

CATV Diplex Filter 5 - 42 / 54 - 1218 MHz

Rev. V1

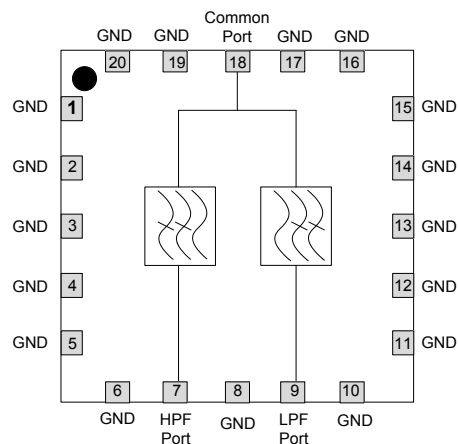
Features

- 75 Ω
- 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 Information¹

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

1. Reference Application Note M513 for reel size information.

Pin Configuration²

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, Z₀ = 75 Ω

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	

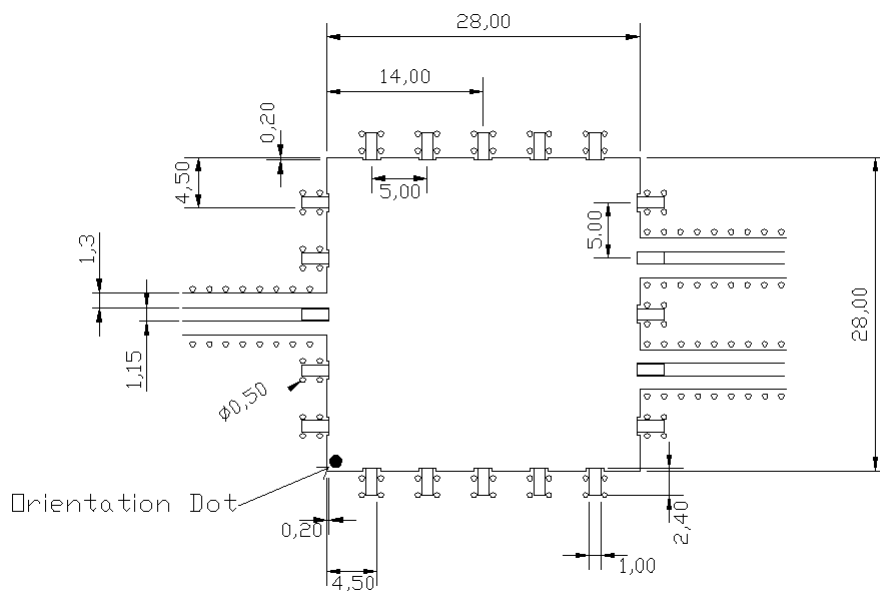
* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Absolute Maximum Ratings^{3,4}

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

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

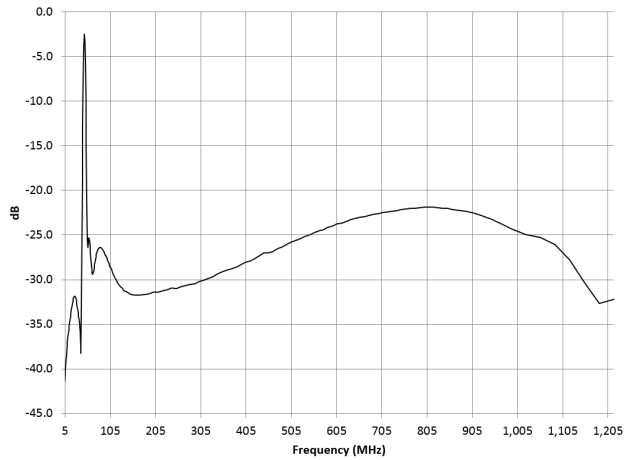
Recommended PCB Configuration



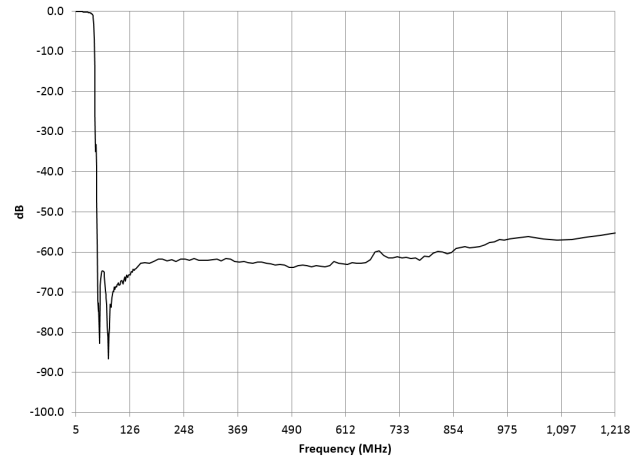
Dimensions in mm. Tolerance: .x ± 0.1, .xx ± 0.05

