

Application Note

AN - 4005



MAFL-009272 Improved rejection circuit 5 - 1002 / 1125 - 1550 MHz

Released Rev. V1

Features

- Improved Rejection
- RoHS Compliant
- Lead Free
- 75 Ohm

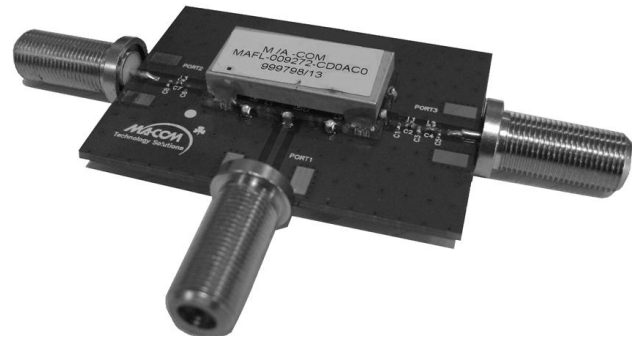
Description

• M/A-COM Technology Solutions' MAFL-009272-CD0AC0 is a surface mount diplex filter unit designed for MoCA applications.

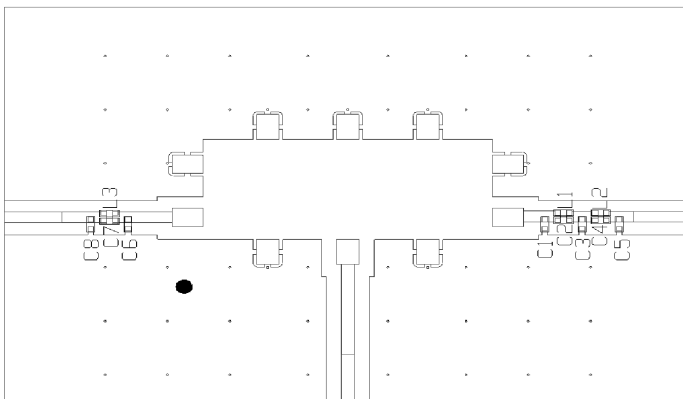
This filter includes the addition of an off chip circuit external to the diplex filter. This circuit improves rejection between 2GHz - 3GHz.

Recommended rejection circuit configuration, Recommended component values and typical spec table are given below.

Product Image



Recommended Rejection Circuit Configuration



Recommended Component Values

Description	Ref Des	Qty
CAP, SMT, 0402, 0.3pF, +/- 2% 50V,COG	C1	1.00
CAP, SMT, 0402, 1.2pF, +/- 2% 50V,COG	C2	1.00
CAP, SMT, 0402, 0.82pF, +/- 2% 50V,COG	C3	1.00
CAP, SMT, 0402, 1.1pF, +/- 2% 50V,COG	C4	1.00
CAP, SMT, 0402, 0.5pF, +/- 2% 50V,COG	C5	1.00
Not Stuffed	C6	-
CAP, SMT, 0402,1.8pF, +/- 2% 50V,COG	C7	1.00
CAP, SMT, 0402, 0.5pF, +/- 2% 50V,COG	C8	1.00
IND, SMT, 0402, 3.3nH, +/-5%, 500mA	L1	1.00
IND, SMT, 0402, 2.7nH, +/-5%, 500mA	L2	1.00
IND, SMT, 0402, 4.7nH, +/-5%, 500mA	L3	1.00

Typical spec

Parameter	Units	Typ
Common To Low		
Insertion Loss		
5-42 MHz	dB	0.1
42 – 860 MHz	dB	0.6
860 – 1002 MHz	dB	1.5
Rejection		
1130 – 1550 MHz	dB	40
Common to High		
Insertion Loss		
1125 – 1550 MHz	dB	1.7
Rejection		
5-1002 MHz	dB	40
2250 – 2400 MHz	dB	35
2400 – 2600 MHz	dB	50
2600 – 3000 MHz	dB	34
Common Port Return Loss		
5-600 MHz	dB	16
600 – 950 MHz	dB	12
950 – 1002 MHz	dB	13
1125 – 1200 MHz	dB	12
1200 – 1550 MHz	dB	12
Common Port voltage transient	V	200

