

MCB3050A - Preliminary

30.0-31.0GHz mmWave ClearPlex Bandpass Filter

Features

- High-Q Low-Loss with High Rejection
- Support for narrowband subsets of 5G NR FR2 NR bands

Applications

- mmWave carrier-grade Infrastructure applications



Part Dimensions: EST 12.5 × 2.3 × 1.3 mm • <1.0 g

Description

Surface mount bandpass filter with I/Os that can interface to micro-strip transmission lines on the top-layer of customer PCBs. Superior rejection, insertion loss, reliability, temperature stability as well as both peak and average power handling compared to other mmWave bandpass filter technologies.

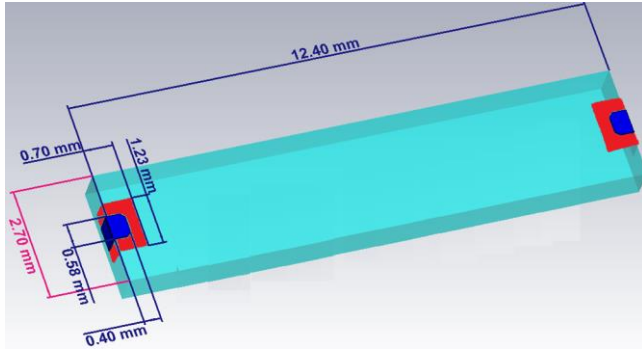
Electrical Specifications

Parameter	Frequency (GHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
Nominal Impedance	-	50 ohms	-	-
Average Input Power	-	-	-	5.0 Watt max
Peak Input Power	-	-	-	50 Watt max
Input-Output Response				
Passband Insertion Loss (500 MHz avg)	30.00 - 31.00			2.2 dB Goal 3.0 dB Max
Passband Ripple	30.00 - 31.00			0.8 dB Goal 1.2 dB Max
Passband Return Loss	30.00 - 31.00			14 dB Goal 12 dB Min
Attenuation:	< 29.05			40 dB min
	32.00 - 37.00			40 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.

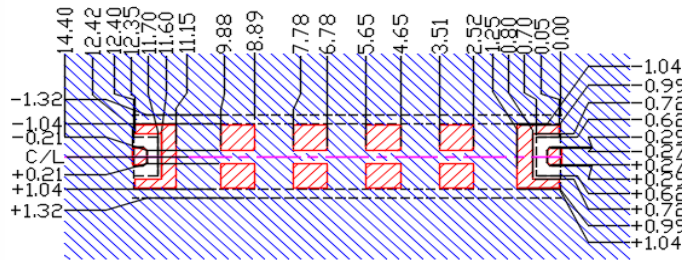
<u>Specification Allowance</u>	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

Mechanical Drawing

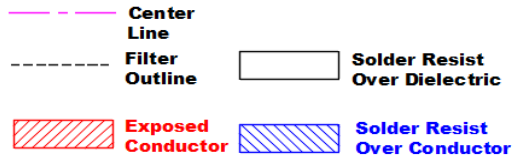


Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	12.40	0.10
B	2.10	0.20
C		
D		
E		
F		
G		
H	1.10	0.20
I		
J		

PCB Layout

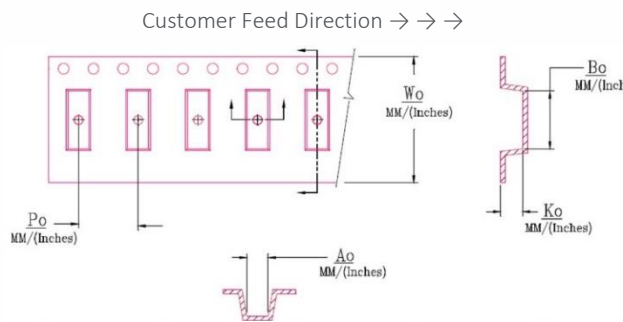


While the layout is the same for the MCB for 28-30.5GHz, the optimal impedance matching will differ.



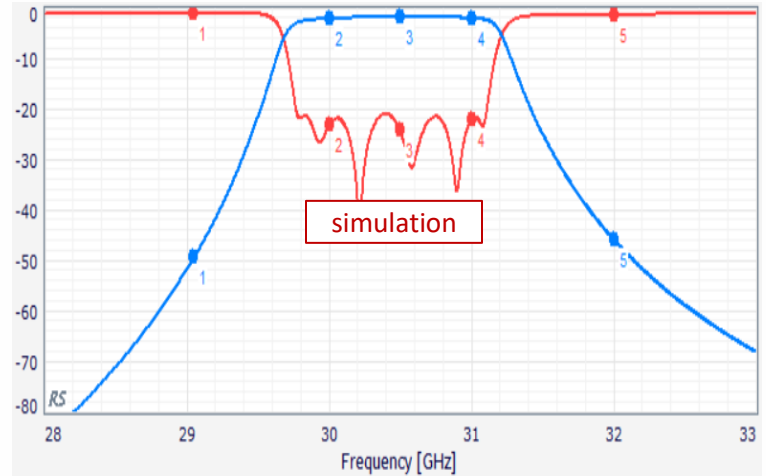
Packaging and Marking

Dimension	Units	Spec.	Product Marking (TBD on the filters)
Reel Diameter	mm	330	
Reel Weight	kg	x.x	
Reel Quantity	ea.	Xxx	



W_0	A_0	B_0	K_0	P_0
1.732 in 44.0 mm	x.xxx in x.xx mm	x.xxx in x.xx mm	x.xxx in x.xx mm	x.xxx in x.xx mm

Electrical Response



Marker	1	2	3	4	5
Freq[GHz]	29.05	30	30.5	31	32
S11[dB](1)	-0.749	-23.1	-24.1	-21.9	-1.08
S21[dB](1)	-49.2	-1.9	-1.61	-1.84	-45.6