

RF Diplex Filter 5 - 1218 / 1350 - 1700 MHz

Rev. V2

Features

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

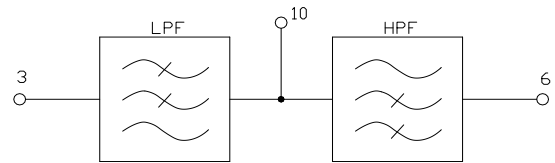
Description

MACOM's MAFL-011030 is a low cost, SMT diplex filter designed for CATV, CPE, STB, cable modem applications.

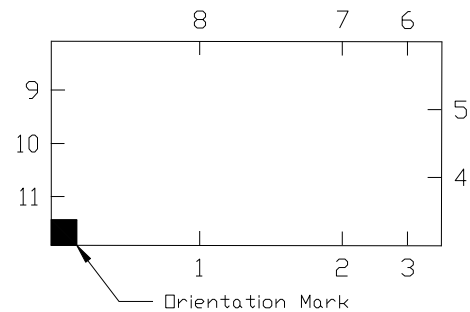
Target Electrical specifications: $T_A = 25^\circ\text{C}$, Z_0

Parameter	Units	Min	Typ	Max.	
Insertion loss					
	5-1218 MHz	dB	—	1.0	1.5
	1350-1400 MHz	dB	—	1.4	1.6
1400-1700 MHz	dB	—	1.0	1.5	
Rejection					
	5-1000 MHz	dB	40	45	—
	1002-1218 MHz	dB	38	41	—
1350-1700 MHz	dB	40	45	—	
Isolation					
	5-1000 MHz	dB	40	45	—
	1002-1218 MHz	dB	38	45	—
1350-1700 MHz	dB	40	45	—	
Return loss					
	5-100 MHz	dB	14	18	—
	100-1218 MHz	dB	12	15	—
1350-1700 MHz	dB	12	15	—	