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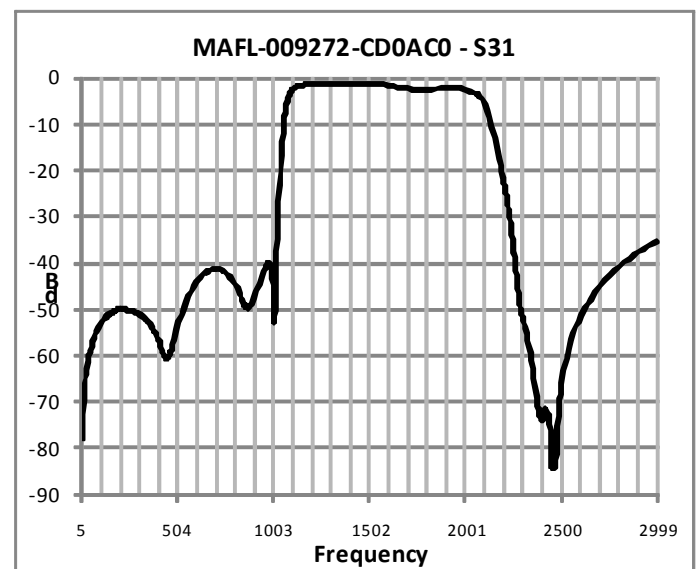
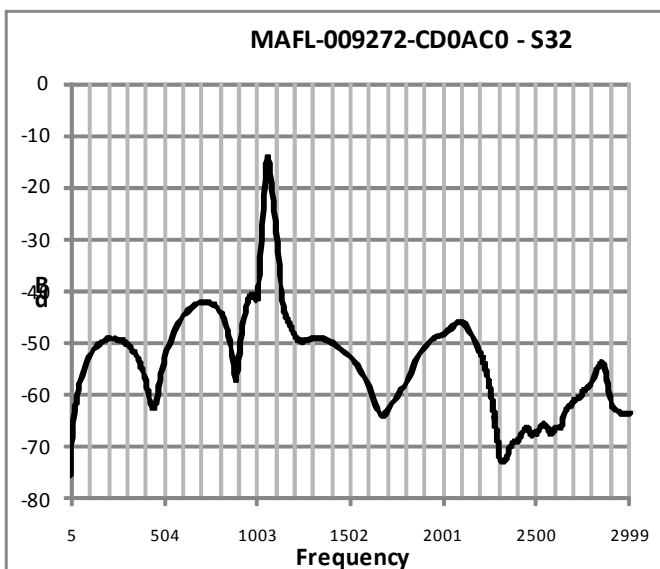
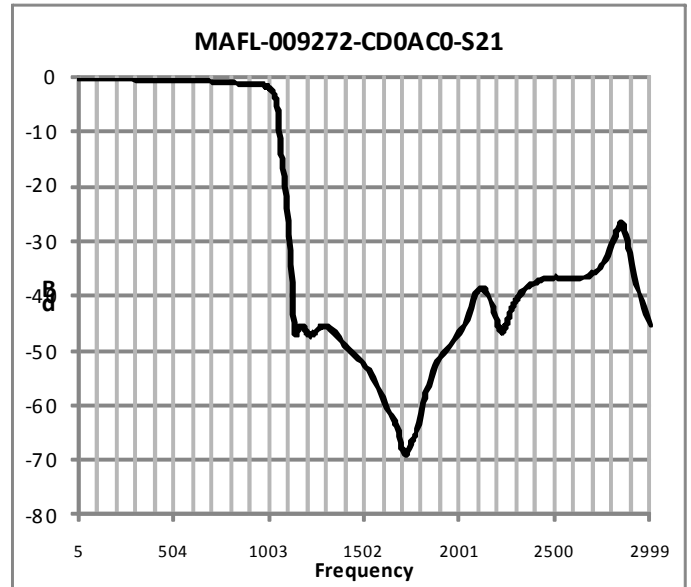
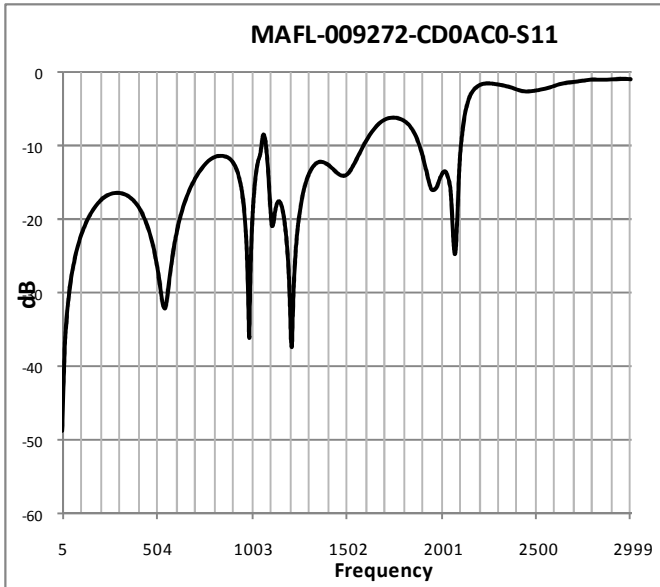
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Typical Filter Performance with off chip circuit



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