

# New Product Announcement!

Ceramic

## Dual Low Pass Filter

DLFCV-1000+

50Ω DC to 1000 MHz



CASE STYLE: JV1210C-1

### The Big Deal

- Low insertion loss
- Fast roll off
- Small size
- Dual filter in 1210 package

### Product Overview

DLFCV-1000+ is a dual low pass filter which can also operate as a balanced input /output low pass filter in LTCC package. This filter has faster roll and offers low insertion loss, low VSWR and high power handling.

### Key Features

Feature	Advantages
Faster roll off	DLFCV-1000+ is a dual low pass filter in LTCC package with 7 sections hence the roll off is faster.
Power handling	Each filter can handle 8.5W power.
Dual filter	Dual Filter in 1210 package, LTCC construction.

#### Notes

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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



50Ω      DC to 1000 MHz

## Maximum Ratings

Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input*	8.5W Max. at 25°C

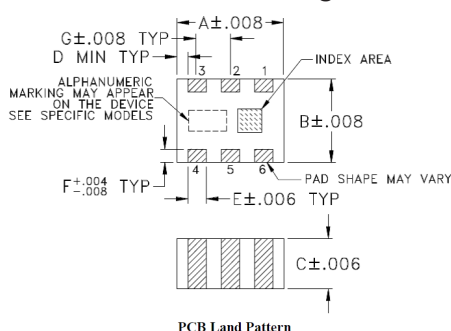
\* Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

## Pin Connections

RF IN1, RF IN2	1, 6
RF OUT1, RF OUT2	3, 4
GROUND	2, 5

**Product Marking: HB**

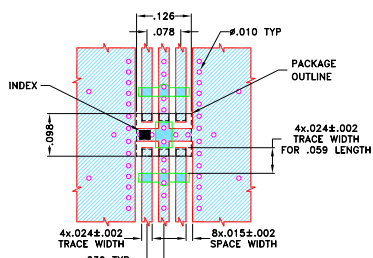
## Outline Drawing





### Outline Dimensions (inch)

A	B	C	D	E	F	G
.126	.098	.059	.004	.022	.016	.039
3.2	2.5	1.50	.1	.56	.4	1.0
H	J	K	L	M	WT.GRAMS	
-	-	.177	.024	.059	.03	
-	-	4.5	6	1.5		

**Demo Board MCL P/N: TB-867+**  
**Suggested PCB Layout (PL-483)**



NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS  
 .010"  $\pm$  .001". COPPER: 1/2 OZ. EACH SIDE.  
 FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
-  DENOTES PCB COPPER LAYOUT WITH SMOBC  
 (SOLDER MASK OVER BARE COPPER)
-  DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Features

- Low insertion loss
- Small size
- Excellent return loss
- High rejection

## Applications

- Military Applications
- VHF/UHF transmitters/receivers
- Harmonic rejection
- Output of the A/D convertor
- Test and Measurement



CASE STYLE: JV1210C-1

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

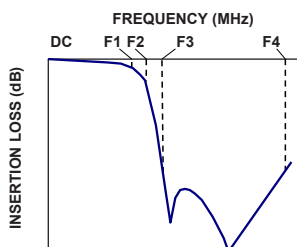
### Electrical Specifications<sup>(1,2)</sup> at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	DC-F1	DC-1000	—	1.2	2.2	dB
	Freq. Cut-Off	F2	1280	—	3.0	—	dB
	Amp Unbalance	DC-F1	DC-1000	—	0.1	—	dB
	Pha Unbalance	DC-F1	DC-1000	—	3	—	deg
	VSWR	DC-F1	DC-1000	—	1.4	—	:1
Stop Band	Insertion Loss	F3-F4	1700-5000	24	27	—	dB
	Cross Over Isolation	F3-F4	1700-5000	—	27	—	dB
	VSWR	F3-F4	1700-5000	—	20	—	:1

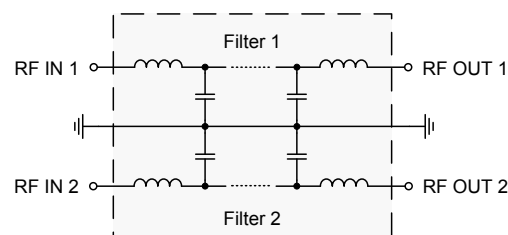
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

(2) Measured on Mini-Circuits Characterization Test Board TB-867+.

