

## CATV Diplex Filter 5 - 42 / 54 - 1218 MHz

Rev. V1

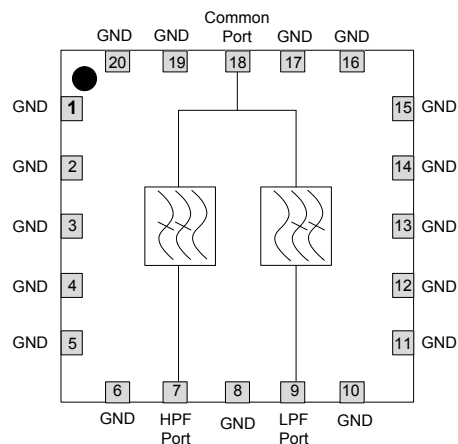
### Features

- 75  $\Omega$
- Surface Mount Technology
- RoHS\* Compliant

### Description

The MAFL-011078 is a surface mount diplex filter designed for the CATV applications, DTV, and DBS applications.

### Functional Schematic



### Ordering Information<sup>1</sup>

Part Number	Package
MAFL-011078	200 piece reel
MAFL-011078-SB1	Sample Board

1. Reference Application Note M513 for reel size information.

### Pin Configuration<sup>2</sup>

Pin #	Function
1 - 6, 8, 10-17, 19, 20	Ground
7	High Pass Port
9	Low Pass Port
18	Common Port

2. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: +25°C, Z<sub>0</sub> = 75 $\Omega$

Parameter	Frequency Test Conditions (MHz)	Units	Min.	Typ.	Max.
Insertion loss	5 - 42	dB	—	1.0	1.3
	54 - 1218			1.0	1.3
Filter Isolation	5 - 42	dB	45	50	—
	42 - 54		26	30	
	54 - 1218		45	50	
Filter Return Loss (all ports)	5 - 42	dB	22	24	—
	54 - 750		22	24	
	750 - 1218		20	24	
Group Delay	39 - 40.5	ns	—	10	—
	40.5 - 42			17	
	55.25 - 58.83			17	
	61.25 - 64.83			10	
	67.25 - 70.83			6	

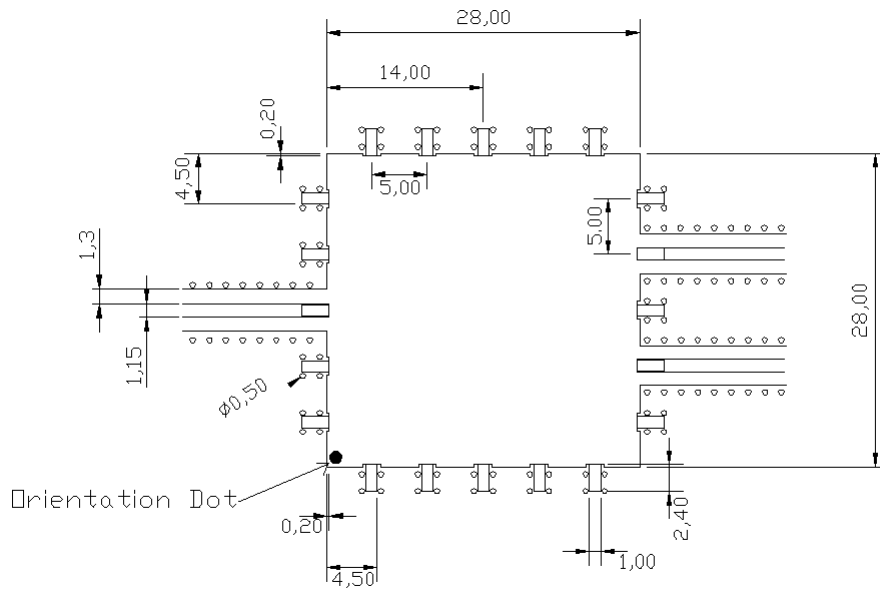
\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

## Absolute Maximum Ratings<sup>3,4</sup>

Parameter	Absolute Maximum
RF Power	1000 mW
DC Current	30 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-20°C to +125°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

