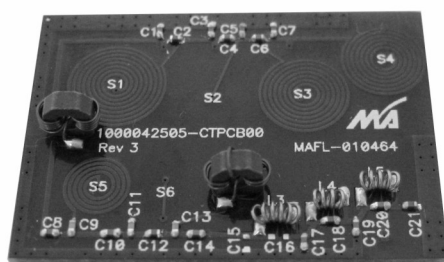


Features

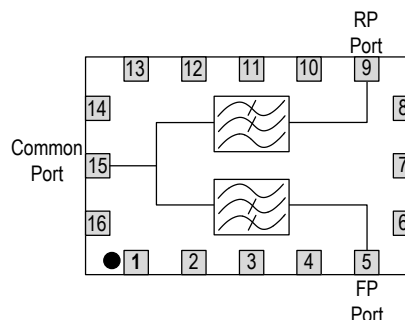
- 75 Ω
- Surface Mount Technology
- RoHS* Compliant

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 Specifications¹: Freq. = 5 - 1525 MHz, T_A = 25°C, Z₀ = 75 Ω

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

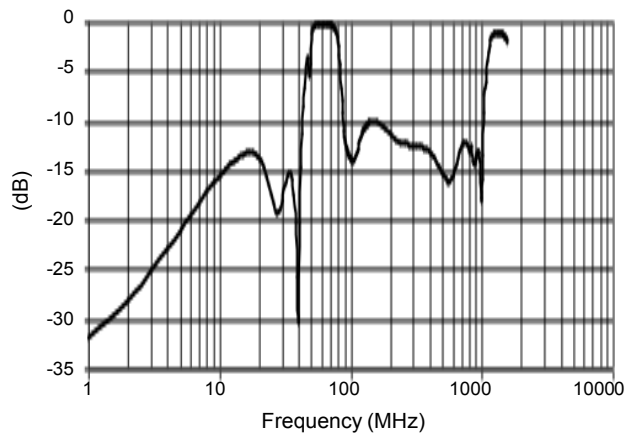
Absolute Maximum Ratings^{1,2}

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

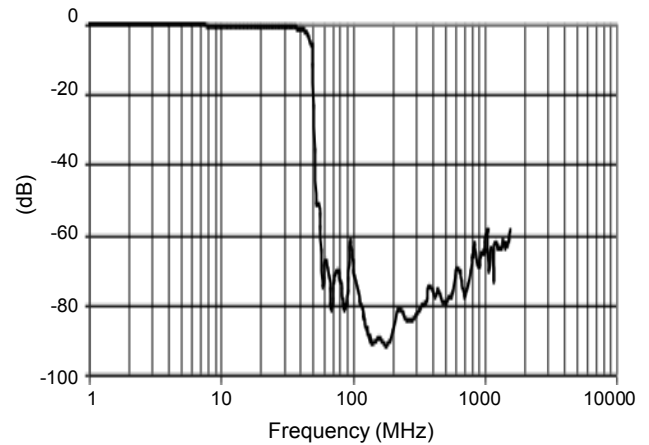
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Typical Performance Curves

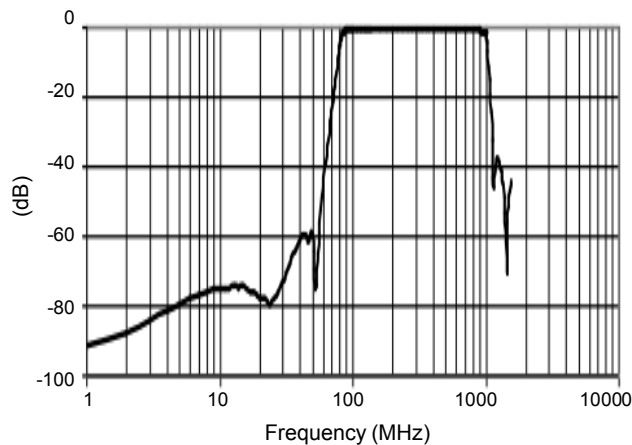
Common Port Return Loss



Reverse Path Filter

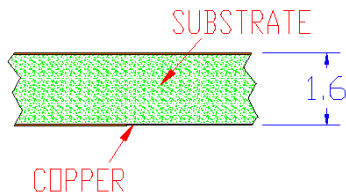


Forward Path Filter

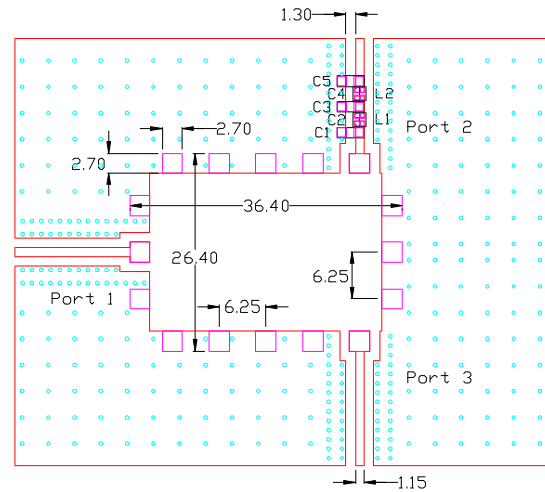


Recommended PCB Configuration

- 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:

