LTCC SURFACE MOUNT

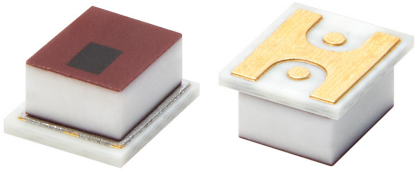
High Pass Filter

HFHKI-7300+

50Ω 7.9 to 17.5 GHz

THE BIG DEAL

- Low Insertion Loss, Typ. 1.5 dB
- Strong Stopband Rejection
- 1210 Surface Mount Footprint
- Power Handling: 6 W
- Integrated CPWG interposer for easy SMT integration
- Protected by US Patents 11,638,370 and 11,744,057

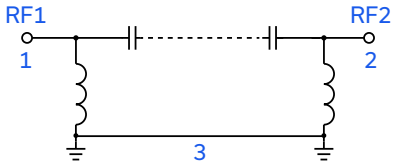


Generic photo used for illustration purposes only

APPLICATIONS

- X-band and Ku-band Radar Systems
- EW and ECM Systems
- Microwave Communications and Backhaul
- Test and Measurement Equipment

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' HFHKI-7300+ is a miniature low temperature co-fired ceramic (LTCC) high pass filter with a 7900 to 17,500 MHz passband that supports a wide range of microwave applications. Housed in a compact 1210 package, the device incorporates an integrated interposer optimized for CPWG surface-mount attachment, simplifying PCB integration and ensuring consistent RF performance. The LTCC fabrication process ensures stable electrical performance and high reliability under demanding environmental conditions. Its monolithic structure minimizes intrinsic non-linearities and supports wide, multi-octave passband performance.

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

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	F4–F5	7.9–9.5	—	2.6	—	dB
		F5–F6	9.5–15.5	—	1.5	2.1	
		F6–F7	15.5–17.5	—	3.8	—	
	Return Loss	F4–F5	7.9–9.5	—	8.5	—	dB
		F5–F6	9.5–15.5	—	9	—	
		F6–F7	15.5–17.5	—	9	—	
Stopband	Rejection	DC–F1	DC–2.0	54	64	—	dB
		F1–F2	2.0–3.7	40	49	—	
		F2–F3	3.7–5.5	—	23	—	
	Freq. Cut-Off[4]	Fc	7.3	—	3	—	dB

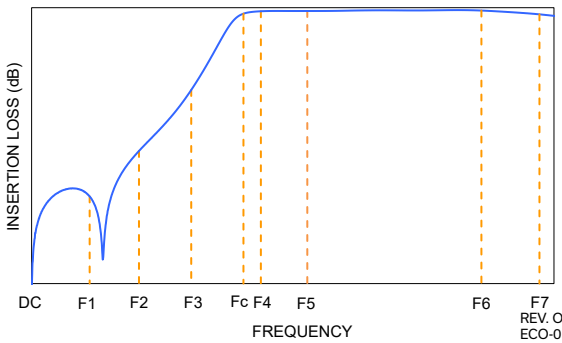
1. Tested in Evaluation Board P/N TB-HFHKI-7300C+.
2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
3. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output 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

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-029633
HFHKI-5000+
MCL NY
260521

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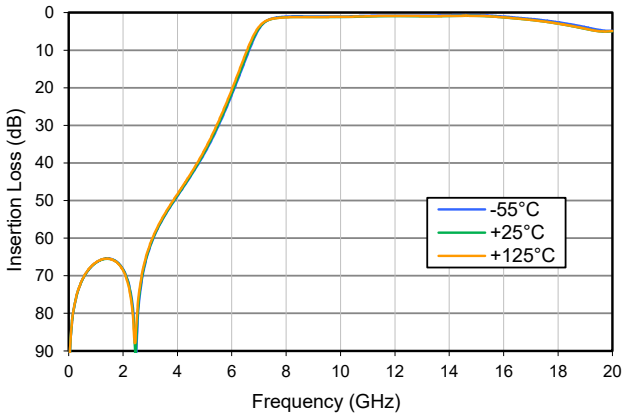
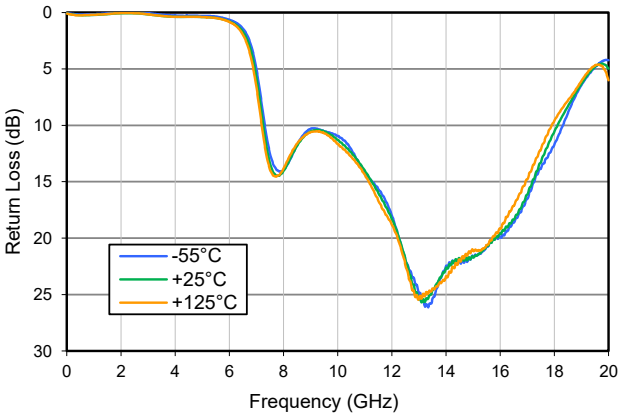
TYPICAL PERFORMANCE GRAPHS