## Typical Frequency Response



### Functional Schematic

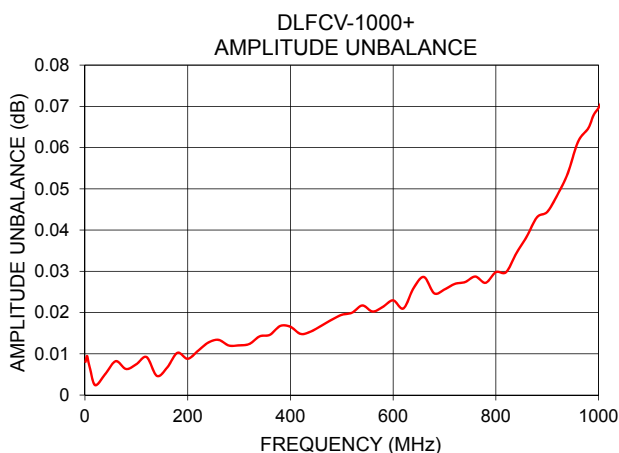
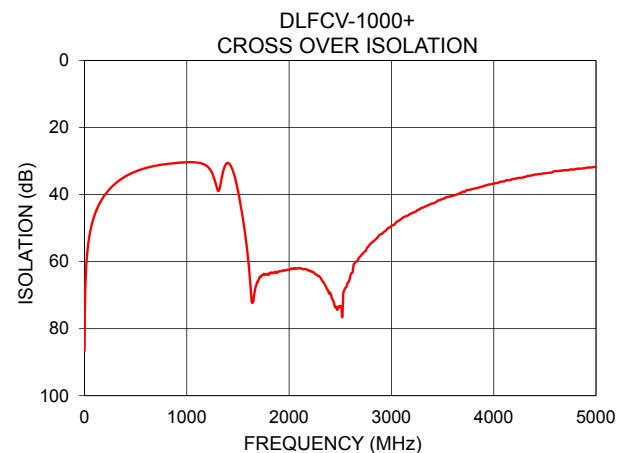
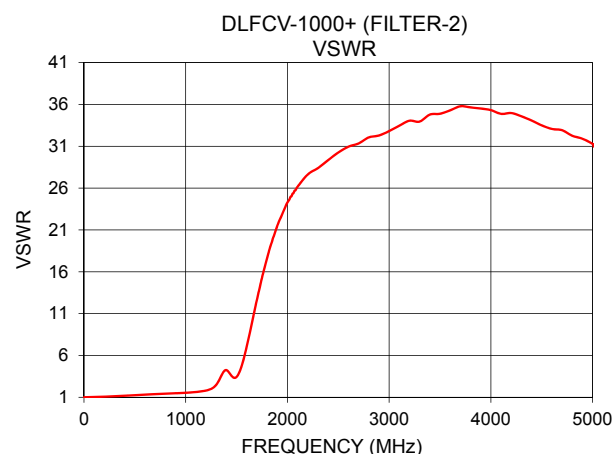
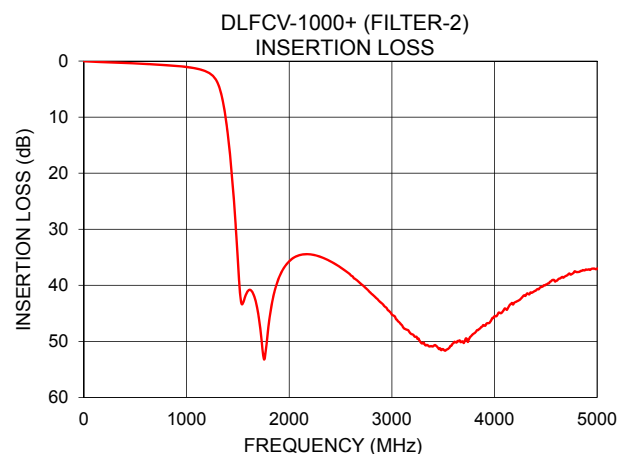
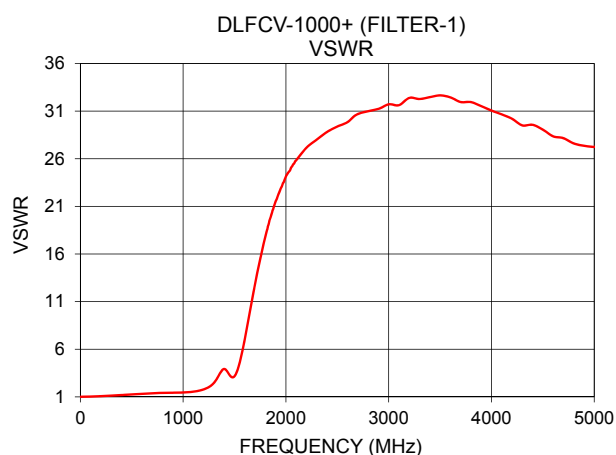
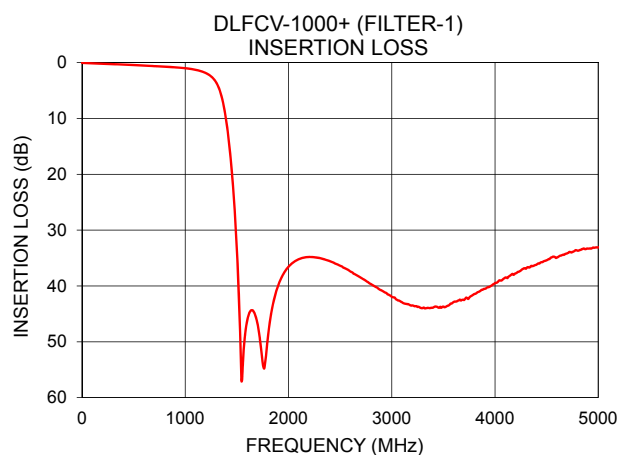


