LTCC SURFACE MOUNT

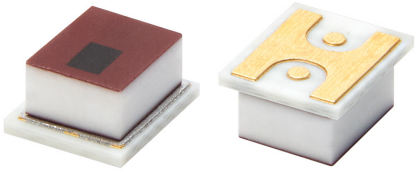
High Pass Filter

HFHKI-3800+

50Ω 4250 to 14000 MHz

THE BIG DEAL

- Insertion Loss, Typ. 1 dB
- Strong Stopband Rejection
- Ultra-Wide Passband, 4250 to 14000 MHz
- 1210 SMT Footprint
- Integrated CPWG Interposer for Easy SMT Integration
- Power Handling: 6 W
- Protected by US Patents 11,638,370 and 11,744,057

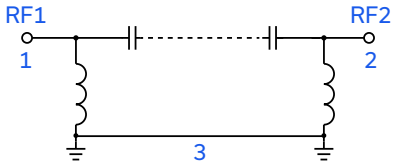


Generic photo used for illustration purposes only

APPLICATIONS

- X-Band and Ku-Band Radar Systems
- Ku-Band SATCOM Terminals
- Test and Measurement Equipment
- EW and Spectrum Monitoring

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

The HFHKI-3800+ is 4250 to 14000 MHz LTCC high pass filter featuring an integrated interposer for seamless CPWG interface compatibility. This design supports direct connection to planar transmission lines. The extended upper-frequency range makes it well suited for microwave and Ku-band applications requiring wide instantaneous bandwidth and reliable suppression of lower-frequency signals. Its SMT form factor enables compact implementations, and the ceramic construction provides stable, repeatable electrical performance across temperature and frequency.

ELECTRICAL SPECIFICATIONS[1,2,3] AT +25 °C, Z_0 = 50 Ω

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	F4-F5	4250- 6000	—	1.9	2.5	dB
		F5-F6	6000-12000	—	1	1.7	
		F6-F7	12000-14000	—	1.2	2.6	
	Return Loss	F4-F5	4250- 6000	—	11	—	dB
		F5-F6	6000-12000	—	11	—	
		F6-F7	12000-14000	—	20	—	
Stopband	Rejection	DC-F1	DC-1300	58	68	—	dB
		F1-F2	1300-2200	36	46	—	
		F2-F3	2200-2950	—	23	—	
	Freq. Cut-Off[4]	Fc	3875	—	3	—	dB

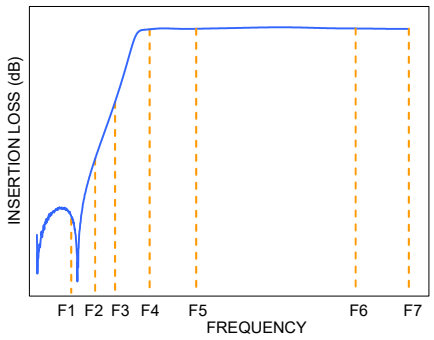
1. Tested on Evaluation Board P/N TB-HFHKI-3800C+ with the connector and feedline effects de-embedded using the 2X Thru IEEE P370 method.
2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
3. This component should not be used as a DC-block. 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]	6 W at 25 °C

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 W at +125°C.

TYPICAL FREQUENCY RESPONSE



REV. OR
ECO-029508
HFHKI-3800+
MCL NY
260512

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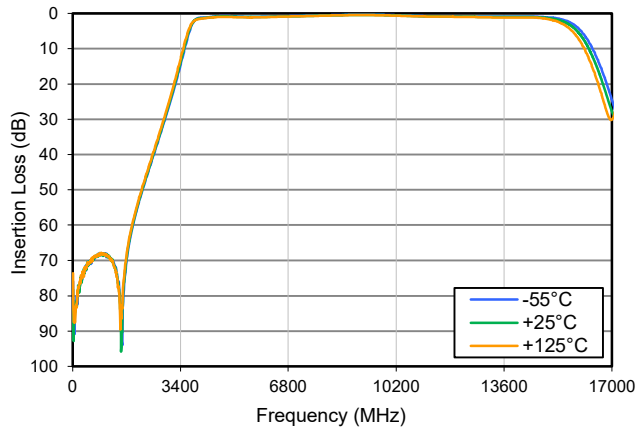
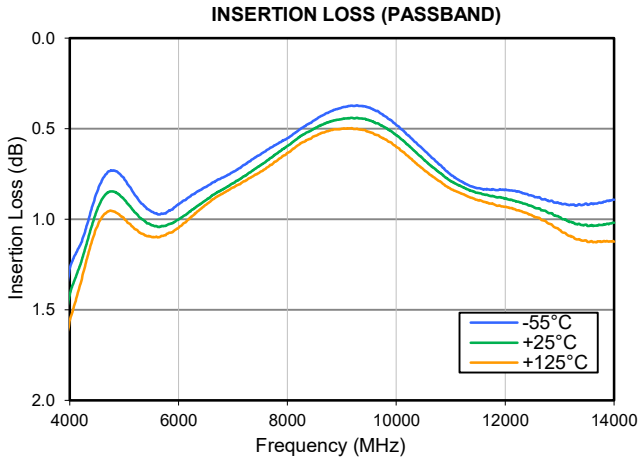
TYPICAL PERFORMANCE GRAPHS