Functional Schematic



Pin Configuration



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

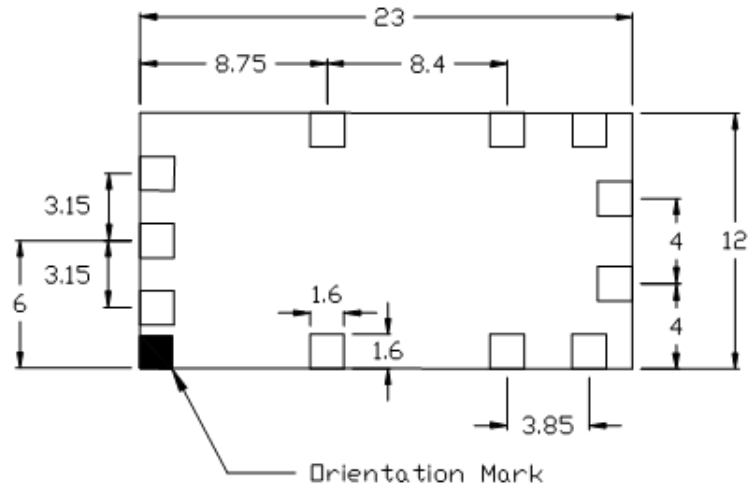
Recommended Maximum Ratings ^{4,5}

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

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

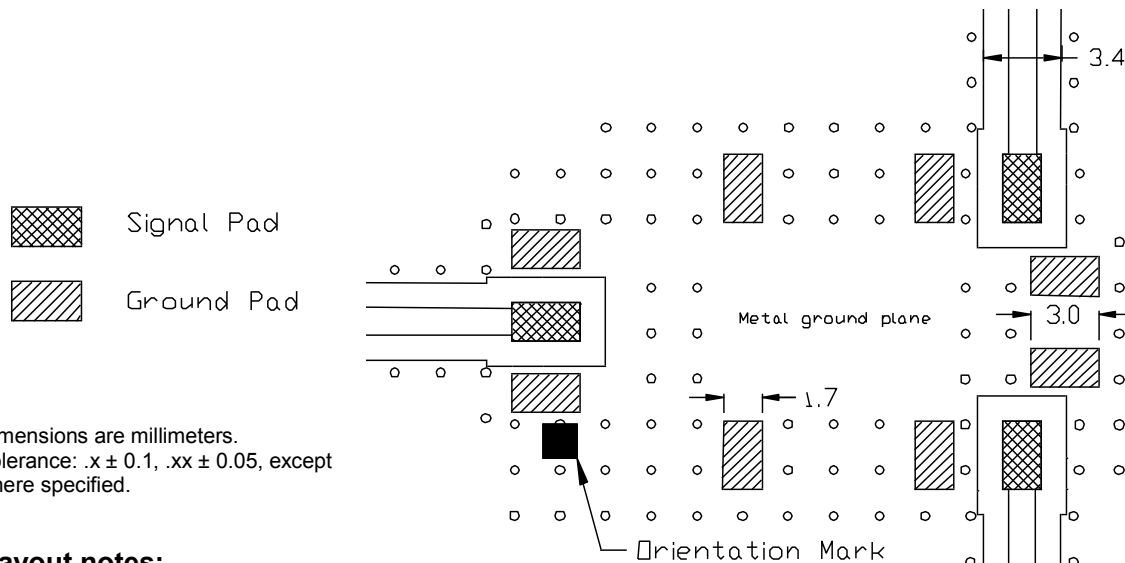
* Restrictions on Hazardous Substances, European Union Directive

Part Outline (Viewed from top)



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

Recommended application PCB



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

Layout notes:

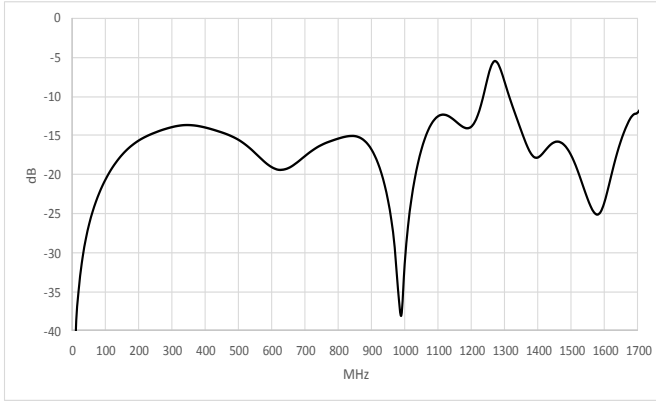
- Track dimension = 1.2mm
- Gap dimension = 1.0mm
- It is not recommended to run RF tracks under the filter unless they are greater than 1.6mm below the base of the filter.
- RF shield should be kept a minimum of 20mm above the filter.
- The filter substrate is 0.8mm thick FR-4 material. A metal ground 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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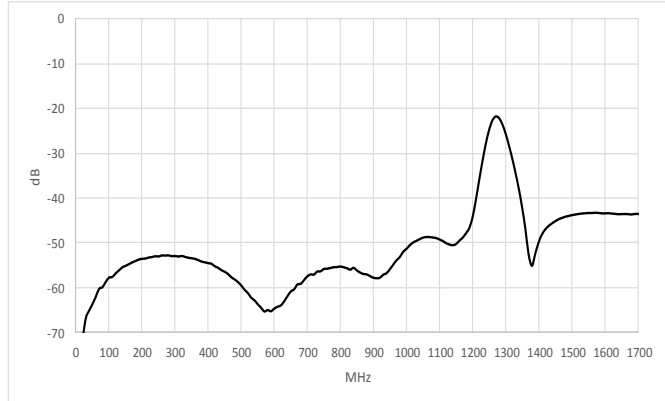
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Typical performance: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

