

## Features

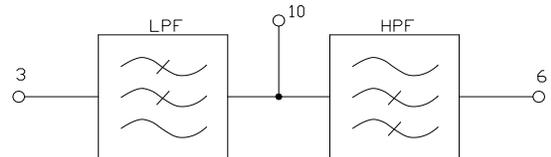
- 75 Ohm
- SMT unit
- RoHS compliant
- Excellent temperature stability
- Excellent repeatability

## Description

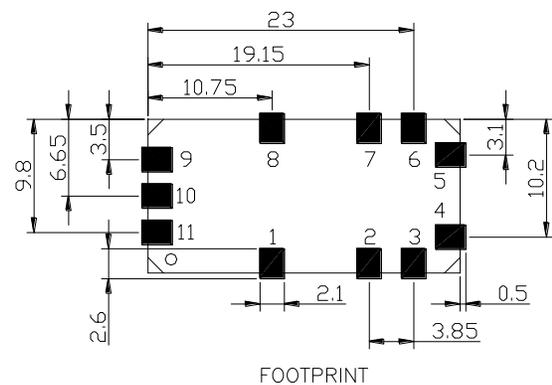
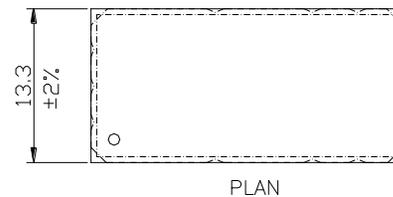
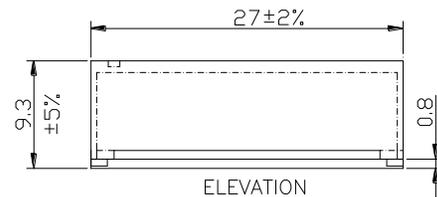
M/A-COM's MAFL-009055-CD4254 is a low cost, SMT diplex filter designed for CATV, DTV, DBS, cable modem and set top box applications.



## Schematic



## Case style SM-162



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

## Pin Configuration

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

## Ordering Information

Part number	Package
MAFL-009055-CT4254	200 per reel
MAFL-009055-CT42TB	Customer test board

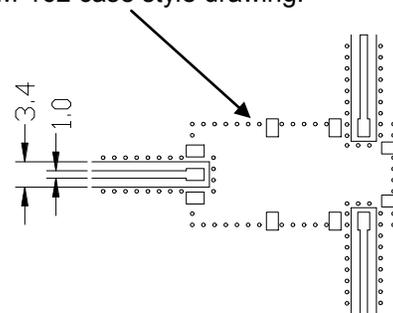
**Electrical specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

Parameter	Test conditions	Units	Min.	Typ.	Max.
Frequency range	5-42 MHz / 54-1000 MHz				
Insertion loss	5-42 MHz	dB	—	0.5	1.1
	54-1000 MHz	dB	—	0.5	1.2
Isolation	5-37 MHz	dB	50	55	—
	37-42 MHz	dB	43	48	—
	42-54 MHz	dB	16	19	—
	54-100 MHz	dB	45	50	—
	100-600 MHz	dB	50	55	—
Input port return loss	5-42 MHz	dB	12	16	—
	54-1000 MHz	dB	12	16	—

Additional specifications (MHz)	Group delay (ns)	
	Typ.	Max
40.5 - 42	5	20
54 - 55.5	10	20

### Recommended PCB configuration

Note: Pad size dimensions match size of those specified in SM-162 case style drawing.



Note: Substrate is 1.6mm thick FR-4. A ground plane is directly under diplexer. This is connected to the ground plane on the bottom of the PCB. This forms a 75 Ohm co-planar wave guide for input and output transmission lines.

### Absolute Maximum Ratings

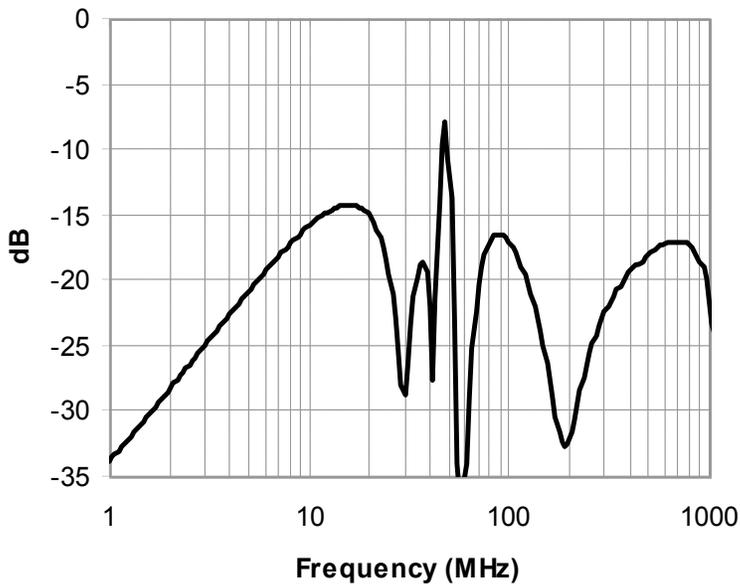
Parameter	Absolute maximum
RF power	250mW
DC current	30mA
Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C

