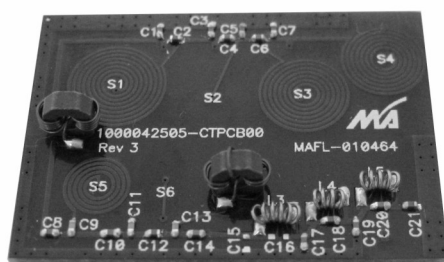


## Features

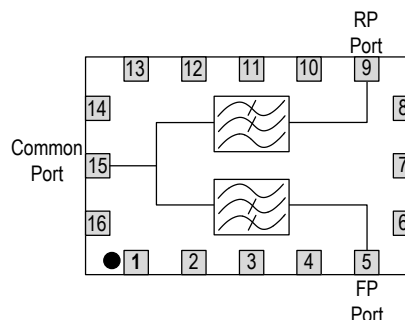
- 75  $\Omega$
- Surface Mount Technology
- RoHS\* Compliant

## Description

The MAFL-010464-CD0B20 is a low profile diplex filter designed for use in CATV set-top box, cable modem applications.



## Functional Block Diagram



## Pin Configuration

Pin #	Function
1 - 4, 6 - 8, 10 - 14, 16	Ground
5	Forward Path Port
9	Reverse Path Port
15	Common Port

## Electrical Specifications<sup>1</sup>: Freq. = 5 - 1525 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 75 $\Omega$

Parameter	Frequency Test Condition (MHz)	Units	Min.	Typ.	Max.
Forward Path Loss	5 - 38	dB	-60	-63	—
	38 - 42		-58	-60	—
	88 - 800		—	-1.2	-1.5
	800 - 1002		—	-2.1	-2.5
	1125 - 1150		-30	-33	—
Reverse Path Loss	1150 - 1525	-32	-35	—	
	5 - 38	dB	—	-1.2	-1.8
	38 - 42		—	-1.8	-2.1
	54 - 60		-47	-52	—
	60 - 108		-61	-70	—
108 - 500	-70		-78	—	
Common Port Return Loss	500 - 1002	-54	-60	—	
	5 - 42	dB	-12	-15	—
	88 - 800		-10	-12	
800 - 1002	-9		-10		

1. Typical specifications may only be achieved when using the recommended filter layout.

\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

## Ordering Information

Part Number	Package
MAFL-010464-CD0B20	900 piece reel

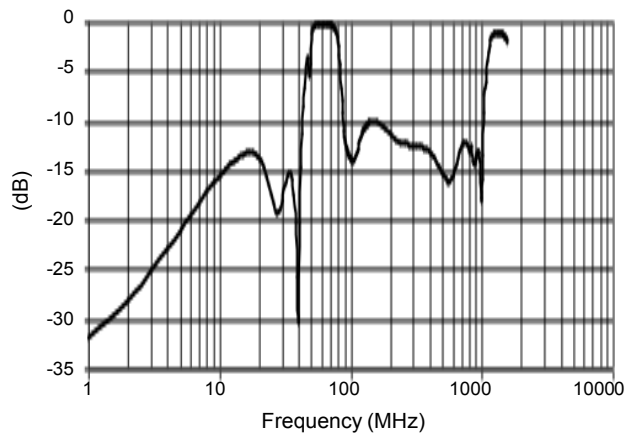
## Absolute Maximum Ratings<sup>1,2</sup>

Parameter	Value
RF Power	250 mW
DC Current	30 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

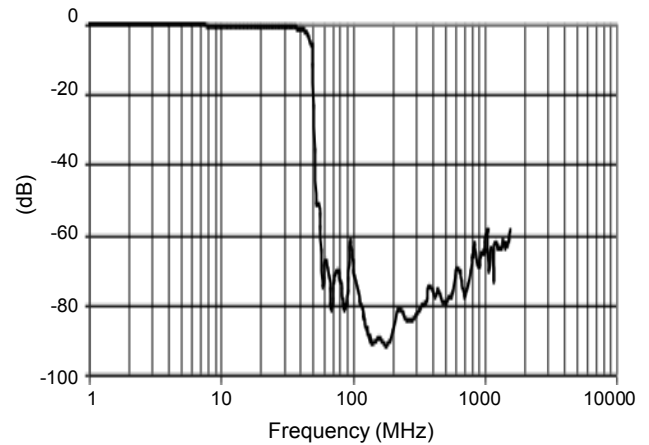
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