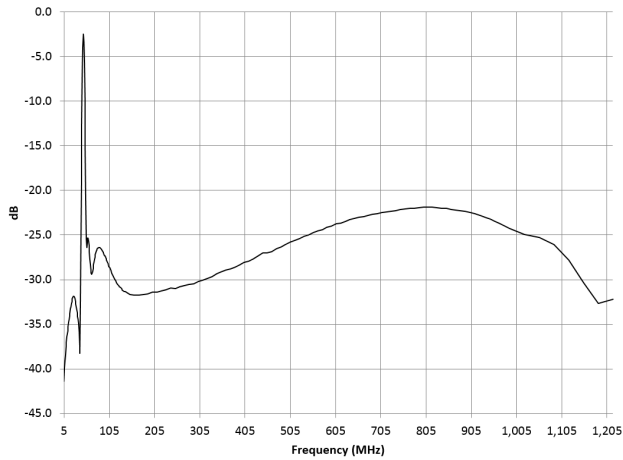
## Recommended PCB Configuration



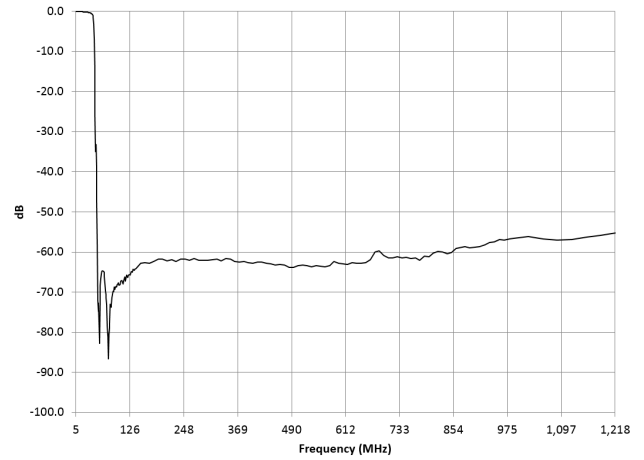
Dimensions in mm. Tolerance: .x ± 0.1, .xx ± 0.05

