

# MAFL-011025



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

Rev.V1

### Features

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

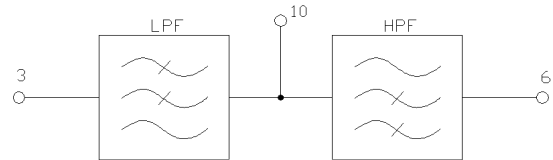
### Description

MACOM's MAFL-011025 is a low cost, SMT diplex filter designed for CATV, CPE, STB, cable modem

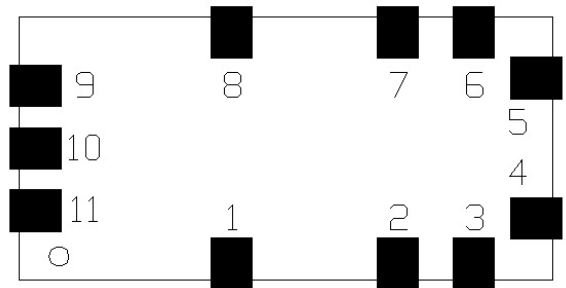
**Electrical specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

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

### Schematic



### Pin Configuration



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

### Recommended Maximum Ratings

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

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC

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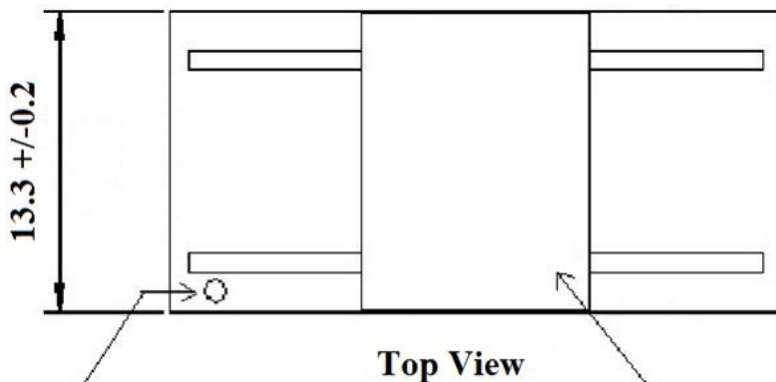
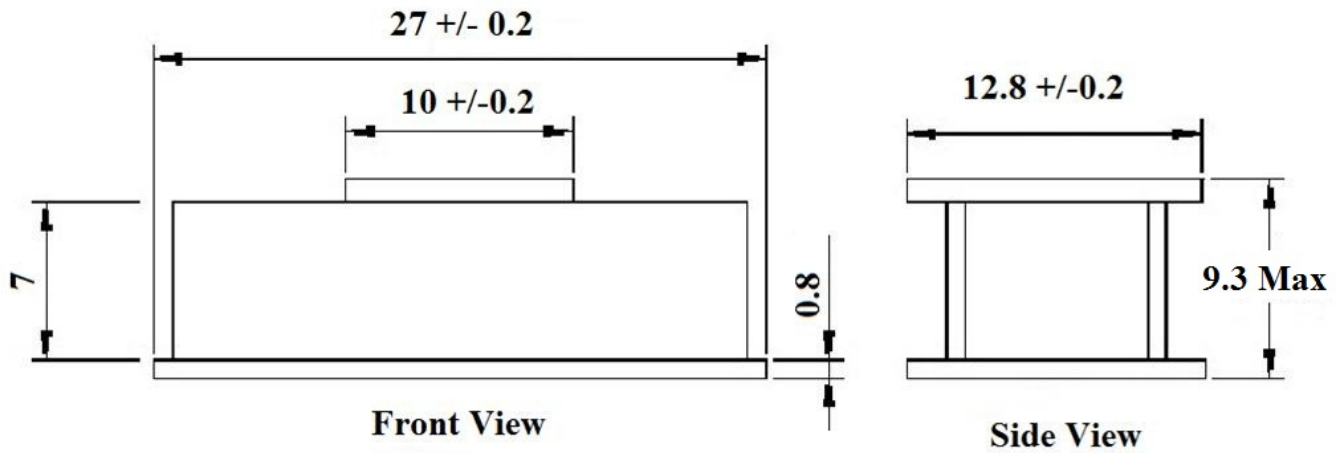
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## Filter Dimensions



