SURFACE MOUNT

Low Pass Filter

LFHKI-1000+

50 Ω DC to 1 GHz

THE BIG DEAL

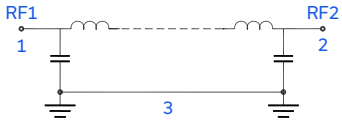
- Low Insertion Loss, Typ. 1.5 dB
- Passband Return Loss, Typ. 15 dB
- Stopband Rejection, Typ. 55 dB
- 1008 Surface Mount Footprint
- Power Handling: 10 W
- Shielded Construction
- Protected by US Patents 11,638,370 and 11,744,057

Generic photo used for illustration purposes only

APPLICATIONS

- Harmonic Rejection and Spurious Cleanup
- Tactical Radio
- Test and Measurement Equipment
- UHF Transmitters / Receivers

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' LFHKI-1000+ is a miniature low temperature co-fired ceramic (LTCC) low pass filter with a DC to 1 GHz passband supporting a variety of applications. This model provides 1.5 dB typical insertion loss over a wide band due to its rugged monolithic construction. Housed in a small 1008 ceramic form factor, the filter is ideal for dense signal chain PCB layouts where it complements MMIC size and performance. The LTCC fabrication process assures minimal RF performance variation while delivering a product that is well suited for environmental extremes of high humidity and temperature.

ELECTRICAL SPECIFICATIONS[1,2,3] AT +25°C

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	DC-F1	DC - 1	—	1.5	2	dB
	Freq. Cut-Off[4]	Fc	1.3	—	3	—	dB
	Return Loss	DC-F1	DC - 1	10	15	—	dB
Stopband	Rejection	F2-F3	1.7 - 2.5	20	30	—	dB
		F3-F4	2.5 - 7.5	45	55	—	
		F4-F5	7.5 - 14.5	30	40	—	
		F5-F6	14.5 - 25	20	25	—	
		F6-F7	25 - 40	—	25	—	

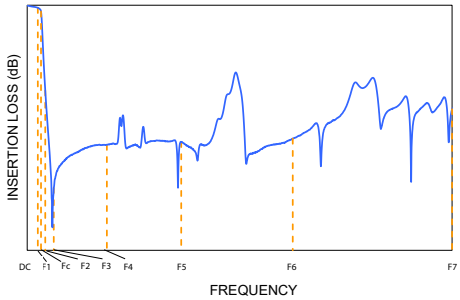
1. Tested in Evaluation Board P/N TB-LFHKI-1000C+
2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
3. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.
4. Typical variation ± 5%

ABSOLUTE MAXIMUM RATINGS[5]

Operating Temperature	-55 °C to +125 °C
Storage Temperature	-55 °C to +125 °C
Input Power[6]	10 W

5. Permanent damage may occur if any of these limits are exceeded.
6. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 1.5 W at +125°C.

TYPICAL FREQUENCY RESPONSE



REV. OR
ECO-027080
LFHK-1000+
MCL NY
250929

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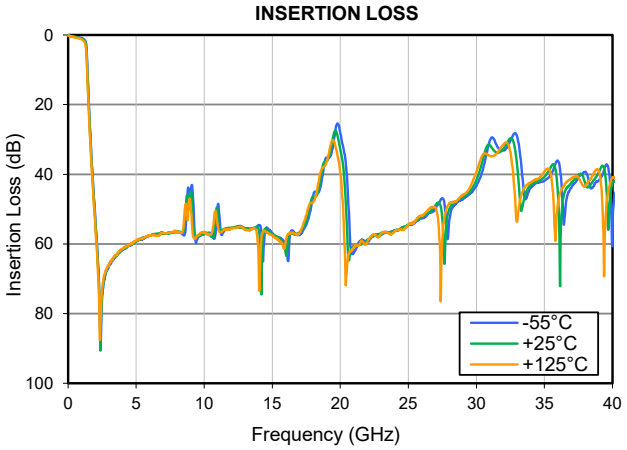
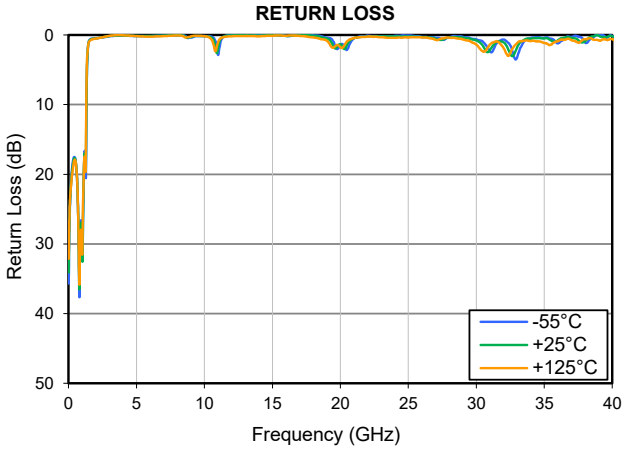
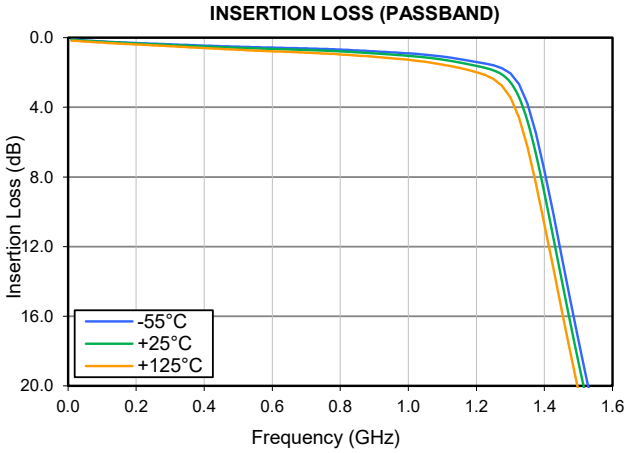
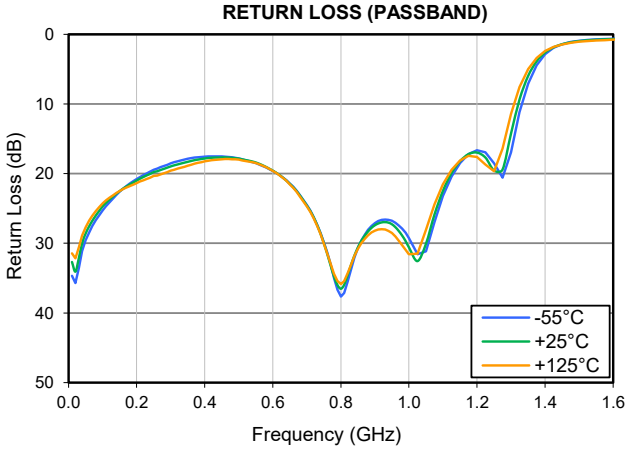
TYPICAL PERFORMANCE GRAPHS









