

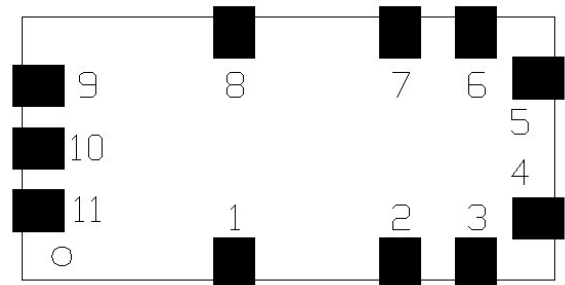
## Features

- 75 Ohm
- SMT unit
- RoHS compliant
- Excellent temperature stability
- Excellent repeatability

## Description

MACOM's MAFL-011025 is a low cost, SMT diplex filter designed for CATV, CPE, STB, cable modem and set top box applications.

## Pin Configuration



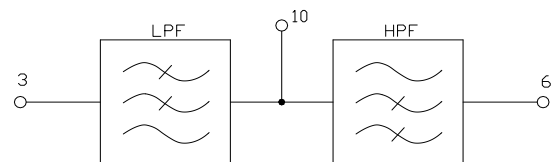
| Function       | Pin number              |
|----------------|-------------------------|
| Ground         | 1, 2, 4, 5, 7, 8, 9, 11 |
| Low pass port  | 3                       |
| High pass port | 6                       |
| Common         | 10                      |

## Electrical specifications:

$T_A = 25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$

| Parameter   | Units | Min.     | Typ.       | Max.       |
|---|-------|----------|------------|------------|
| <b>Insertion loss</b><br>5 - 65 MHz<br>108 - 1002 MHz | dB    | —        | 0.5<br>0.5 | 1.1<br>1.2 |
| <b>Rejection</b><br>5 - 65 MHz<br>108 - 1002 MHz      | dB    | 45<br>45 | 50<br>50   | —          |
| <b>Crossover Isolation</b><br>65 - 108 MHz            | dB    | 16       | 19         | —          |
| <b>Return loss</b><br>5 - 65 MHz<br>108 - 1002 MHz    | dB    | 12<br>12 | 16<br>16   | —          |