Typical Performance Curves

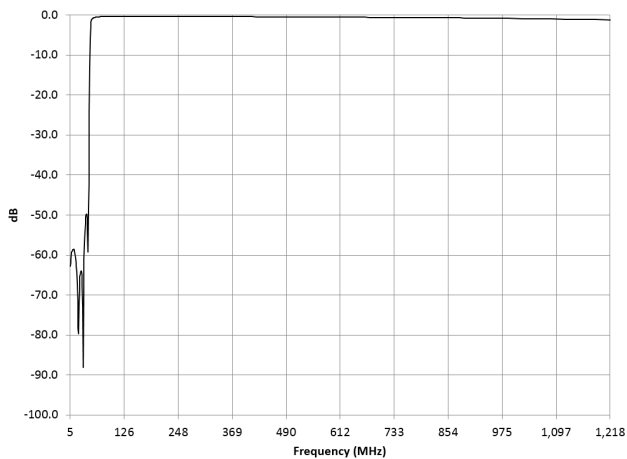
Input Port Return Loss



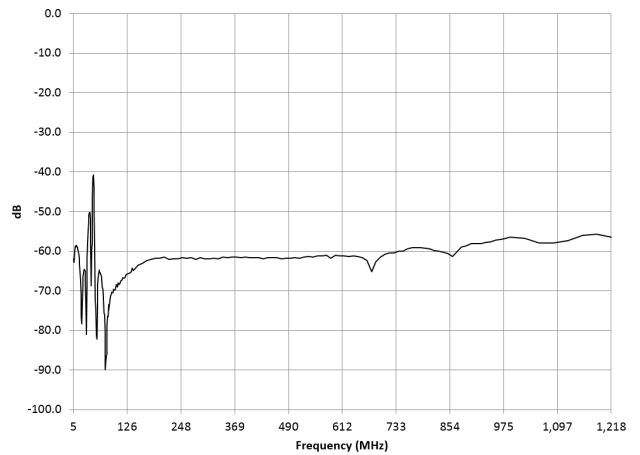
Low Pass Filter Performance



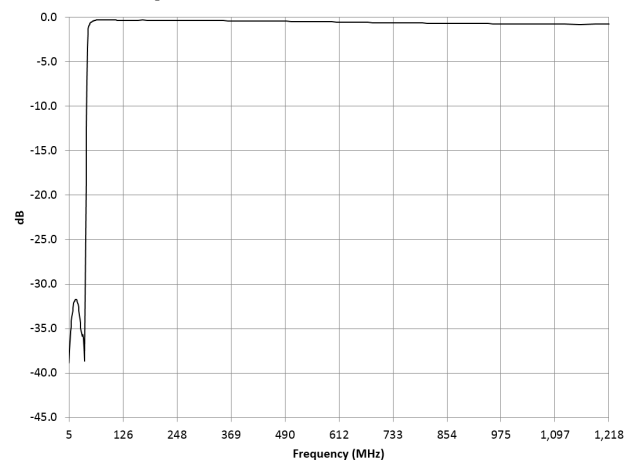
High Pass Filter Performance



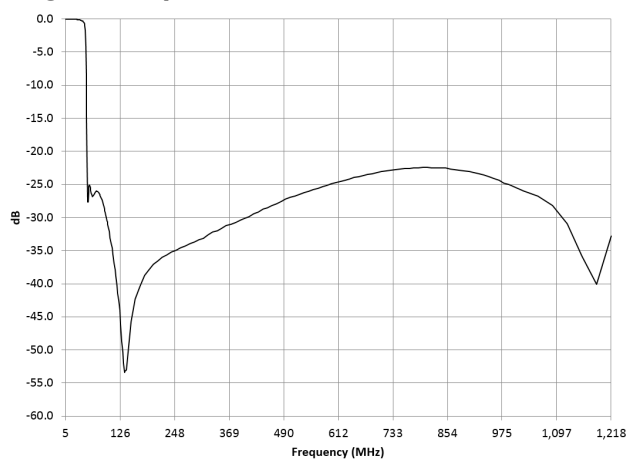
Filter Isolation



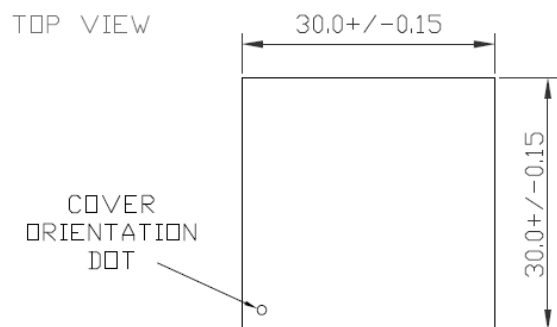
Low Pass port Return Loss



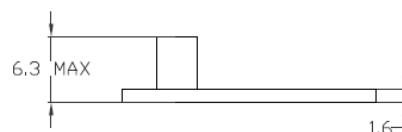
High Pass port Return Loss