**Orientation Dot**

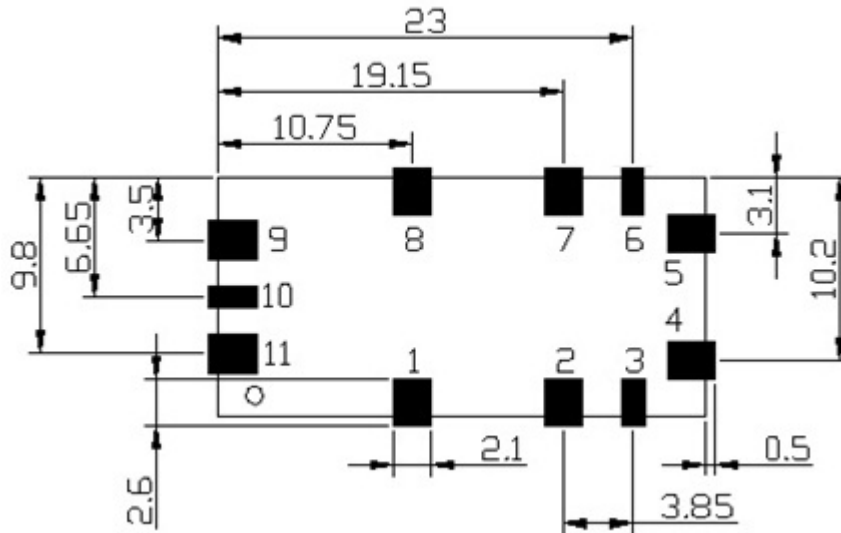
**Pick and Place cover**

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

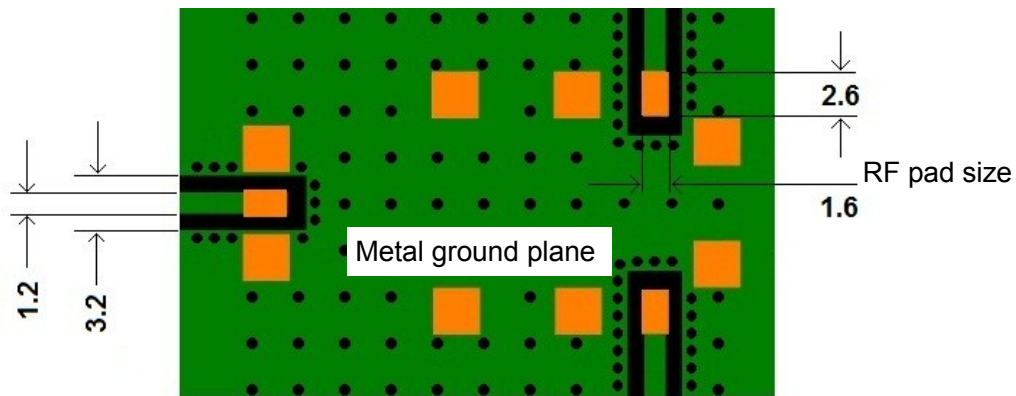
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**Recommended application PCB**



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.

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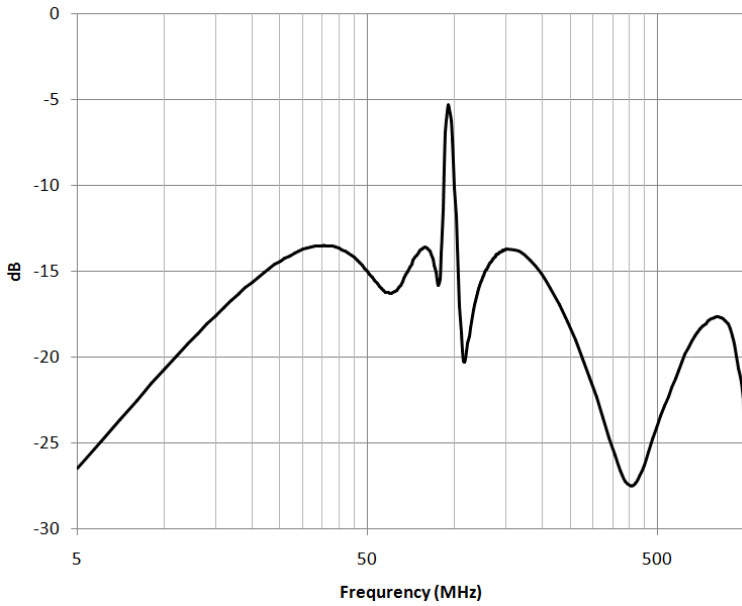


