

Broadband CATV Diplexer 5 - 1000 MHz

M/A-COM Products
Part Status: V1

Features

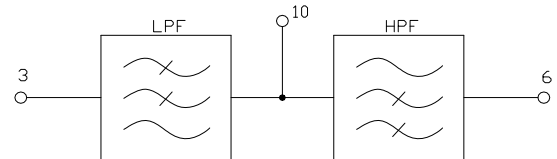
- 75 Ohm
- SMT Unit
- RoHS Compliant
- Excellent Temperature Stability
- Excellent Repeatability

Description

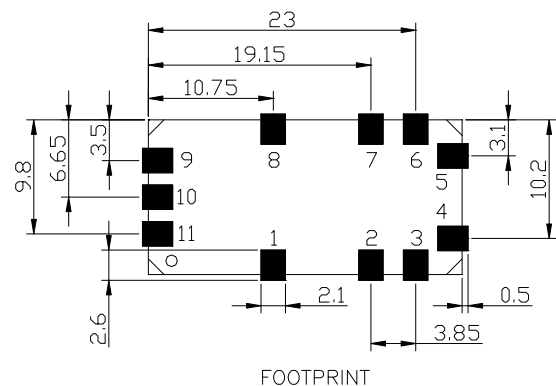
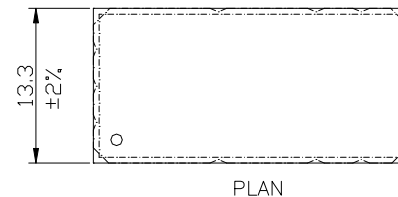
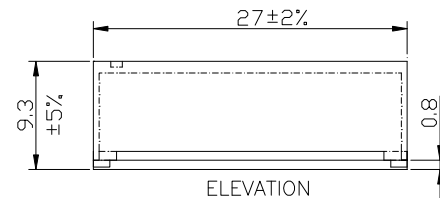
M/A-COM's MAFL-009055-CD4254 is a low cost, SMT diplex filter designed for CATV, DTV, DBS, cable modem and set top box applications. The technology used in this design is patent pending.



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

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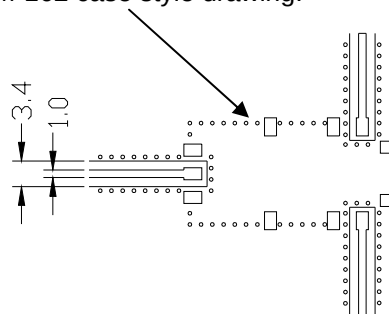
Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

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	—
	600-1000 MHz	dB	45	50	—
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

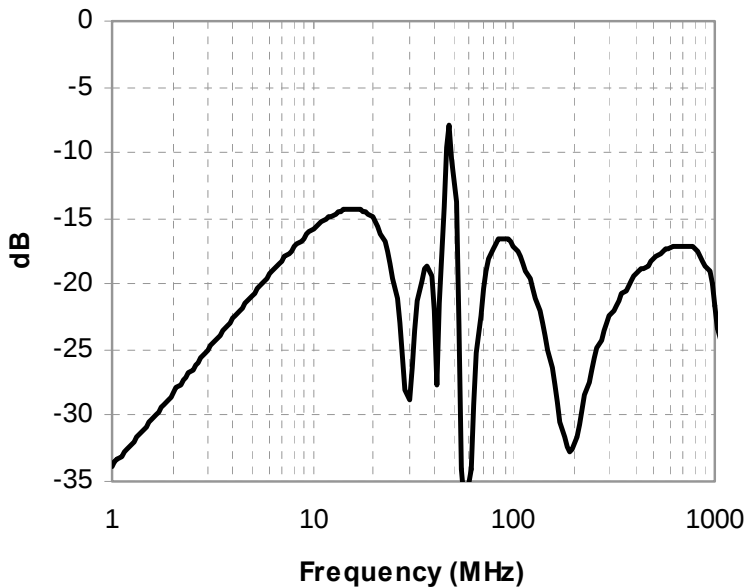
Parameter	Absolute Maximum
RF Power	250mW
DC Current	30mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C

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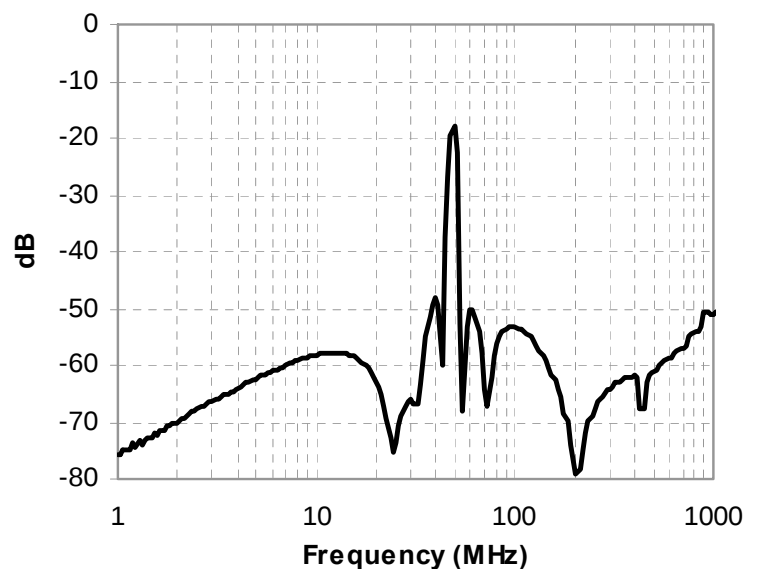
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Typical Performance: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

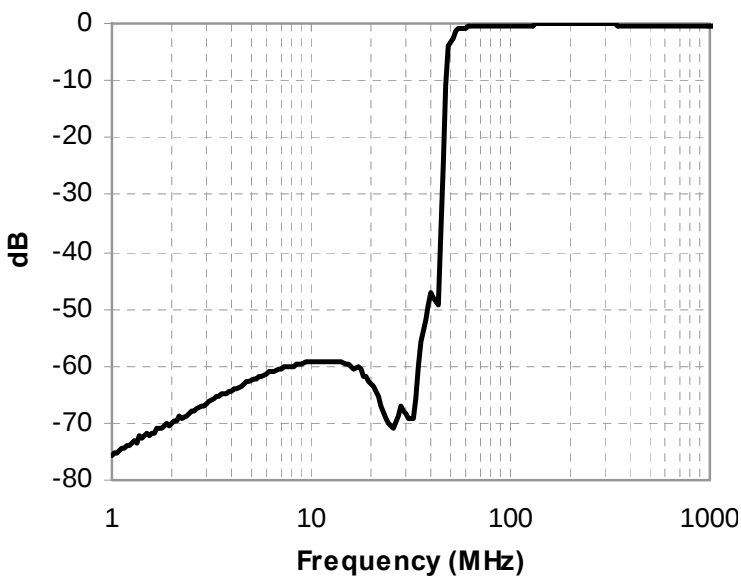
Input Return Loss



Isolation



High Pass Filter Insertion Loss



Low Pass Filter Insertion Loss