## Schematic

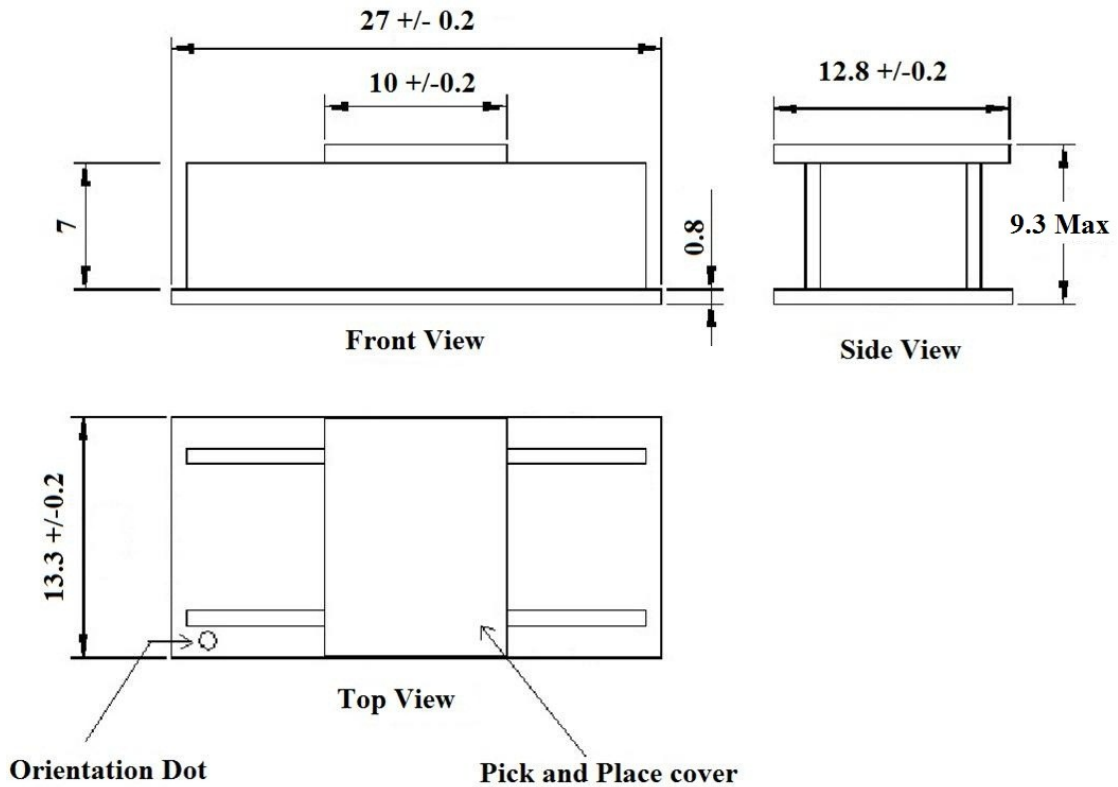


## Recommended Maximum Ratings

| Parameter             | Absolute maximum |
|-----------------------|------------------|
| RF power              | 250 mW           |
| DC current            | 30 mA            |
| Operating temperature | -40°C to +85°C   |
| Storage temperature   | -40°C to +85°C   |

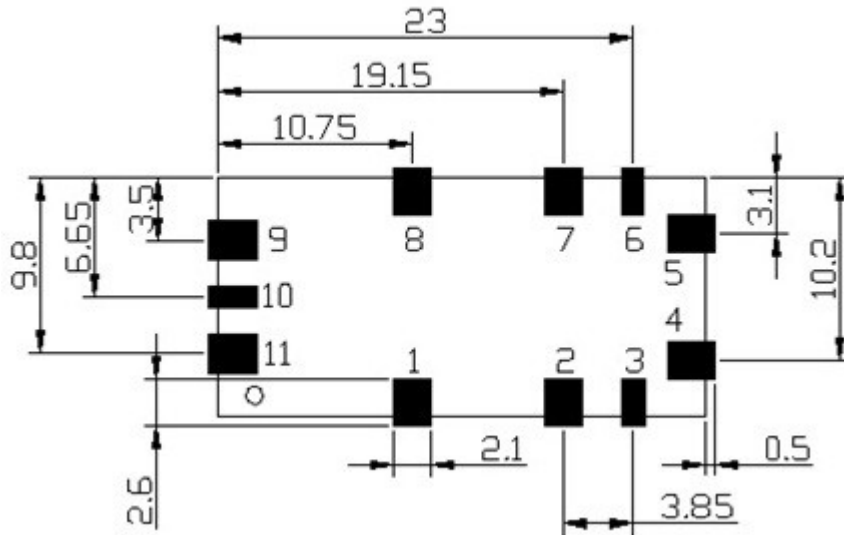
\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU

## Filter Dimensions

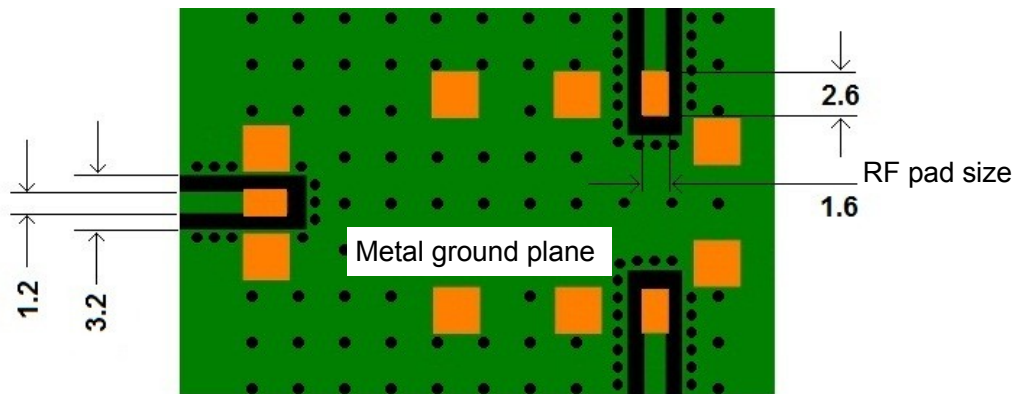


Dimensions are millimeters.  
Tolerance:  $\pm 0.2$ mm  
PCB Pad Finish: ENIG

## Recommended application PCB



Footprint (As viewed from the top side)



Layout (As viewed from the top side)

Dimensions are millimeters.  
Tolerance: .x ± 0.1, .xx ± 0.05, except where specified.

### Layout notes:

- Track dimension = 1.2mm
- Gap dimension = 1.0mm
- It is not recommended to run RF tracks under the filter unless they are greater than 1.6mm below the base of the filter.
- RF shield should be kept a minimum of 20mm above the filter.
- The filter substrate is 0.8mm thick FR-4 material. A metal ground is required on the top layer of the Application PCB directly underneath the filter. This metal ground plane of the application PCB is connected to the ground plane on the bottom of the filter substrate and forms a 75 Ω co-planar wave guide for the input and output RF transmission lines.