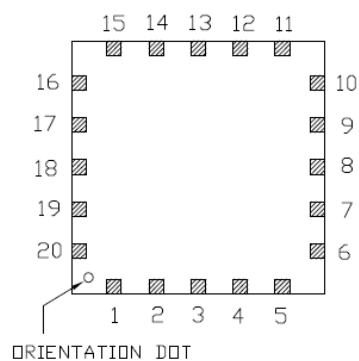
Outline Drawing



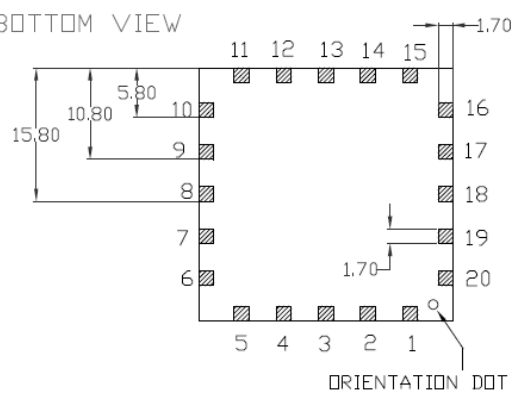
SIDE VIEW



PCB TOP VIEW

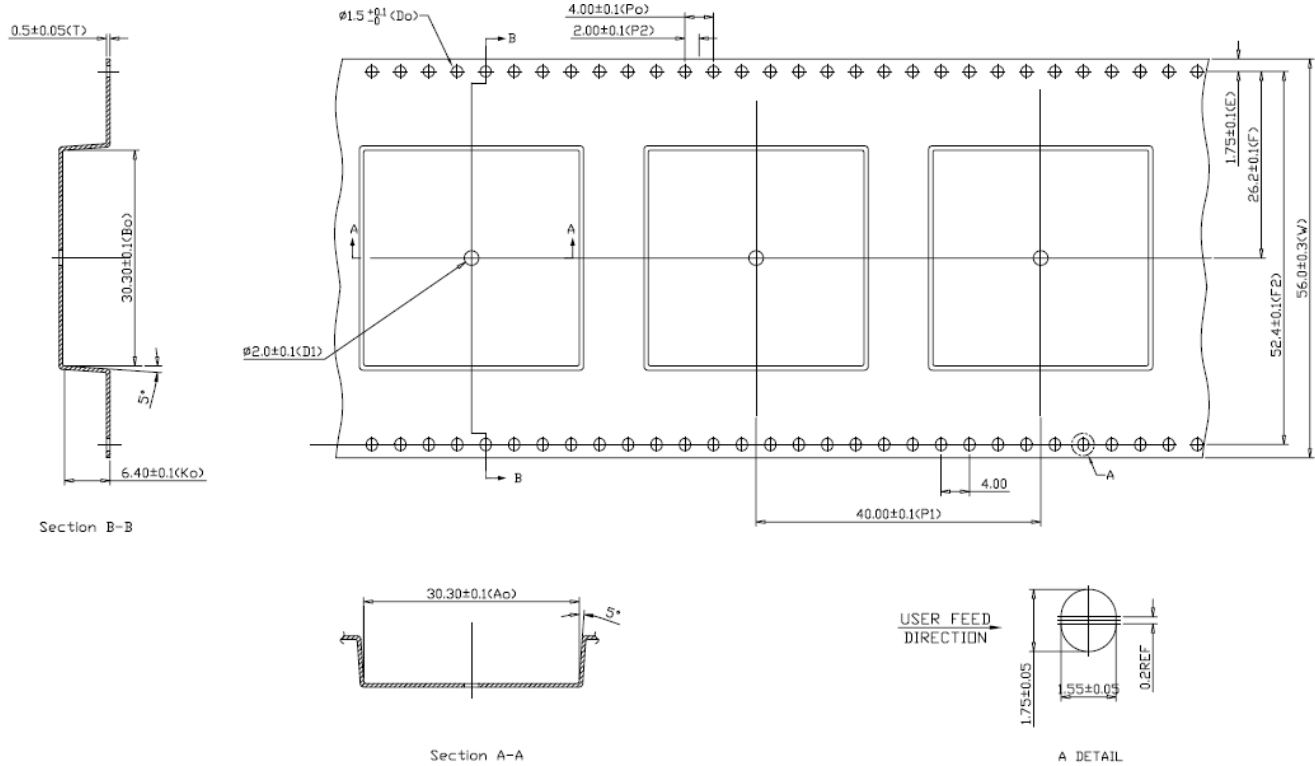


PCB BOTTOM VIEW



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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[PD0922J5050D2HF](#) [1E1305-3](#) [1G1304-30](#) [B0922J7575AHF](#) [2020-6622-20](#) [TP-102-PIN](#) [TP-103-PIN](#) [BD1222J50200AHF](#)