

MAFL-011024



Broadband CATV Diplexer 5 - 85 / 108 - 1002 MHz

Rev.V2

Features

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

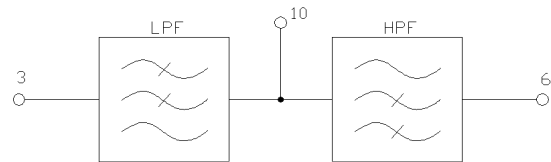
Description

MACOM's MAFL-011024 is a low cost, SMT diplex filter designed for CATV, CPE, STB, cable modem

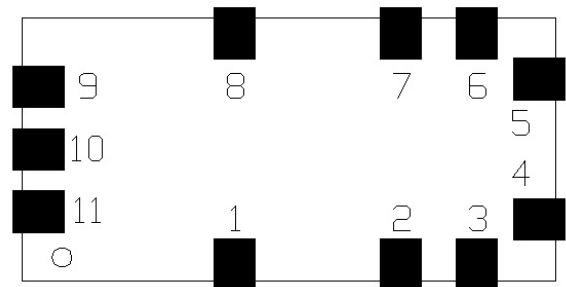
Electrical specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

Parameter	Units	Min.	Typ.	Max.
Insertion loss	5-80 MHz	—	0.5	1.1
	80-85 MHz	—	1.1	1.2
	108-1002 MHz	—	0.5	1.2
Rejection	5-70 MHz	45	50	—
	70-85 MHz	37	42	—
	108-1002 MHz	45	50	—
Crossover Isolation				
85-108 MHz	dB	16	19	—
Return loss	5-85 MHz	dB	12	16
	108-1002 MHz	dB	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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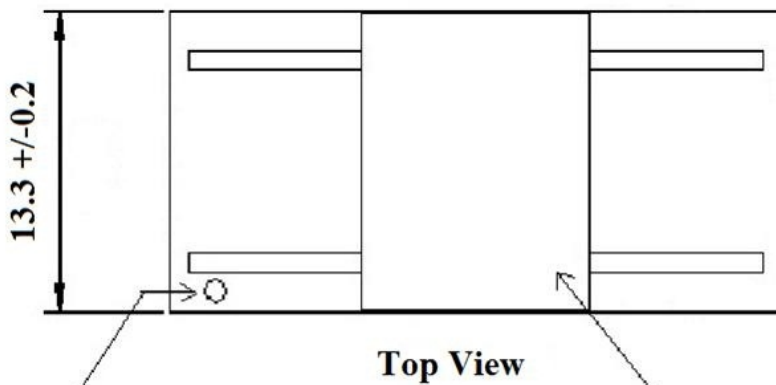
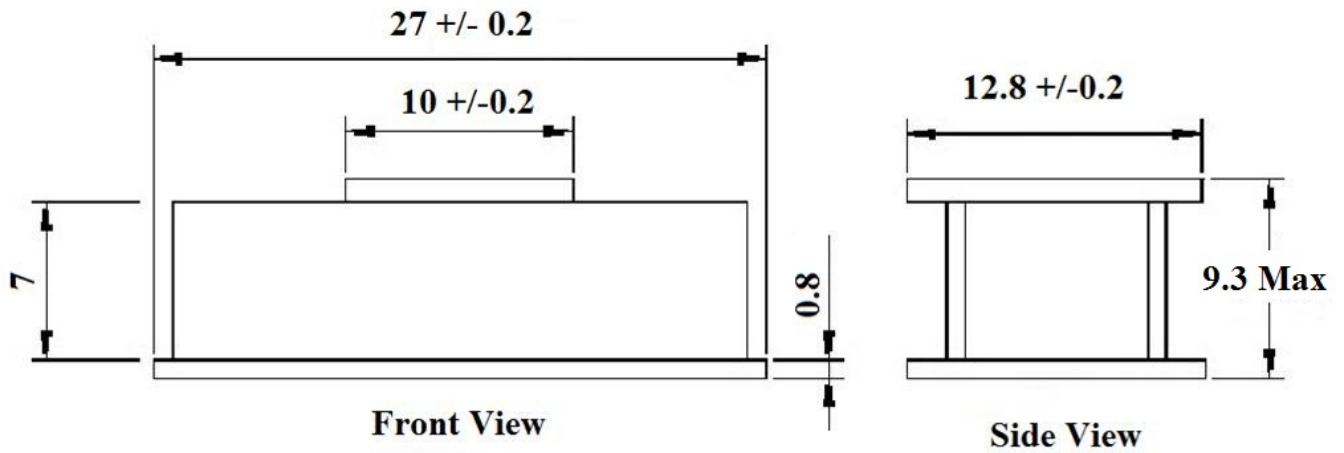
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Filter Dimensions

