Differential

Low Pass Filter

DLFCG-540+

100Ω DC to 540 MHz

The Big Deal

- Differential operation
- Fast roll off
- Small size, 0805
- Very wide stopband, up to 8360 MHz without re-entry

CASE STYLE: GE0805C-1

Product Overview

Mini-Circuits' DLFCG-540+ is an LTCC differential low pass filter with a passband from DC to 540 MHz. This model is ideal for applications requiring filtering of balanced signals on dual 50Ω lines such as DACs/ADCs, systems with very low noise requirements and more. The filter provides low insertion loss in the passband, fast roll off in the transition, and a very wide stopband without re-entry up to 8360 MHz, making it suitable for use in wideband systems with many harmonics and spurious products. The unit comes housed in a tiny, rugged 0805 ceramic package, with wraparound terminations for excellent solderability.

Key Features

Feature	Advantages
Differential filter	Allows filtering of balanced signals in a single, tiny component. Eliminates the need for binning and matching of separate discrete components.
Tiny size (0.08 x 0.05 x 0.03")	Saves space in dense circuit board layouts and minimizes the effects of parasitics.
Fast roll off	Provides sharp rejection at frequencies close to the passband.
Ultra-wide stopband	Provides excellent rejection over more than a decade of bandwidth, ideal for blocking harmonics in wideband test and measurement or communications systems.
Wrap-around terminations	Provides excellent solderability and easy visual inspection.
Wide operating temperature range, -55 to +100°C	Enables reliable performance in extreme environments.

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

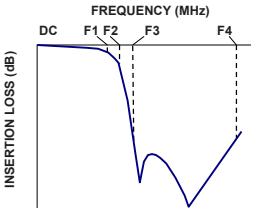
Applications
- Military Applications
- VHF/UHF transmitters/receivers
- Harmonic rejection
- A/D and D/A conversion

CASE STYLE: GE0805C-1

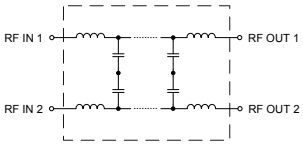
+RoHS Compliant

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

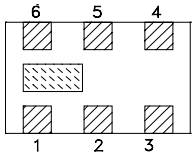
Specification Definition



Functional Schematic



Top View



Pad Connections

RF IN1, RF IN2	1, 6
RF OUT1, RF OUT2	3, 4
NO CONNECTION	2, 5

Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 540	—	1.2	2.2	dB
	Freq. Cut-Off	F2	590	—	3.0	—	dB
	VSWR	DC-F1	DC - 540	—	1.2	—	:1
Stop Band	Insertion Loss	F3-F4	720 - 8360	19	26	—	dB
			890 - 4560	26	31	—	dB
	VSWR	F3-F4	720 - 8360	—	20	—	:1

(1) In Application where DC voltage is present at either input or output ports, de-coupling capacitors are required.
(2) Measured on Mini-Circuits Characterization Test Board TB-939+.

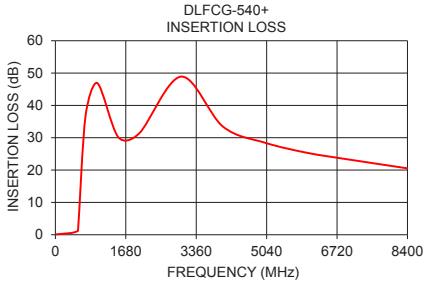
Maximum Ratings

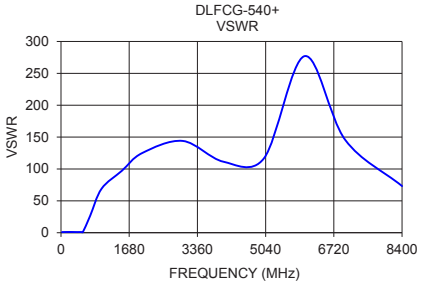
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1W Max.

Permanent damage may occur if any of these limits are exceeded.

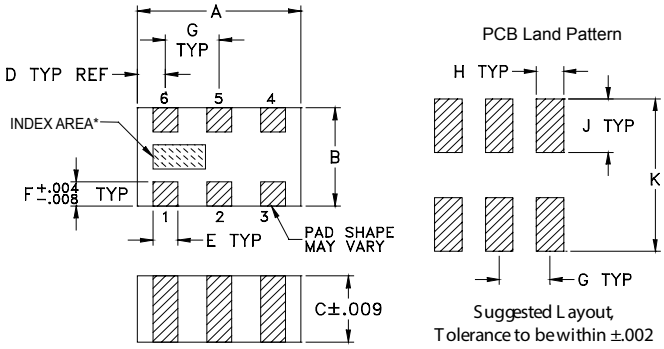
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
25	0.13	1.02
50	0.16	1.05
100	0.21	1.11
150	0.27	1.15
200	0.33	1.18
250	0.39	1.18
300	0.44	1.14
400	0.59	1.04
500	0.97	1.13
540	1.35	1.18
720	36.83	26.82
1000	46.90	69.09
1500	30.18	97.20
2000	31.35	124.98
3000	48.91	143.98
4000	33.42	111.40
5000	28.46	116.79
6000	25.35	276.99
7000	23.27	145.65
8400	20.53	73.20





Outline Drawing



*Shape of index marking may vary

Pad Connections

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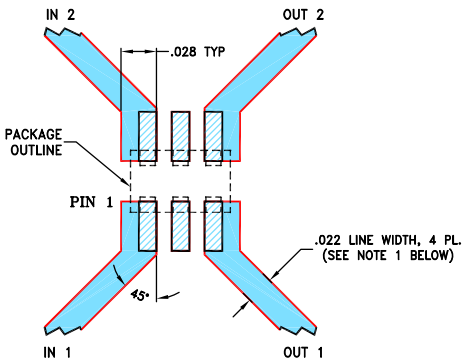
Demo Board MCL P/N: TB-939+
Suggested PCB Layout (PL-516)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .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 SOLDER MASK

Outline Dimensions (inch / mm)

A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.01	1.24	0.84	0.36	0.30	0.30

G	H	J	K	wt
.026	.014	.039	.110	grams
0.66	0.36	1.00	2.80	.008

Additional Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

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

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