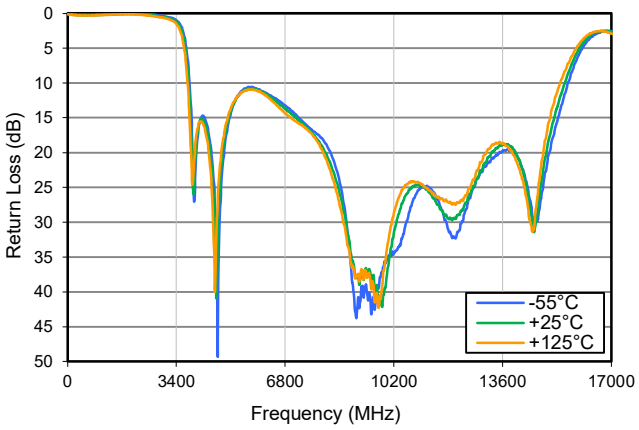
INSERTION LOSS



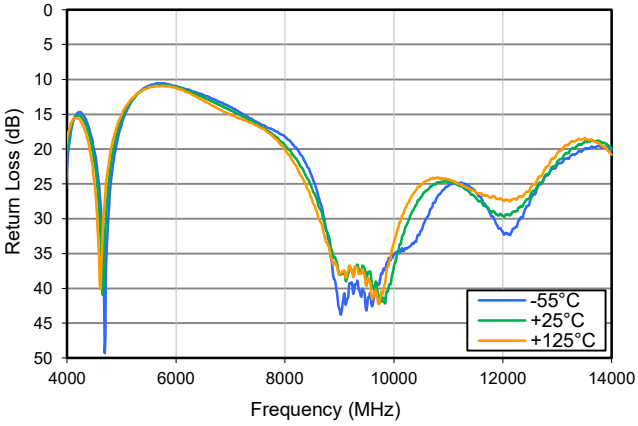
INSERTION LOSS (PASSBAND)



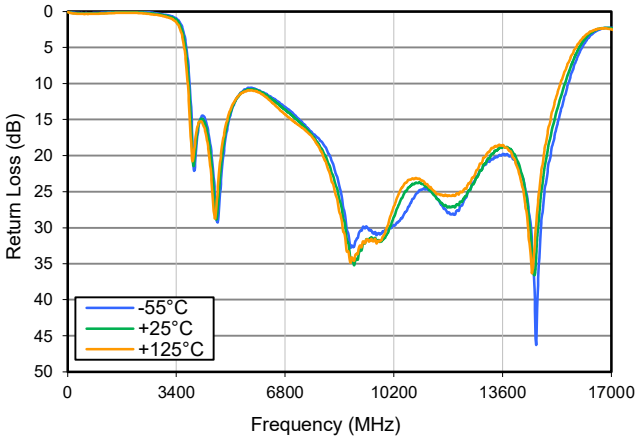
INPUT RETURN LOSS



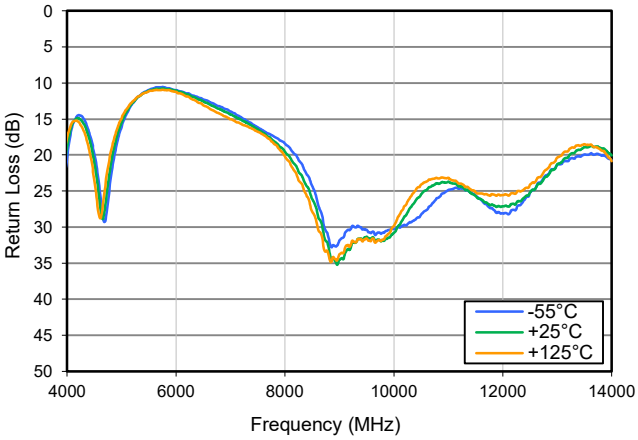
INPUT RETURN LOSS (PASSBAND)