LTCC SURFACE MOUNT

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FUNCTIONAL DIAGRAM

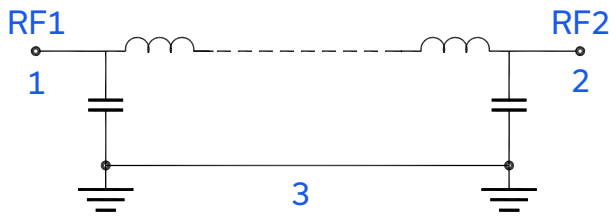


Figure 1. LFHKI-1000+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	2	Connects to RF Output Port
GROUND	3	Connects to Ground on PCB, (See drawing PL-836)

SUGGESTED PCB LAYOUT (PL-836)

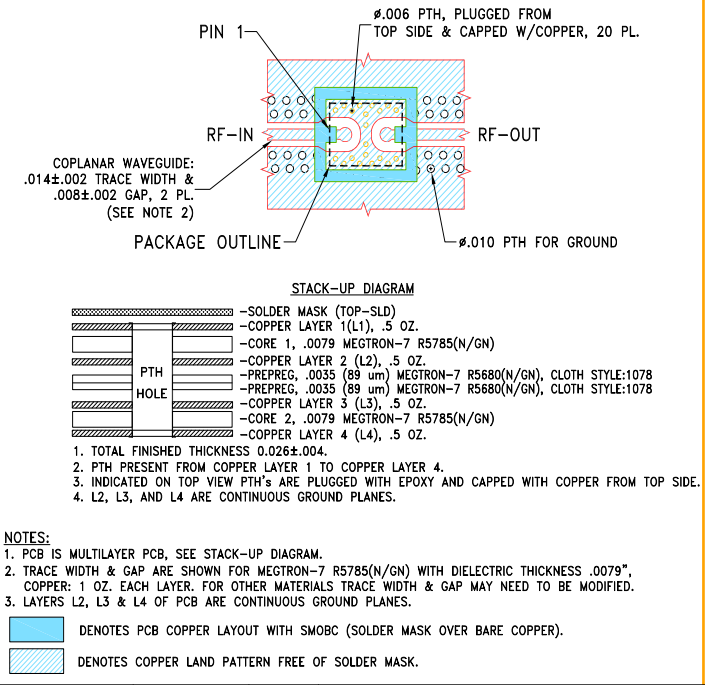
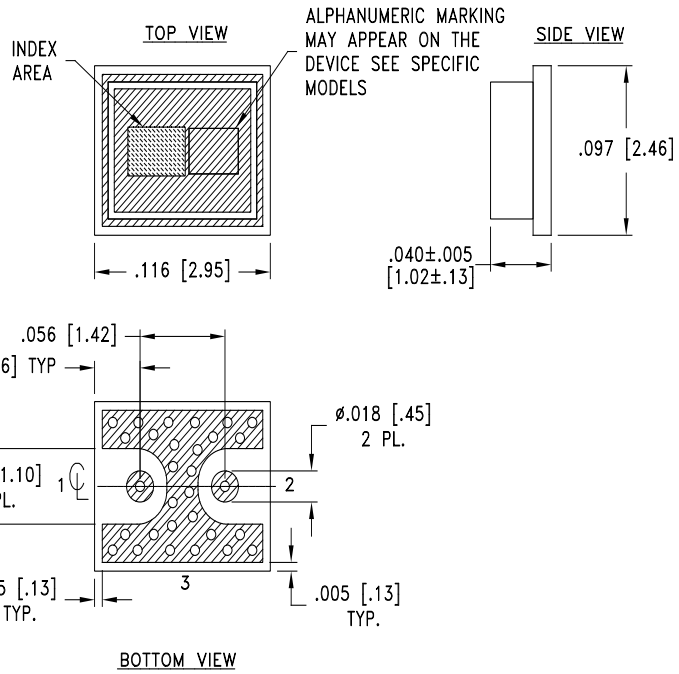


Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Weight: .021 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±.01; 3 Pl. ±.015 Inches

PRODUCT MARKING*: ZW

*Marking may contain other features or characters for internal lot control.

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD

CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (SxP Files) Data Set (.zip file) De-embedded to device pads
Case Style	NM3723 Lead Finish: Gold Plate over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F66-2
Suggested Layout for PCB Design	PL-836
Evaluation Board	TB-LFHKI-1000C+ Gerber File
Environmental Rating	ENV06T10

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-Circuits' 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/terms/viewterm.html