## Broadband CATV Diplexer 5 - 1000 MHz

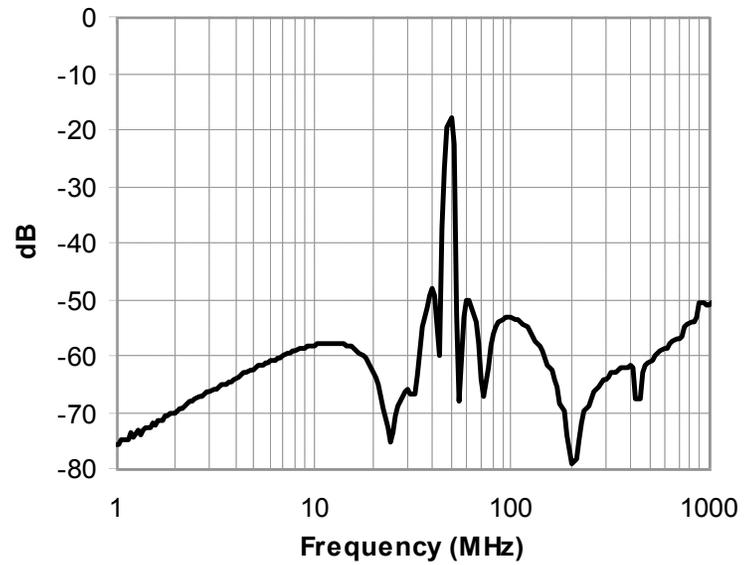
Rev. V3

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

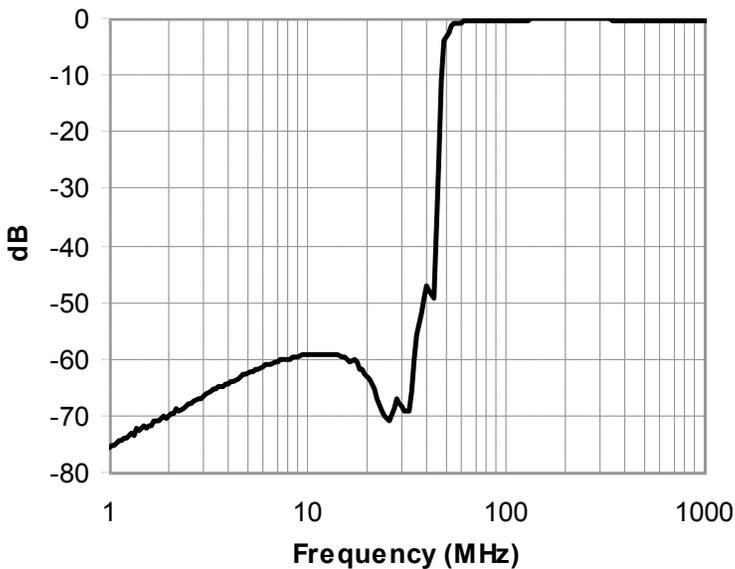
**Input return loss**



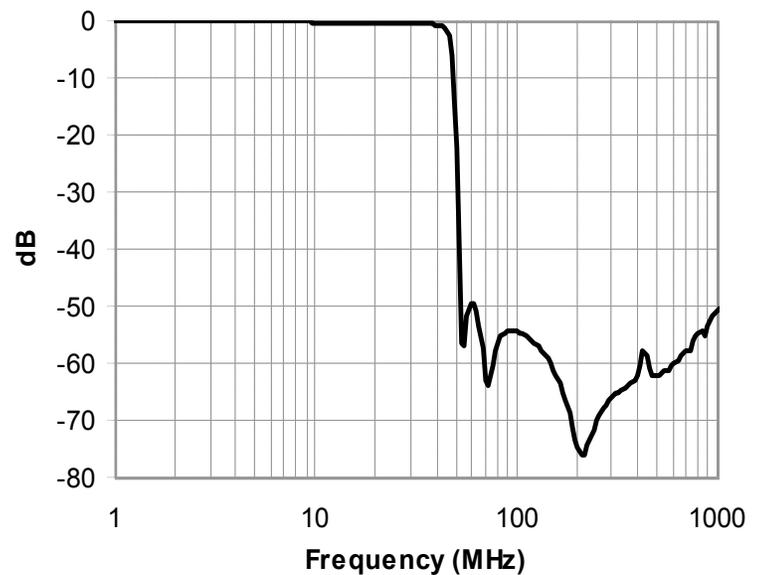
**Isolation**



**High pass filter insertion loss**



**Low pass filter insertion loss**



M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM 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.