OUTPUT RETURN LOSS



OUTPUT RETURN LOSS (PASSBAND)



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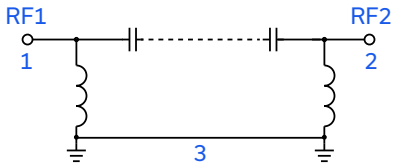
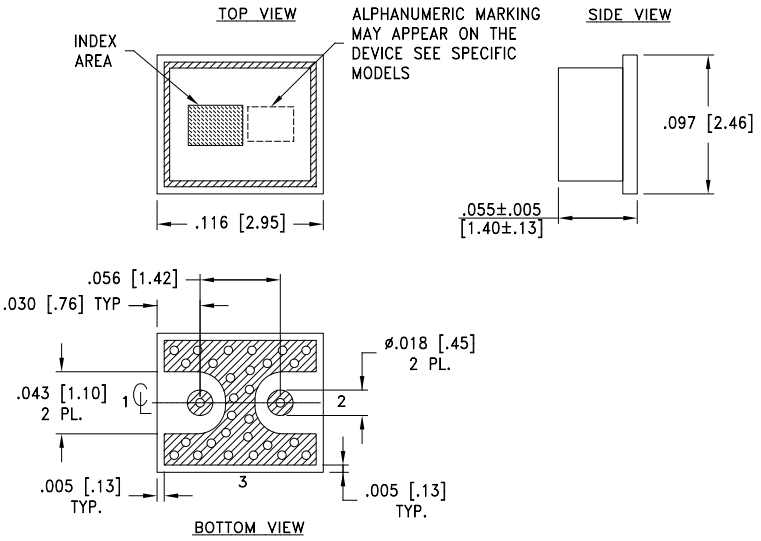


Figure 1. HFHKI-3800+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1[2]	1	Connects to RF Input Port
RF2[2]	2	Connects to RF Output Port
GROUND	3	Connects to Ground on PCB, (See drawing PL-837)

CASE STYLE DRAWING



Weight: .021 grams
Dimensions are in inches [mm]. Tolerances: 2 Pl.±.01; 3 Pl. ±.005 Inches

SUGGESTED PCB LAYOUT (PL-837)

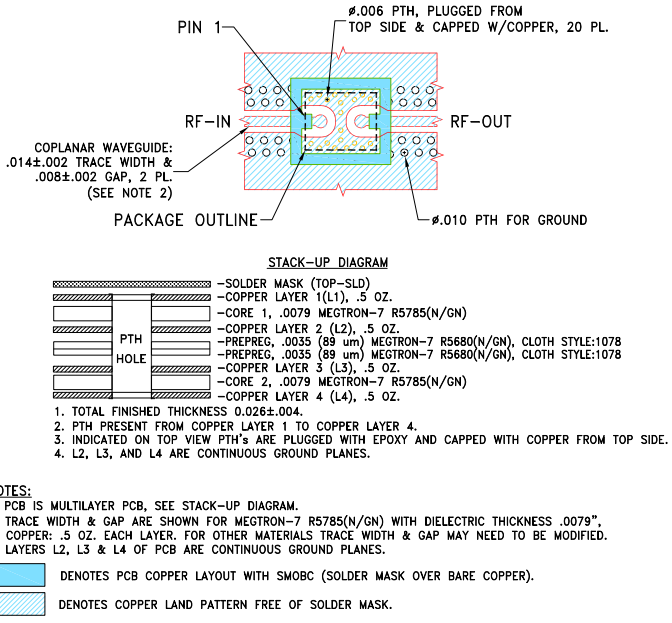


Figure 2. Suggested PCB Layout

PRODUCT MARKING*: J4

*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 (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	NM3723-1 Lead Finish: Gold Plate over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F66-3
Suggested Layout for PCB Design	PL-837
Evaluation Board	TB-HFHKI-3800C+ 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.

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