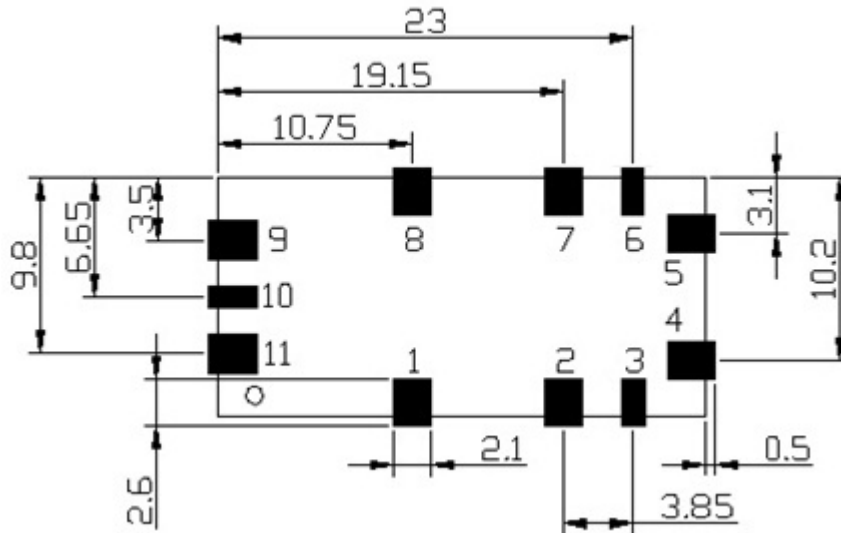


Orientation Dot

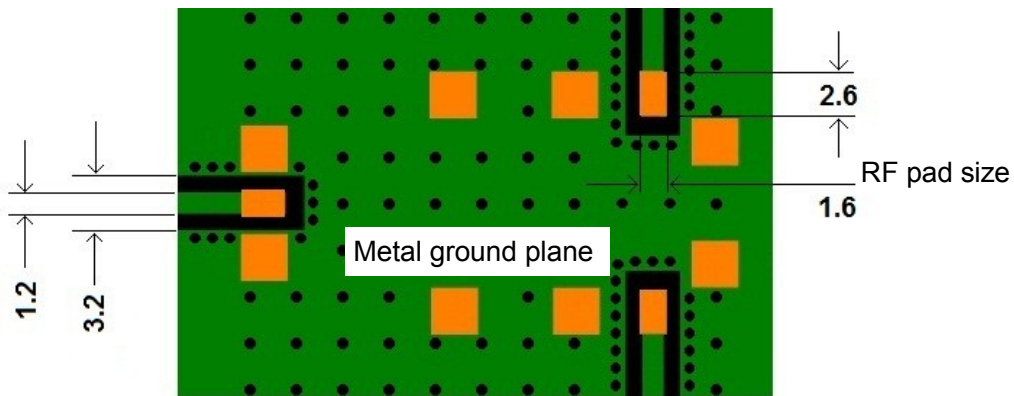
Pick and Place cover

Dimensions are millimeters.
Tolerance: ± 0.2 mm

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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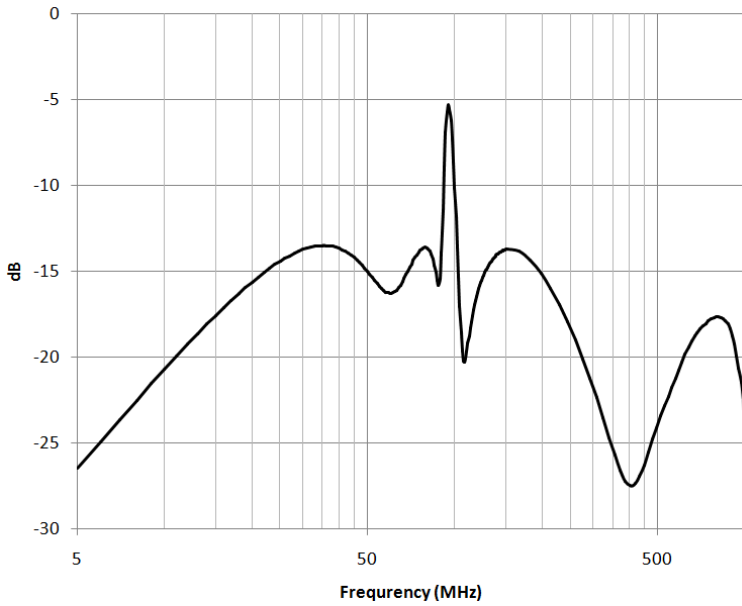


