MCB3000B - Preliminary

29.0-31.0GHz mmWave ClearPlex® Bandpass Filter

Features

- High-Q Low-Loss with High Rejection
- Support for wider passbands and stronger rejection

Applications

- mmWave carrier-grade Infrastructure applications

Part Dimensions: 15.5 × 3.0 × 1.3 mm • 0.2 g

Description

Surface mount ceramic waveguide 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.

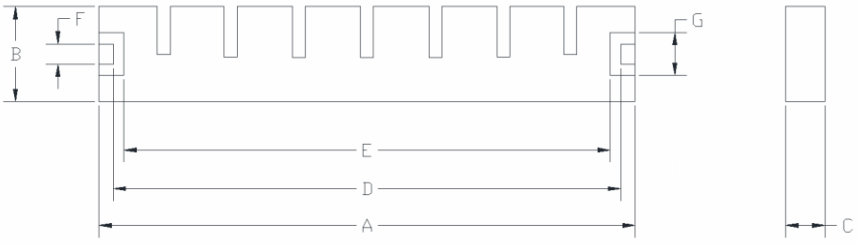
Electrical Specifications

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 (400MHz avg)	29.0 - 31.0	2.6 dB	2.8 dB Max	3.0 dB Max
	28.9 – 31.1	2.8 dB	3.0 dB Max	
Passband Ripple (400MHz)	29.0 - 31.0	1.4 dB	1.5 dB Max	1.6 dB Max
	28.9 – 31.1	1.5 dB	1.6 dB max	
Passband Return Loss	29.0 - 31.0	12 dB	10 dB min	10 dB Min
	28.9 - 31.1	12 dB	10 dB min	
Attenuation:	< 28.0	47 dB	45 dB min	45 dB min
	32.0 - TBD	32 dB	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.

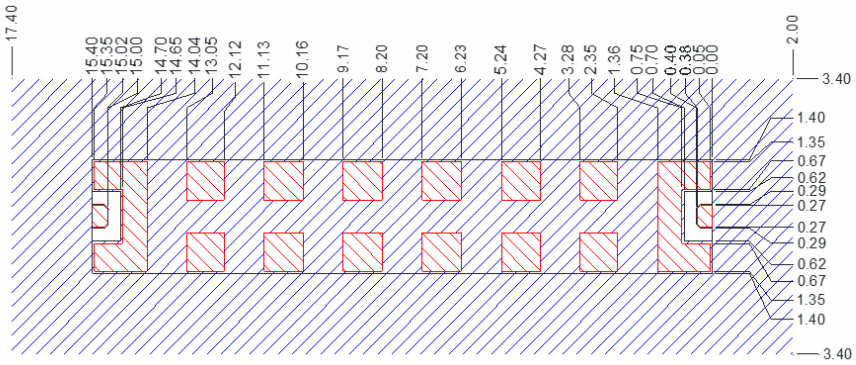
Specification Allowance	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

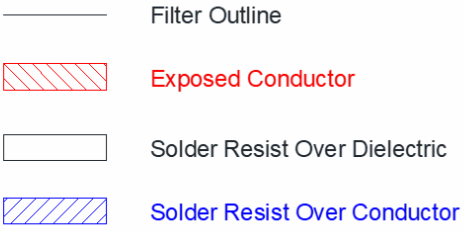
Mechanical Drawing



Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	15.40	0.10
B	2.80	0.20
C	1.10	0.20
D	14.60	0.13
E	14.00	0.13
F	0.58	0.13
G	1.23	0.13

PCB Layout



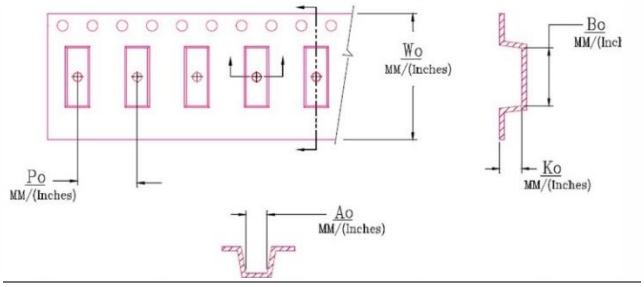


Packaging and Marking

Dimension	Units	Spec.
Reel Diameter	mm	330
Reel Weight	kg	x.x
Reel Quantity	ea.	Xxx

Product Marking (TBD on the filters)

Customer Feed Direction → → →



W_o	A_o	B_o	K_o	P_o
0.945 in 24.0 mm	0.118 in 3.0 mm	0.622 in 15.8 mm	0.063 in 1.6 mm	0.315 in 8.0 mm

Electrical Response