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**5 - 65 / 108 - 1002 MHz**

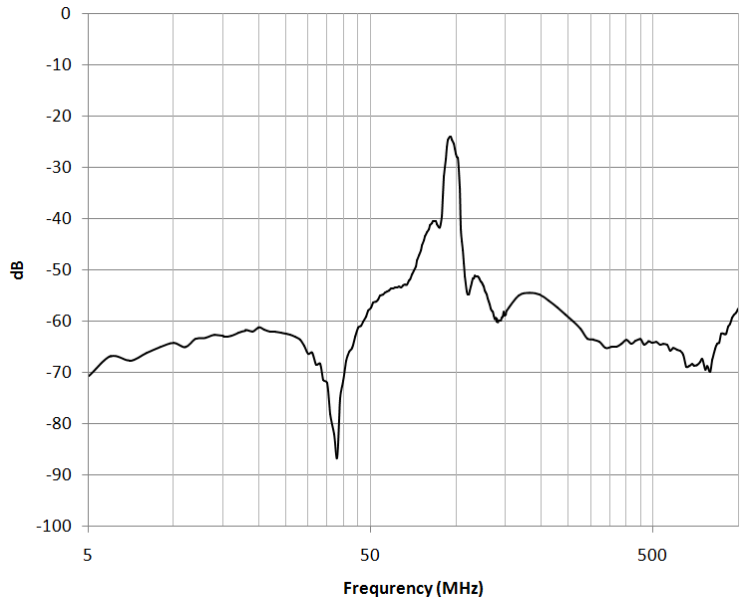
Rev.V1

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

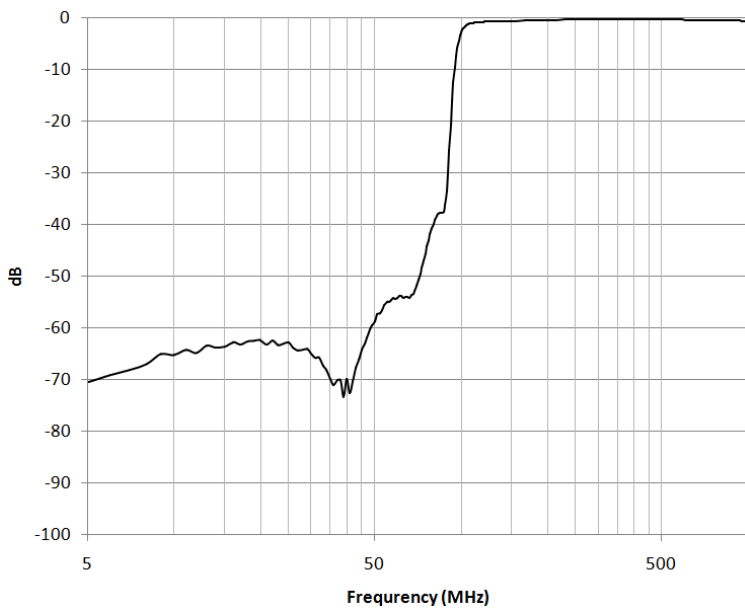
### Input return loss



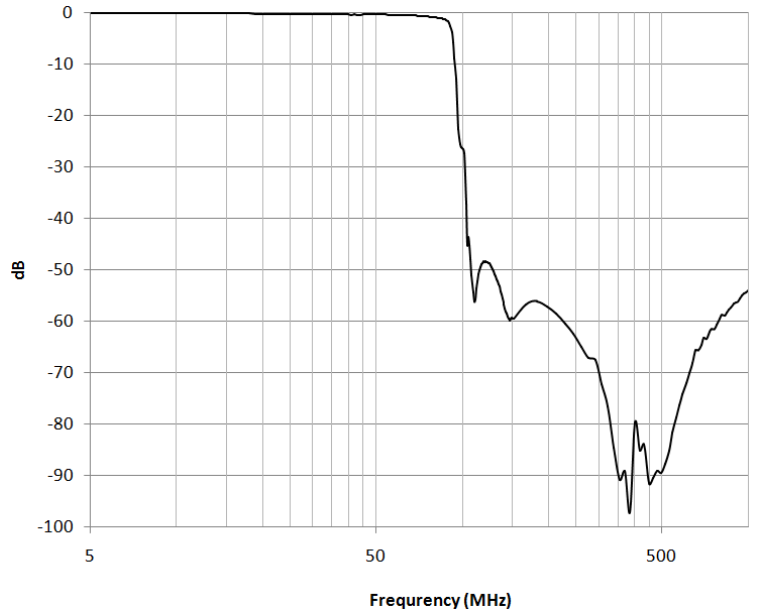