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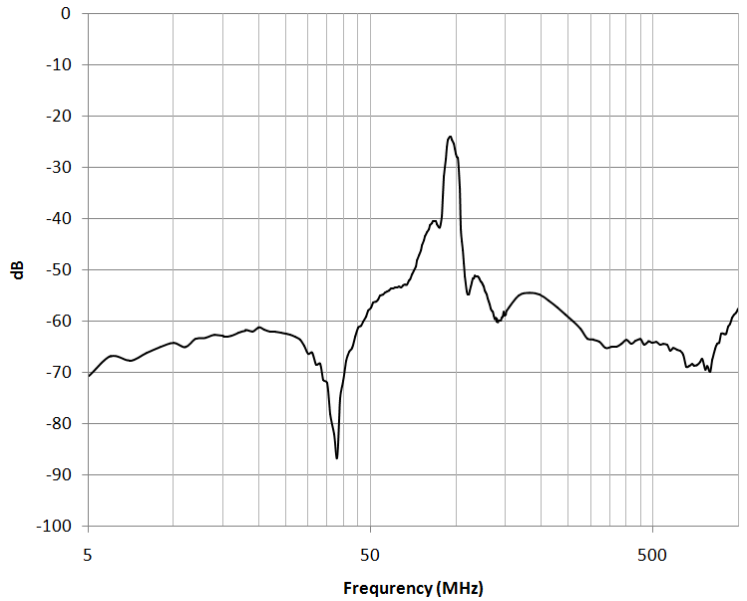
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Typical performance: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

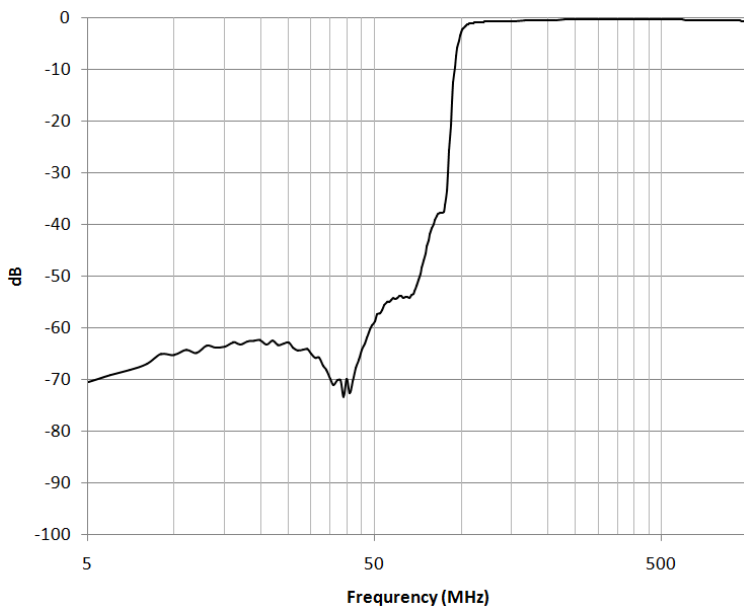
Input return loss



Isolation



High pass filter insertion loss



Low pass filter insertion loss

