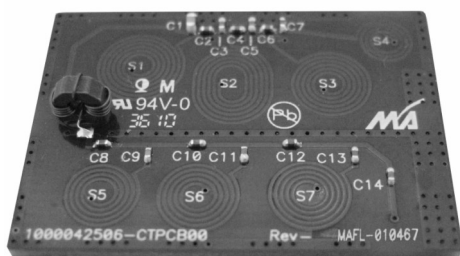


## Features

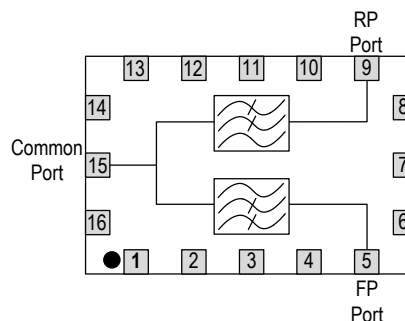
- 75  $\Omega$
- Surface Mount Technology
- RoHS\* Compliant

## Description

The MAFL-010467-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 - 1002 MHz, T<sub>A</sub> = 25°C, P<sub>IN</sub> = 0 dBm, Z<sub>0</sub> = 75 $\Omega$

Parameter	Frequency Test Condition (MHz)	Units	Min.	Typ.	Max.
Forward Path Loss	5 - 50	dB	-60	-68	—
	50 - 65		-50	-55	—
	108 - 1002		—	-0.8	-1.2
Reverse Path Loss	5 - 65	dB	—	-1.5	-1.8
	87.5 - 108		-46	-50	—
	108 - 136		-70	-78	—
	136 - 195		-70	-80	—
Common Port Return Loss	195 - 1002	dB	-61	-63	—
	5 - 65		-12	-13	—
	108 - 760		-10	-11	—
	760 - 1002		-9.5	-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-010467-CD0B20	900 piece reel

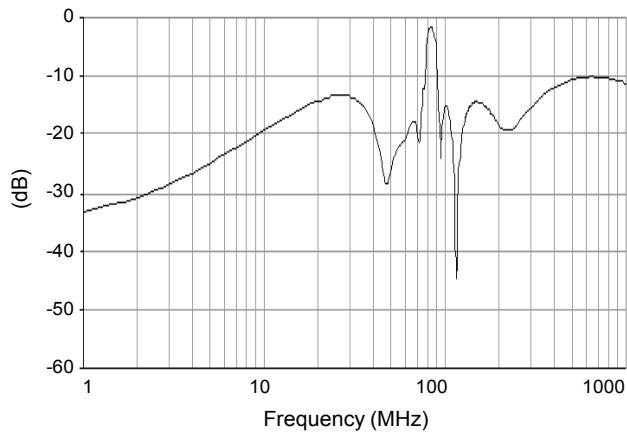
## Absolute Maximum Ratings<sup>1,2</sup>

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

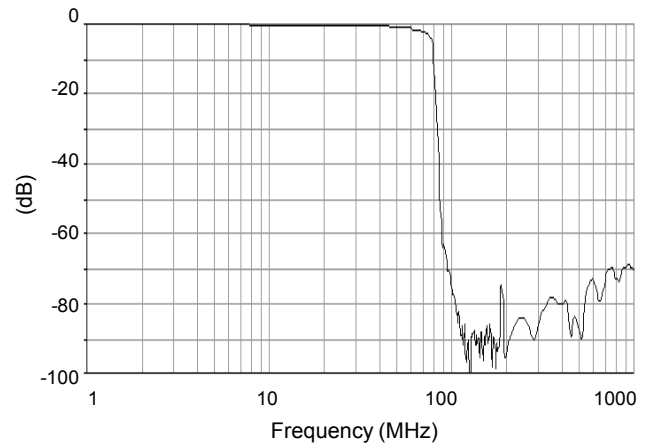
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