### Isolation



### High pass filter insertion loss



### Low pass filter insertion loss



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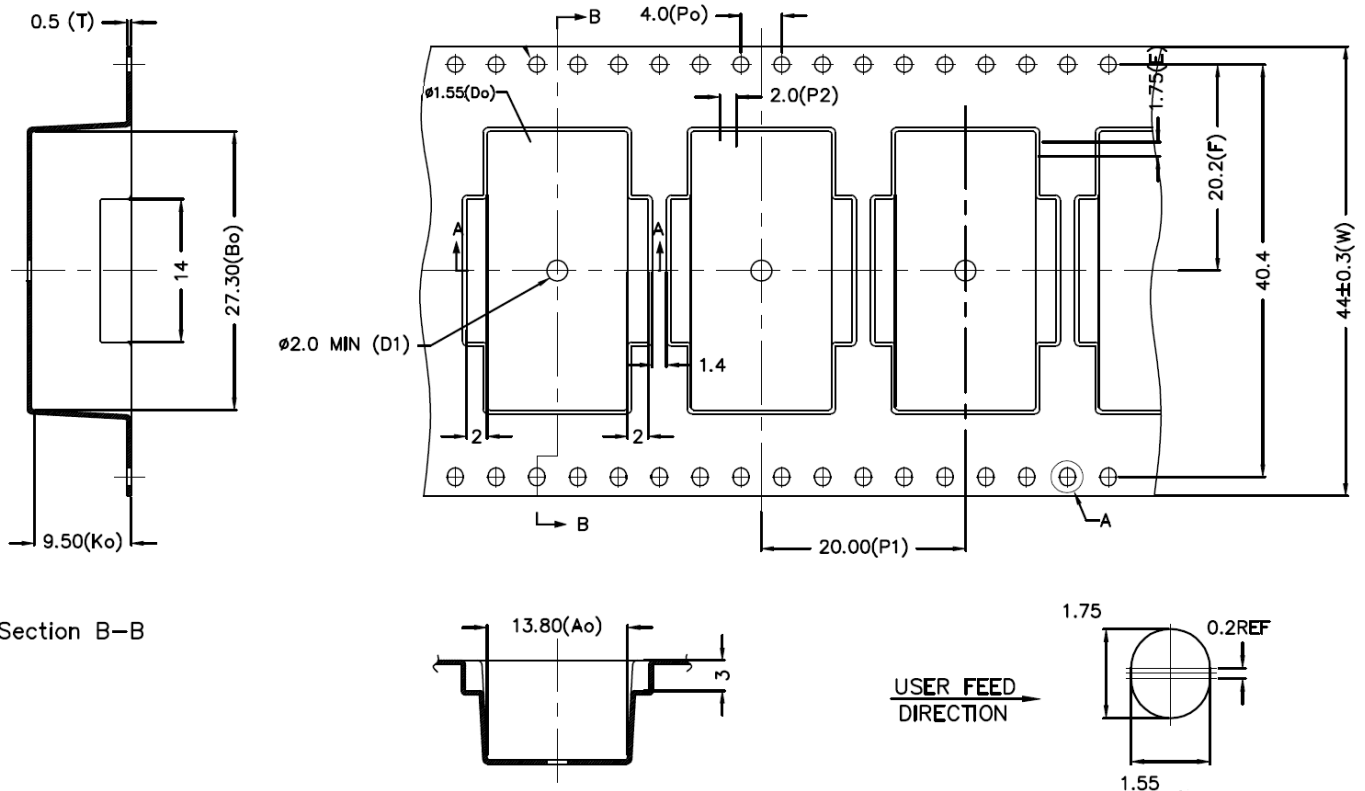
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### Tape & Reel Information

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



Section B-B

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