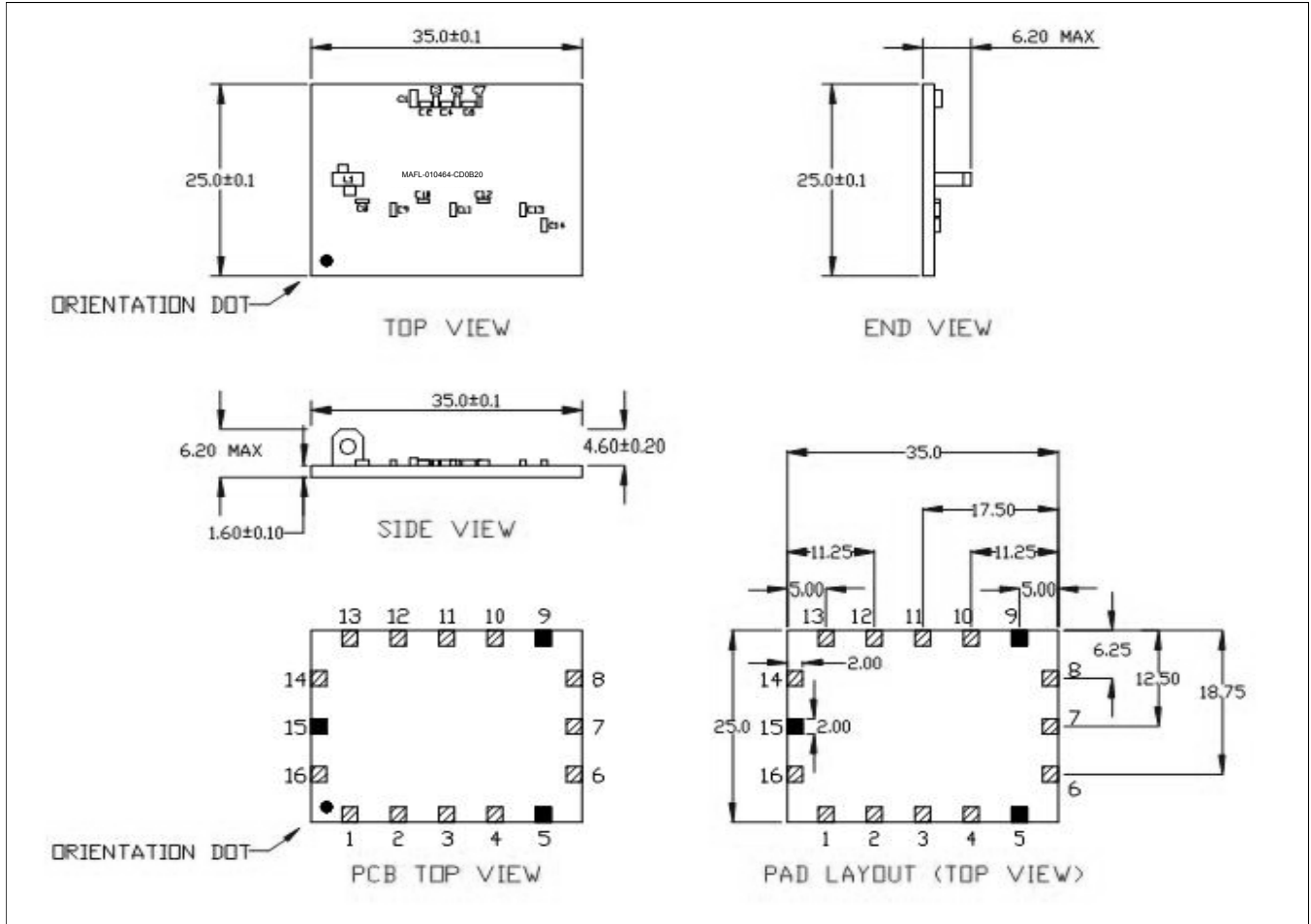


Dimensions in mm. Tolerance: $.x \pm 0.1$, unless otherwise specified



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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