



Part Dimensions: EST 12.5  $\times$  2.3  $\times$  1.3 mm  $\bullet$  <1.0 g

# 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

## 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<br>(GHz) | Typical<br>at 25℃ | Spec.<br>at 25°C | Spec. over<br>-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<br>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 <mark>Goal</mark>      |
|                                       |                    |                   |                  | 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. Specification AllowanceInsertion Loss0.1 dBReturn Loss1.0 dBAttenuation1.0 dB



# Preliminary - MCB3050A 30.0-31.0GHz mmWave ClearPlex Bandpass Filter

Dim.

Α

В

C D E F G H

Т

J

Nominal

(mm)

12.40

2.10

1.10

Tolerance

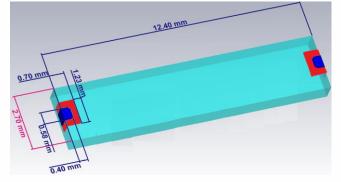
(±mm or Max)

0.10

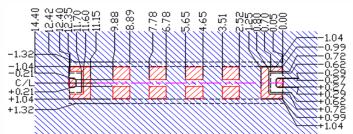
0.20

0.20

# **Mechanical Drawing**



# **PCB** Layout



Packaging and Marking

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



#### 0 **Product Marking** Dimension Units Spec. -10 (TBD on **Reel Diameter** 330 mm -20 the filters) **Reel Weight** kg X.X -30 **Reel Quantity** ea. Ххх Customer Feed Direction $\rightarrow \rightarrow \rightarrow$ -40 simulation <u>Bo</u> MM/(Incl -50 Wo MM/(Inches) € 0 -60 -70 MM/(Inches) RS -80 Po MM/(Inches) 28 29 30 <u>Ao</u> MM/(Inches) Frequency [GHz] Marker 2 3 4 5 1 Freg[GHz] 29.05 30 30.5 31 32 $W_{o}$ Ao Bo Ko Po -23.1 S11[dB](1) -0.749 -24.1 -21.9 -1.08 1.732 in S21[dB](1) -49.2 -1.9 -1.61 -1.84 -45.6 x.xxx in x.xxx in x.xxx in x.xxx in 44.0 <u>mm</u> x.xx mm x.xx mm x.xx mm x.xx mm

# **Electrical Response**

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