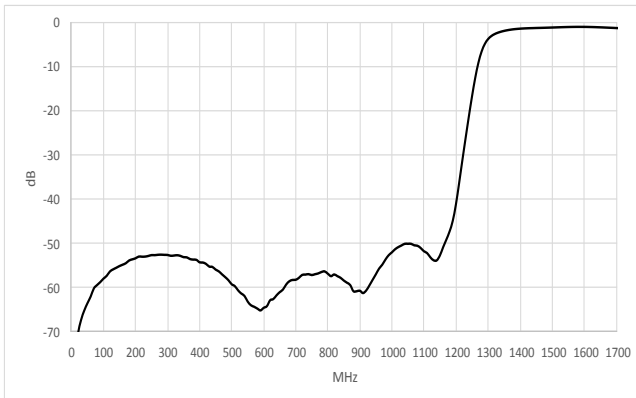
Input return loss



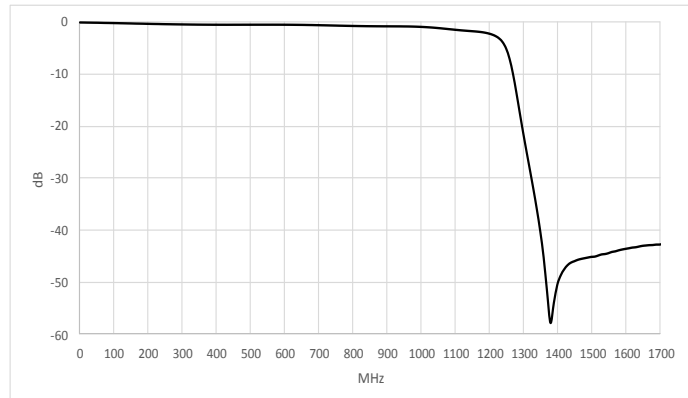
Isolation



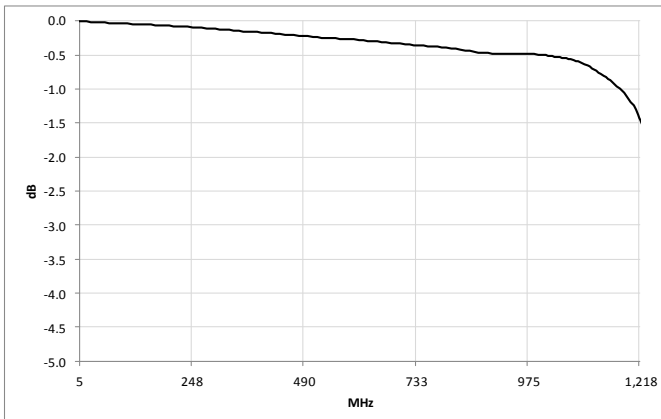
High Pass Filter



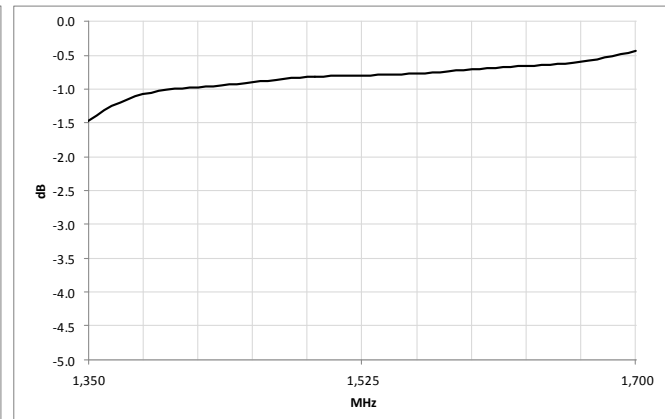
Low Pass Filter



High Pass Filter



Low Pass Filter

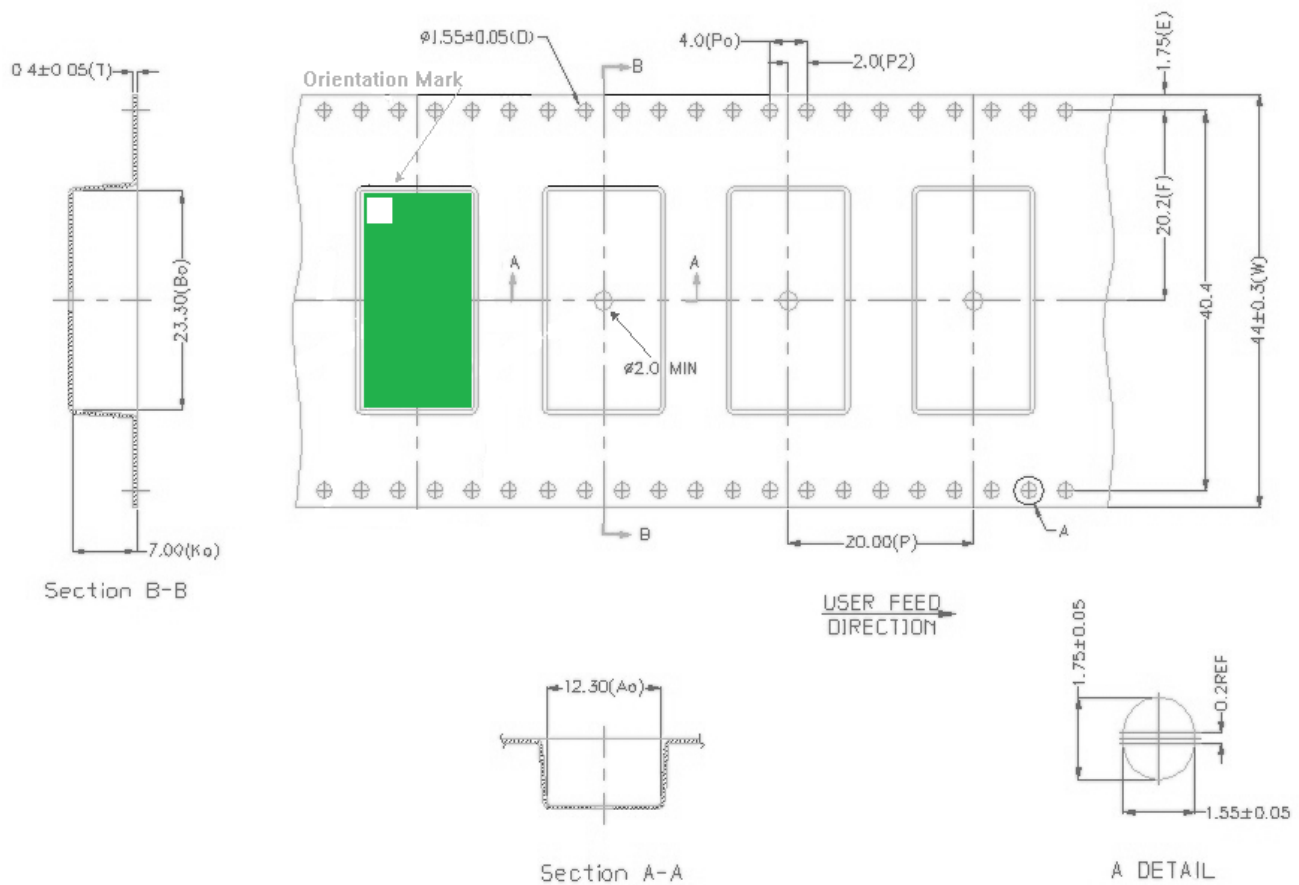


Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	300
Reel Size	mm	330
Tape Width	mm	44
Pitch	mm	20
Ao	mm	12.3
Bo	mm	23.3
Ko	mm	7.0
Orientation	-	F30
Reference Application Note ANI-019 for orientation		

Ordering Information

Part Number	Package
MAFL-011030	Tape & Reel



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