## Typical Performance Curves

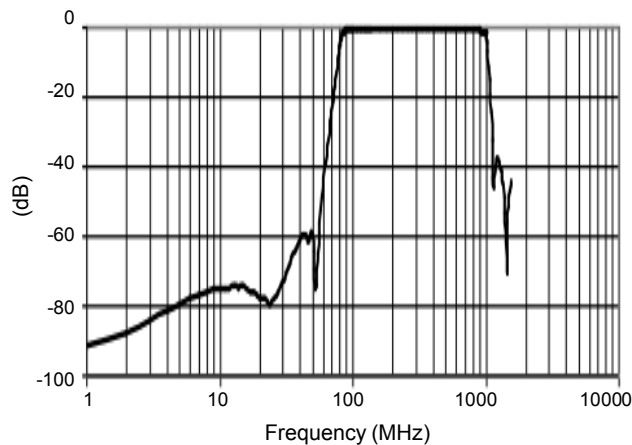
**Common Port Return Loss**



**Reverse Path Filter**

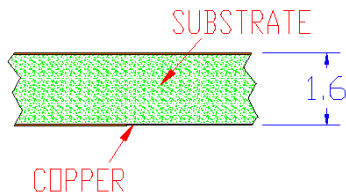


**Forward Path Filter**

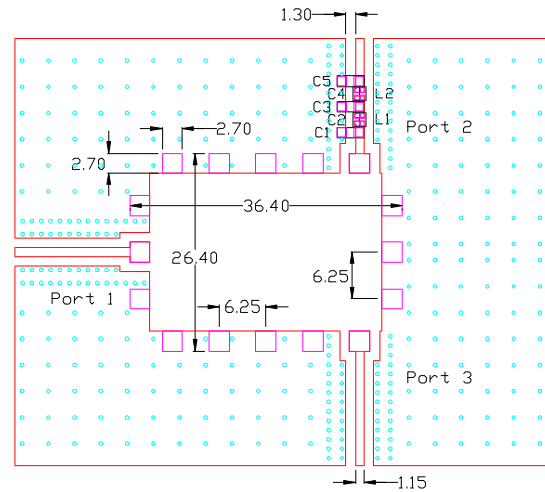


## Recommended PCB Configuration

- Track dimension = 1.15 mm
- Gap dimension = 1.3 mm
- It is not recommended to run tracks under the filter unless they are greater than 1.6 mm below the base.
- Ground should be 1.6 mm below the base of the filter.
- Area directly under the filter should be free from copper.
- RF shield should be kept a minimum of 6mm above the filter.
- Recommended stack up as follows:

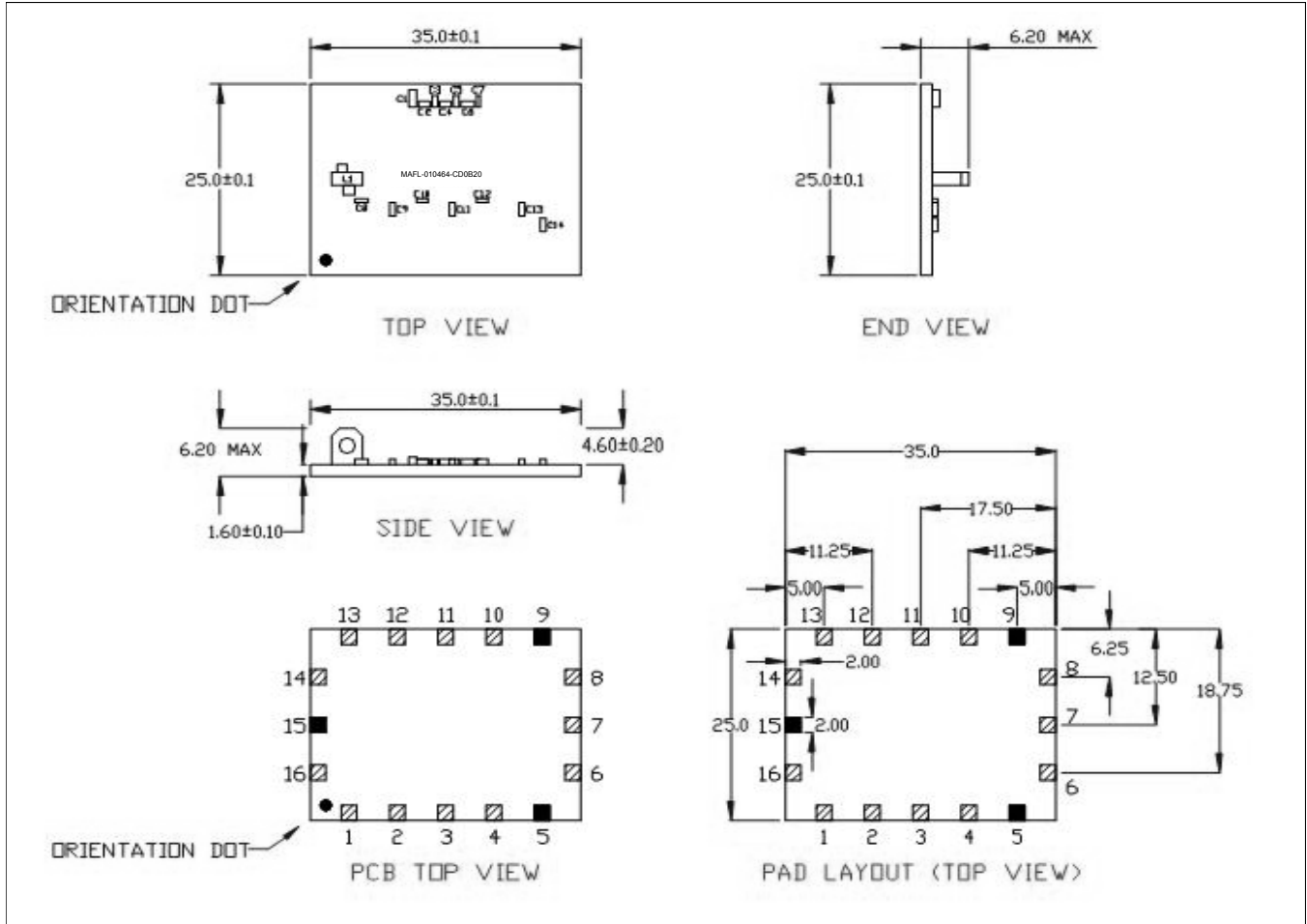


Dimensions in mm. Tolerance:  $.x \pm 0.1$ , unless otherwise specified



Ref. Designator	Description
C1, C5	0603, 15 pF, +/-2%, 50 V, COG
C2	0402, 22 pF, +/-2%, 50 V, COG
C3	0603, 43 pF, +/-2%, 50 V, COG
C4	0402, 9.1 pF, +/-2%, 50 V, COG
L1, L2	0402, 150 nH, +/-5%

## Outline Drawing



Dimensions in mm. Tolerance: .x ± 0.1, unless otherwise specified.

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