# MAFL-011025

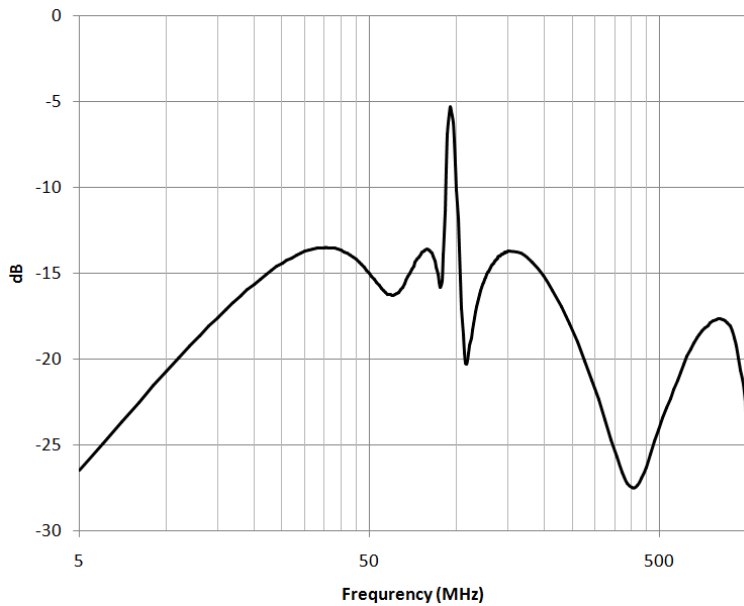


**Broadband CATV Diplexer**  
**5 - 65 / 108 - 1002 MHz**

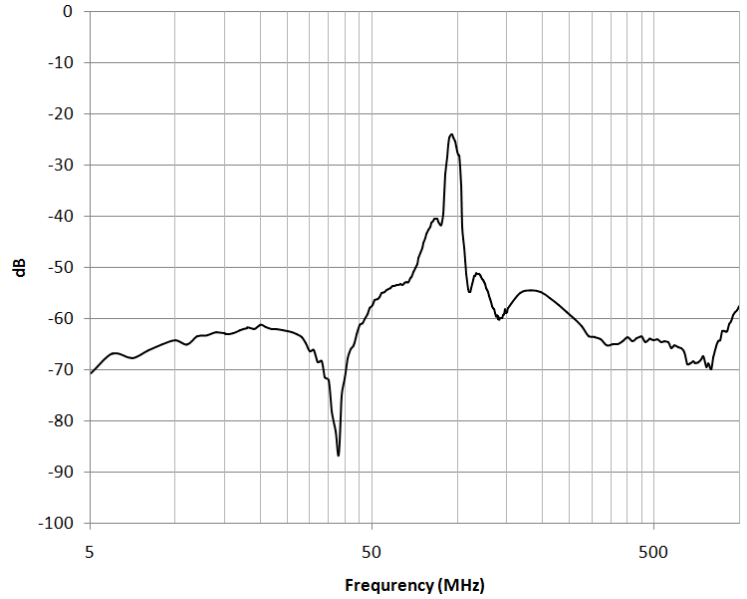
Rev. V2

Typical performance:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$

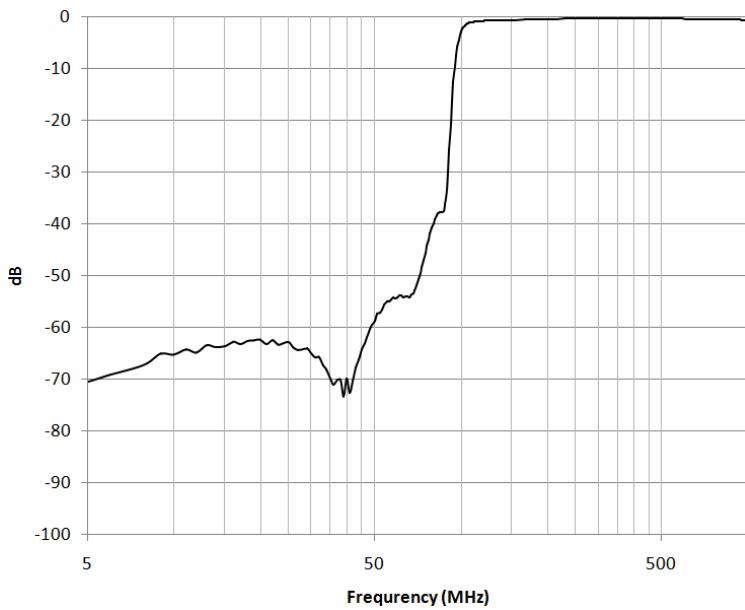
**Input return loss**



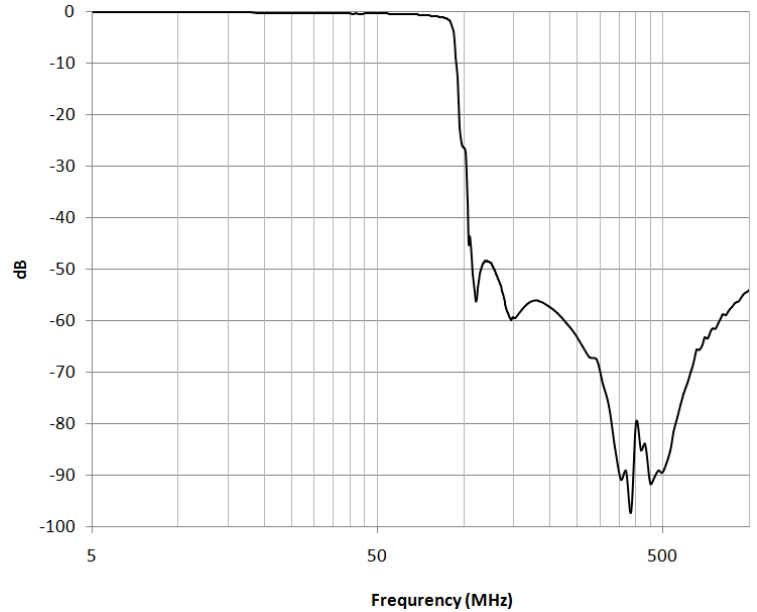
**Isolation**



**High pass filter insertion loss**



**Low pass filter insertion loss**



## Broadband CATV Diplexer 5 - 65 / 108 - 1002 MHz

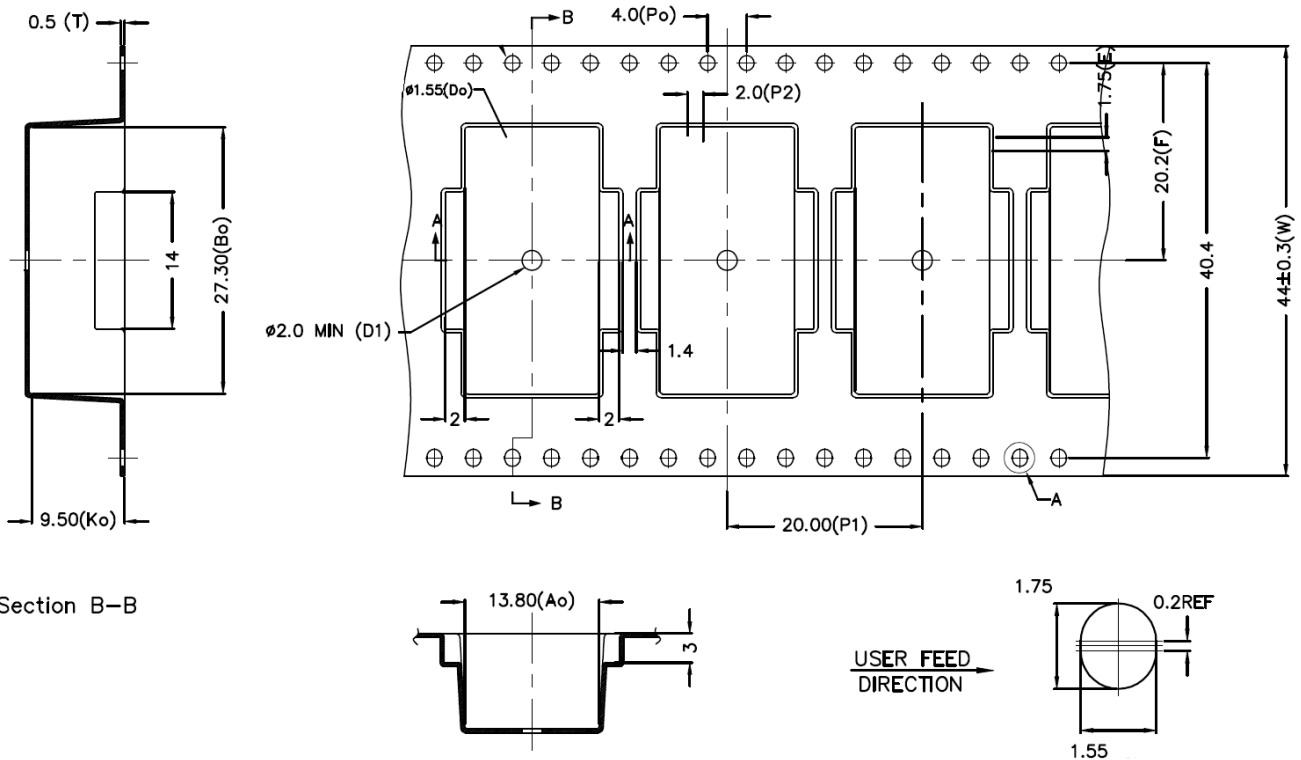
Rev. V2

### Tape & Reel Information

| Parameter  | Units | Value |
|--|-------|-------|
| Qty per reel                                       | -     | 200   |
| Reel Size  | mm    | 330   |
| Tape Width   | mm    | 44.00 |
| Pitch  | mm    | 20.00 |
| Ao   | mm    | 13.80 |
| Bo   | mm    | 27.30 |
| Ko   | mm    | 9.50  |
| Orientation  | -     | F30   |
| Reference Application Note ANI-019 for orientation |       |       |

### Ordering Information

| Part Number | Package     |
|-------------|-------------|
| MAFL-011025 | Tape & Reel |



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