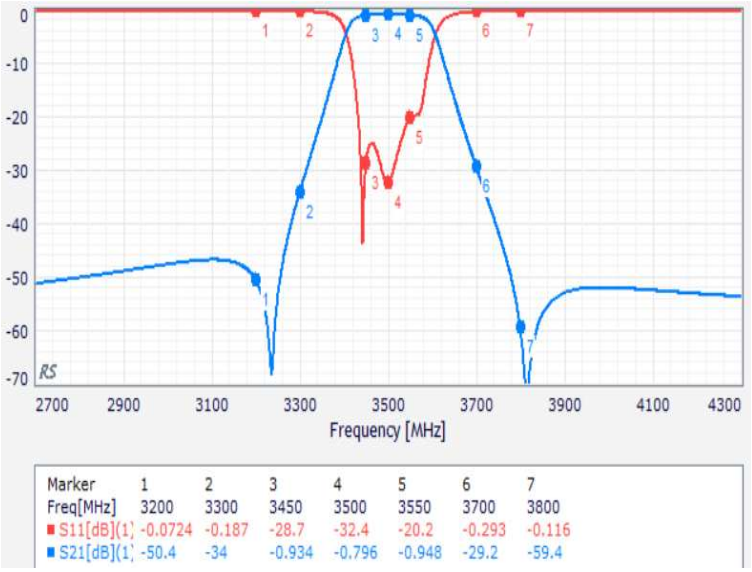
CTS
50B
YWW

Customer Feed Direction → → →



W_o	A_o	B_o	K_o	P_o
0.945 in 24.0 mm	0.260 in 6.60 mm	0.406 in 10.30 mm	0.169 in 4.3 mm	0.472 in 12.0 mm

Electrical Response



Marker	1	2	3	4	5	6	7
Freq[MHz]	3200	3300	3450	3500	3550	3700	3800
🟥 S11[dB](1)	-0.0724	-0.187	-28.7	-32.4	-20.2	-0.293	-0.116
🟦 S21[dB](1)	-50.4	-34	-0.934	-0.796	-0.948	-29.2	-59.4