## Typical Performance Curves

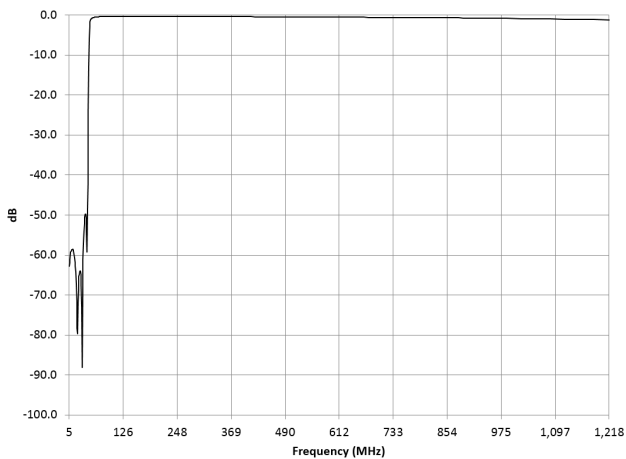
### Input Port Return Loss



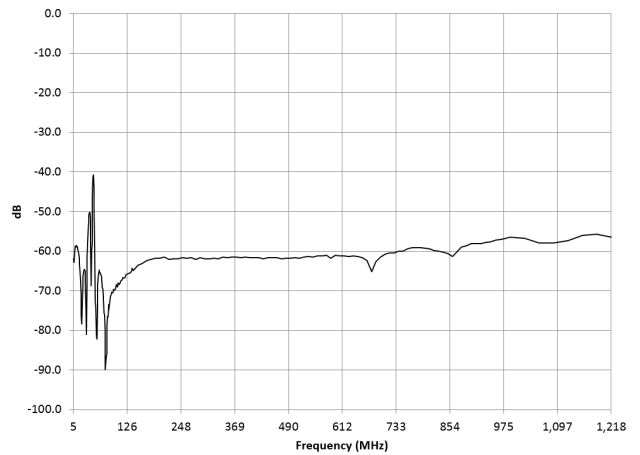
### Low Pass Filter Performance



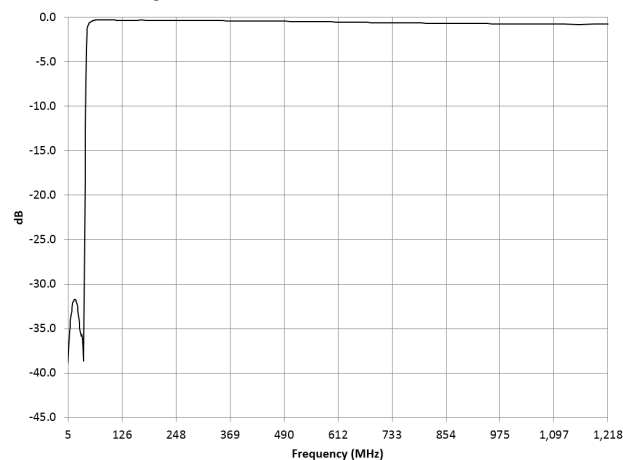
### High Pass Filter Performance



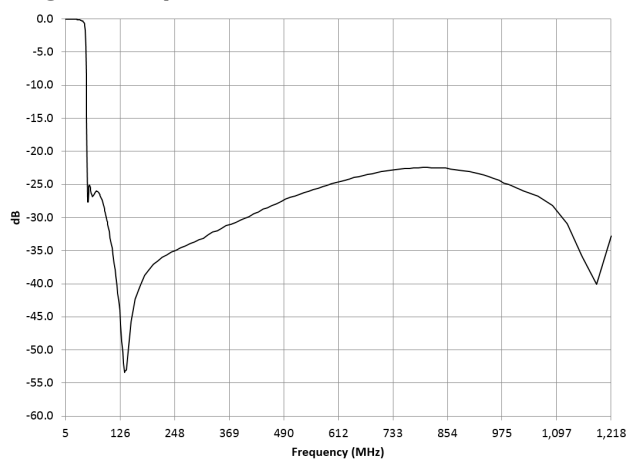
### Filter Isolation



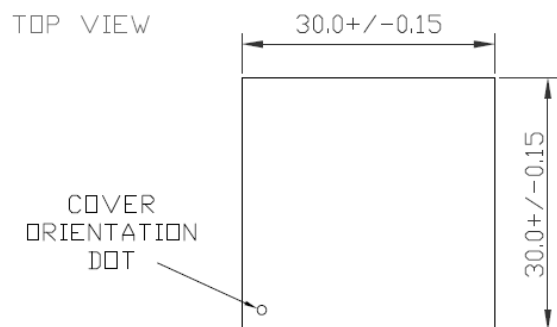
### Low Pass port Return Loss



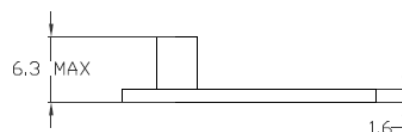
### High Pass port Return Loss



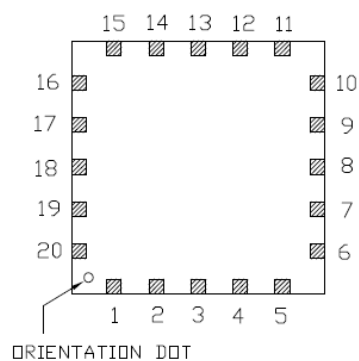
