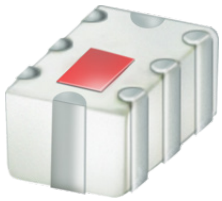
Ceramic

High Pass Filter

HFCG-1600+

50Ω 1650 to 5000 MHz



CASE STYLE: GE0805C-2

The Big Deal

- Small size 2.0 mm x 1.25 mm
- High Power handling
- High rejection
- Ceramic construction

Product Overview

The HFCG-1600+ LTCC High Pass Filter is constructed with 11 layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 1650-5000 MHz, these units offer low insertion loss and good rejection.

Key Features

Feature	Advantages
Small Size (2.0 mm x 1.25 mm)	Allows for high layout density of circuit boards, while minimizing effects of parasitic.
Wrap around termination	Provides excellent solderability and easy visual inspection capability.
LTCC construction	Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes.

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+RoHS Compliant

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

Features

- Small size
- Temperature stable
- LTCC construction
- Excellent power handling, 3W

Applications

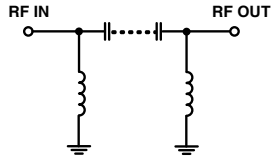
- Transmitters / Receivers
- Global positioning system(GPS)
- Satellite broadcast systems

Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-700	40	53	-	dB
		DC-F2	DC-950	22	34	-	dB
	Freq. Cut-Off	F3	1530	-	3.0	-	dB
	VSWR	DC-F2	DC-950	-	20	-	:1
Pass Band	Insertion Loss	F4-F8	1650-5000	-	2.0	-	dB
		F6-F7	2000-4000	-	0.8	1.6	dB
	VSWR	F5-F7	1700-4000	-	1.6	-	: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-1090+.

Functional Schematic



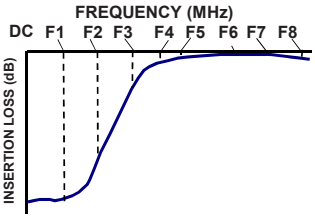
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input*	3W Max.

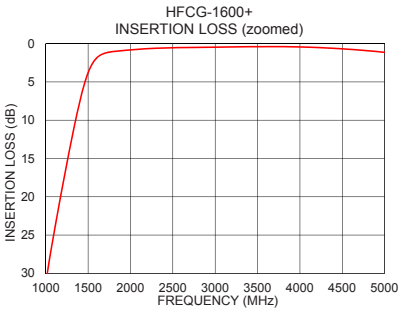
*Passband rating, derate linearly to 1.5W at 85°C ambient
Permanent damage may occur if any of these limits are exceeded.

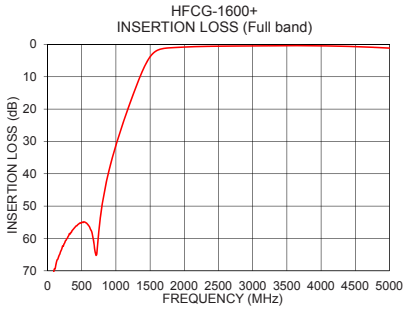
Typical Performance Data at 25°C

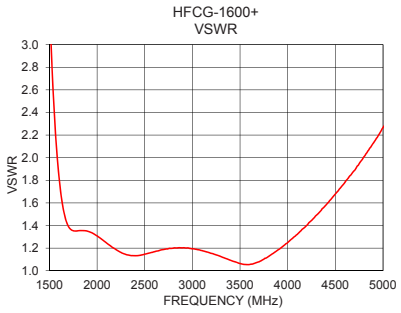
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	89.87	93.89
250	61.43	66.66
700	64.45	42.55
950	34.87	33.35
1000	31.21	30.84
1160	20.89	23.21
1200	18.51	20.71
1300	12.80	13.76
1400	7.65	7.31
1530	3.04	2.74
1550	2.62	2.40
1600	1.88	1.83
1650	1.46	1.52
1700	1.23	1.39
2000	0.82	1.31
3500	0.39	1.06
3750	0.39	1.10
4000	0.43	1.25
4500	0.68	1.68
5000	1.14	2.27

Typical Frequency Response







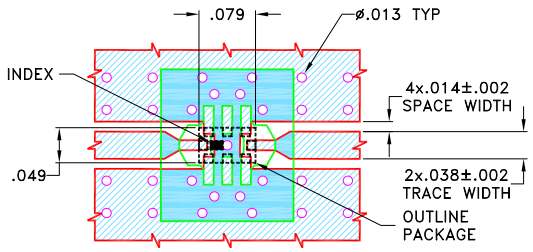


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

Pad Connections

INPUT	8
OUTPUT	4
GROUND	1,2,3,5,6,7

Demo Board MCL P/N: TB-1090+
Suggested PCB Layout (PL-615)

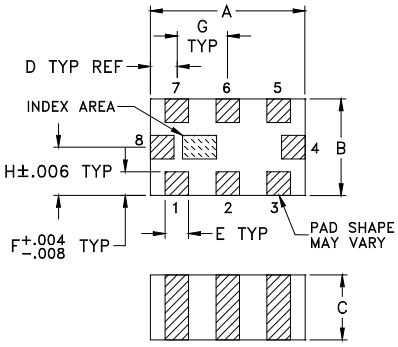


NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .020"±.0015". COPPER: 1/2 Oz. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

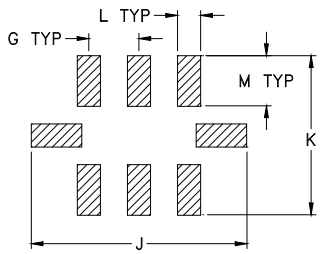
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.079	**.049**	**.037**	**.014**	**.012**	**.012**	**.026**
2.00	1.25	0.95	0.35	0.30	0.30	0.65

H	J	K	L	M		Wt.
.025	**.134**	**.110**	**.014**	**.039**		grams
0.63	3.40	2.80	0.35	1.00		.008

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Authorized Distributor

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HFCG-1600+