### Typical Performance Data at 25°C

VSWR						Group Delay				
Freq.	Insertion Loss		Cross Over	VSWR		Freq.	Amp Unbal.	Phase Unbal.	Filter1	Filter2
(MHz)	Filter1	Filter2	Isolation	Filter1	Filter2	(MHz)	(dB)	(deg)	(ns)	(ns)
1.0	0.03	0.03	86.58	1.01	1.01	1.0	0.01	0.01	0.56	0.57
30.0	0.07	0.07	56.46	1.01	1.01	40.0	0.01	0.02	0.58	0.58
100.0	0.13	0.12	45.96	1.04	1.03	60.0	0.01	0.05	0.58	0.58
250.0	0.24	0.23	38.21	1.10	1.10	100.0	0.01	0.09	0.58	0.58
500.0	0.43	0.42	33.11	1.25	1.25	140.0	0.00	0.16	0.58	0.58
1000.0	1.00	1.05	30.36	1.46	1.54	200.0	0.01	0.24	0.58	0.58
1280.0	3.02	3.16	36.44	2.26	2.24	260.0	0.01	0.34	0.58	0.58
1400.0	10.79	12.85	30.56	3.93	4.25	300.0	0.01	0.38	0.59	0.59
1450.0	19.29	22.21	32.88	3.32	3.57	340.0	0.01	0.44	0.59	0.59
1500.0	33.50	35.73	38.85	3.17	3.43	460.0	0.02	0.64	0.61	0.61
1600.0	46.20	40.97	59.38	7.08	7.08	480.0	0.02	0.69	0.61	0.61
1700.0	46.78	45.32	65.50	12.88	12.65	500.0	0.02	0.73	0.61	0.62
1760.0	54.70	53.12	64.01	15.97	15.76	540.0	0.02	0.82	0.62	0.63
1800.0	49.27	47.00	63.58	17.81	17.63	600.0	0.02	0.93	0.64	0.64
1900.0	39.91	38.63	62.98	21.53	21.49	660.0	0.03	1.06	0.66	0.66
2000.0	36.56	35.71	62.46	24.14	24.28	700.0	0.03	1.20	0.67	0.68
2100.0	35.21	34.62	61.91	25.84	26.18	740.0	0.03	1.31	0.69	0.70
2500.0	36.38	36.82	73.40	29.38	30.26	800.0	0.03	1.55	0.72	0.73
3000.0	41.95	45.22	49.35	31.71	32.81	840.0	0.03	1.77	0.75	0.76
3400.0	43.88	50.90	42.63	32.46	34.79	900.0	0.04	2.11	0.80	0.81
4000.0	39.49	45.49	36.75	31.05	35.32	960.0	0.06	2.48	0.86	0.87
5000.0	33.10	37.01	31.76	27.23	31.28	1000.0	0.07	2.81	0.90	0.91