## Outline Drawing



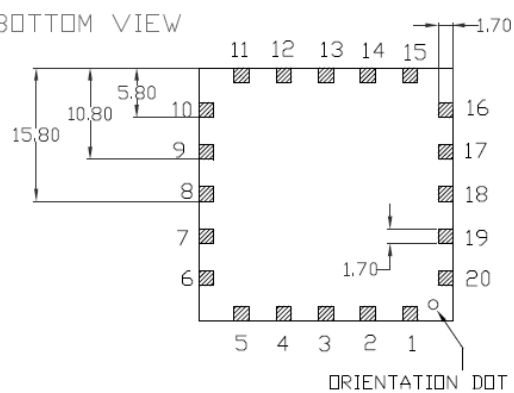
SIDE VIEW



PCB TOP VIEW

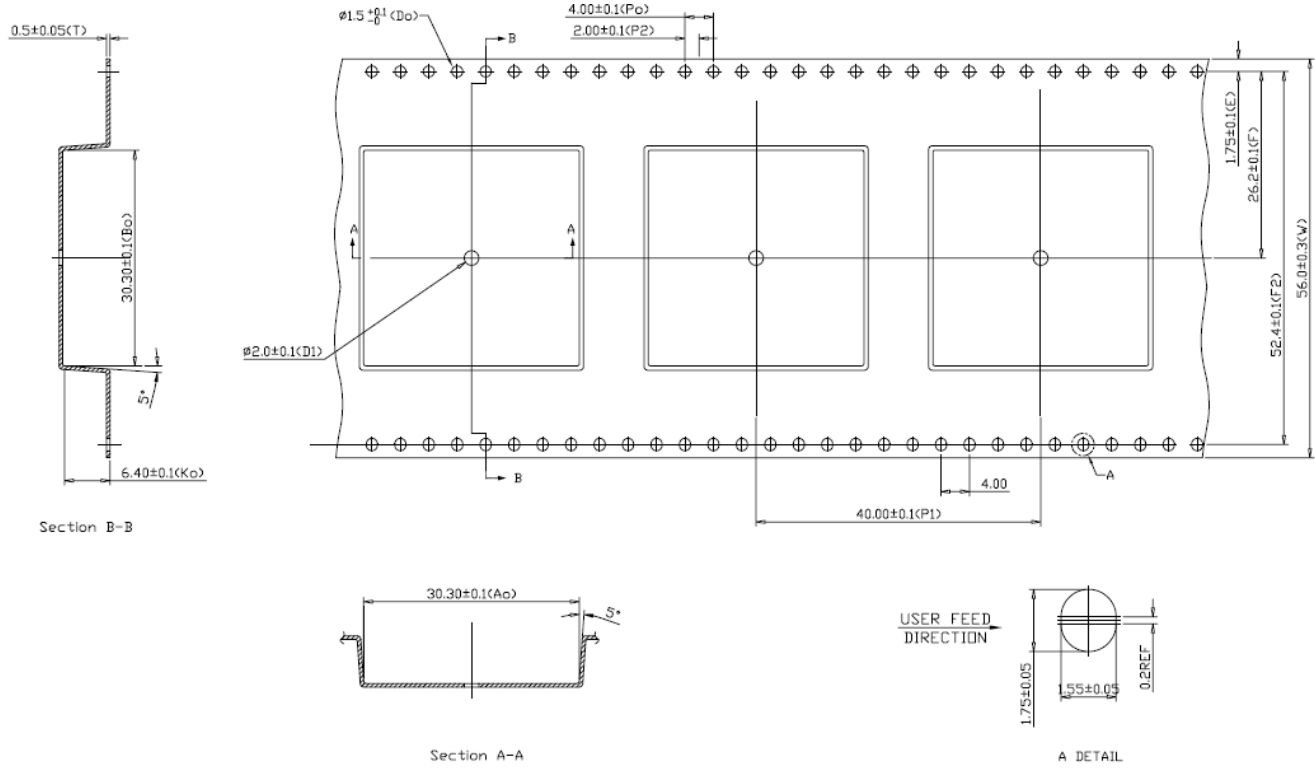


PCB BOTTOM VIEW



Dimensions in mm. Tolerance: .x ± 0.1, .xx ± 0.05

## Tape & Reel Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	200
Reel Size	mm	330
Tape Width	mm	56.00
Pitch	mm	40.00
Ao	mm	30.3
Bo	mm	30.3
Ko	mm	6.4
Orientation	-	F30
Reference Application Note ANI-019 for orientation		

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