## Typical Performance Curves

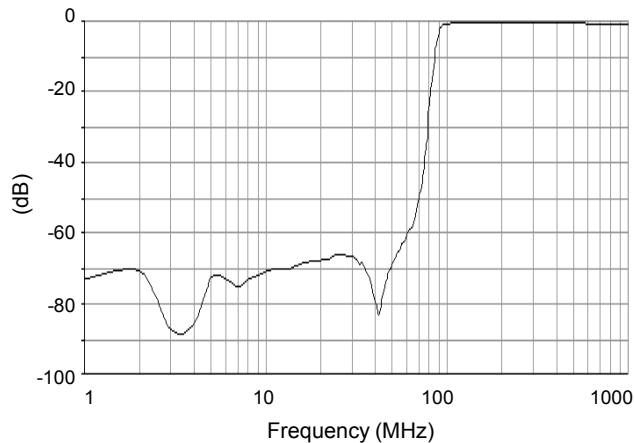
**Common Port Return Loss**



**Reverse Path Filter**

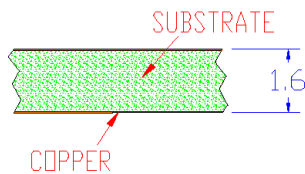


**Forward Path Filter**

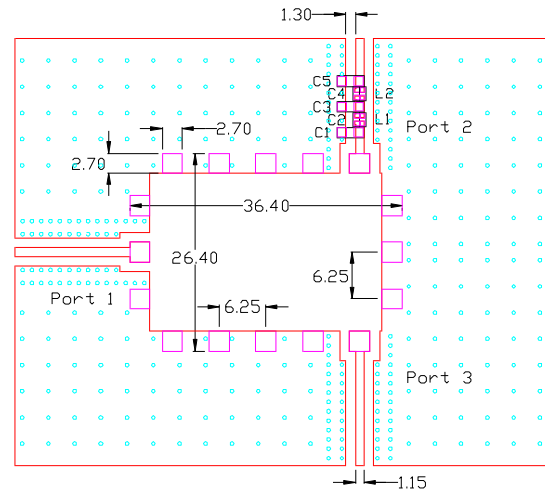


## Recommended PCB Configuration

- 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:

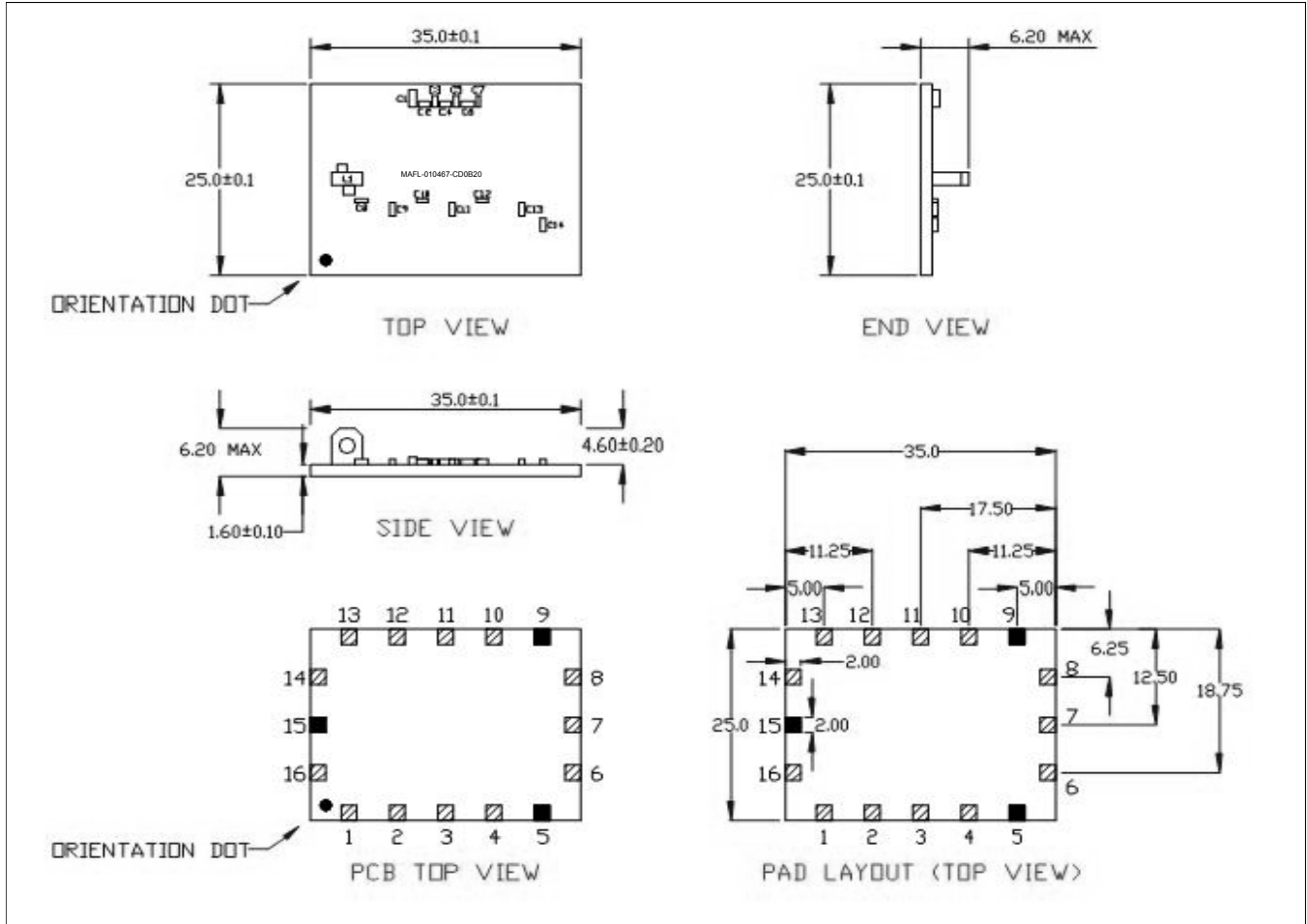


Dimensions in mm. Tolerance:  $.x \pm 0.1$ , unless otherwise specified



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.

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.