## Notes

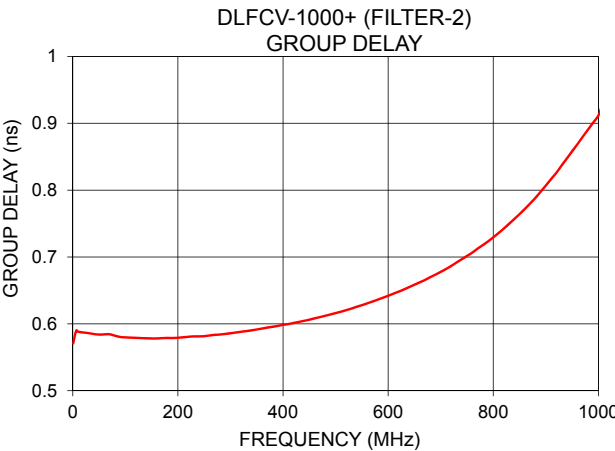
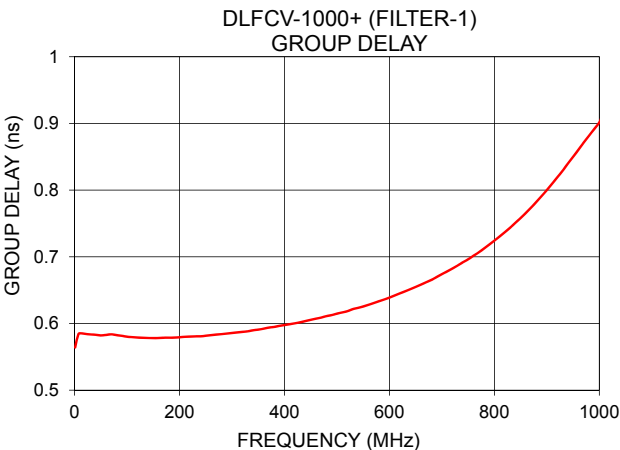
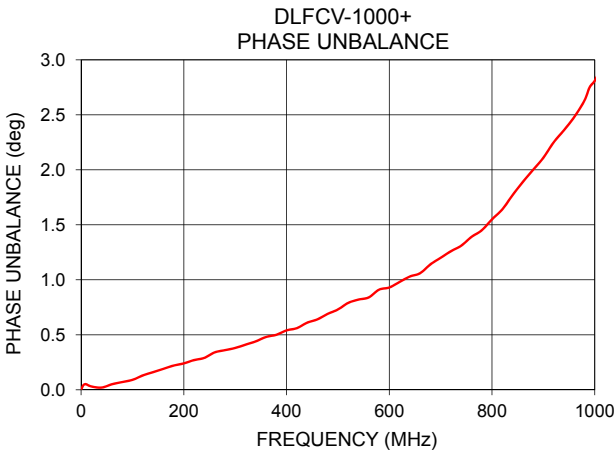
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