

MCB1412A

13.75-14.50GHz 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: 13.5 × 3.0 × 1.3 mm • 0.23 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.

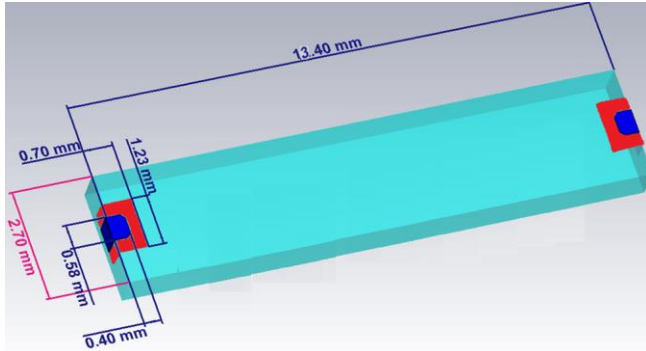
Electrical Specifications

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 (500 MHz avg)	13.75 - 14.50	2.7 dB	3.0 dB	3.0 dB
Passband Ripple	13.75 - 14.50	0.9 dB	1.2 dB	1.2 dB
Passband Return Loss	13.75 - 14.50	14 dB	12 dB	12 dB
Attenuation:	< 13.05	50 dB	45 dB	45 dB
	14.70	15 dB	10 dB	10 dB
	15.50 - 18.00	45 dB	40 dB	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.

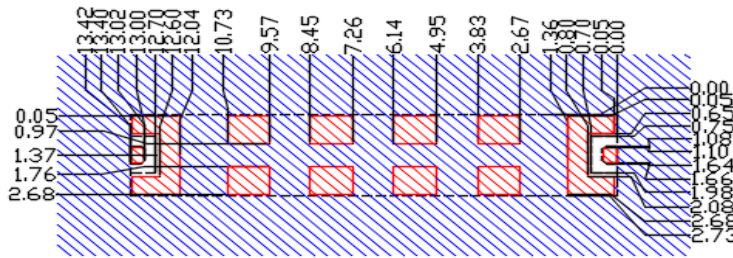
<u>Specification Allowance</u>	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

Mechanical Drawing

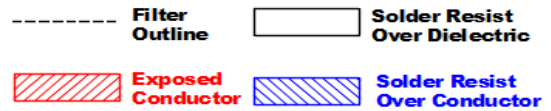


Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	13.40	0.10
B	2.80	0.20
C		
D		
E		
F		
G		
H	1.20	0.10
I		
J		

PCB Layout



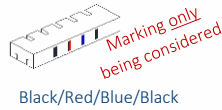
Layout and length is different from the MCB for 28-30.5GHz.



Packaging and Marking

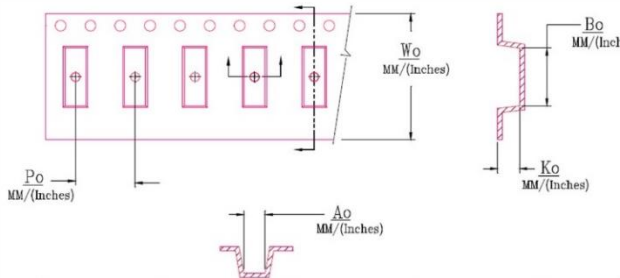
Dimension	Units	Spec.
Reel Diameter	mm	330
Reel Weight	kg	x.x
Reel Quantity	ea.	1000

Color Coding Diagram



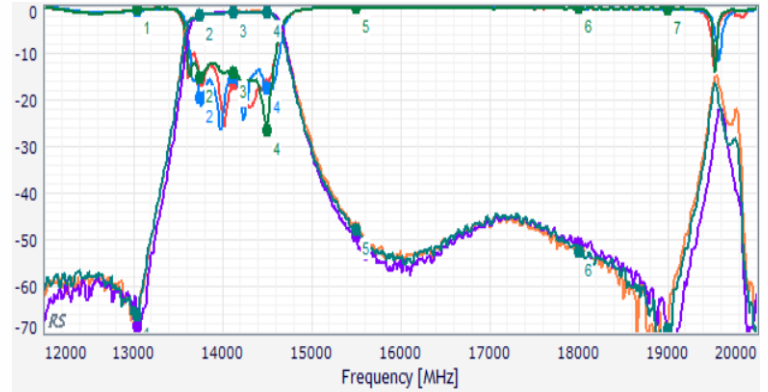
Black/Red/Blue/Black

Customer Feed Direction → → →



W_0	A_0	B_0	K_0	P_0
0.945 in	0.118 in	0.543 in	0.051 in	0.315 in
24.0 mm	3.0 mm	13.8 mm	1.3 mm	8.0mm

Electrical Response



Marker	1	2	3	4	5	6	7
Freq[MHz]	13050	13750	14125	14500	15500	18000	19000
S11[dB](1)	-0.548	-15.6	-16.4	-16.8	-0.0922	-0.194	-0.439
S11[dB](2)	-0.687	-19.5	-15.3	-17.5	-0.0373	-0.231	-0.484
S11[dB](3)	-0.557	-15.3	-14.3	-26.4	-0.108	-0.206	-0.376
S21[dB](1)	-68.2	-1.67	-1.07	-1.17	-47.5	-52.7	-70.6
S21[dB](2)	-68.3	-1.78	-1.11	-1.25	-49.3	-50.7	-75.1
S21[dB](3)	-66.3	-1.74	-1.11	-1.27	-47.8	-52.3	-69.1