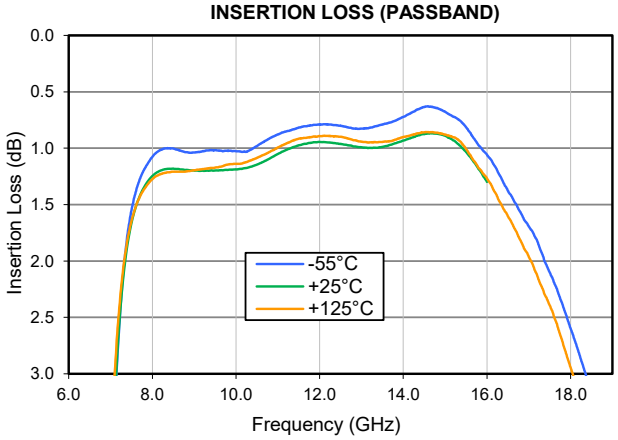
INSERTION LOSS



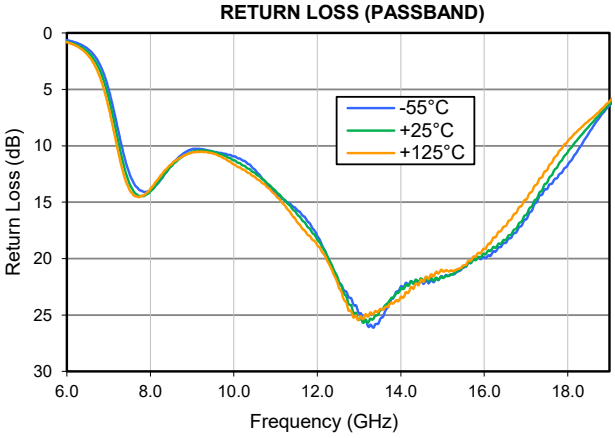
RETURN LOSS



INSERTION LOSS (PASSBAND)



RETURN LOSS (PASSBAND)



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FUNCTIONAL DIAGRAM

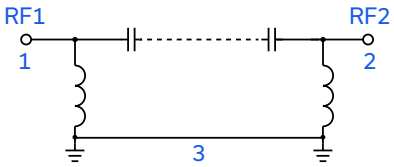
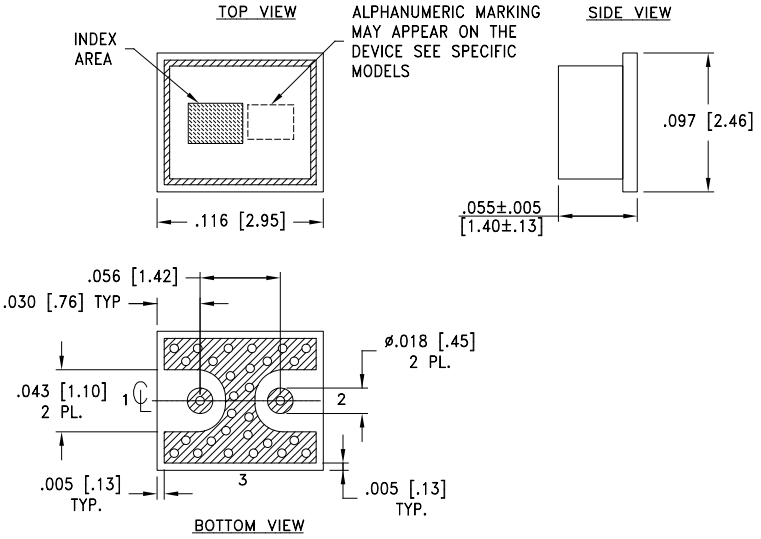


Figure 1. HFHKI-7300+ Functional Diagram

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)

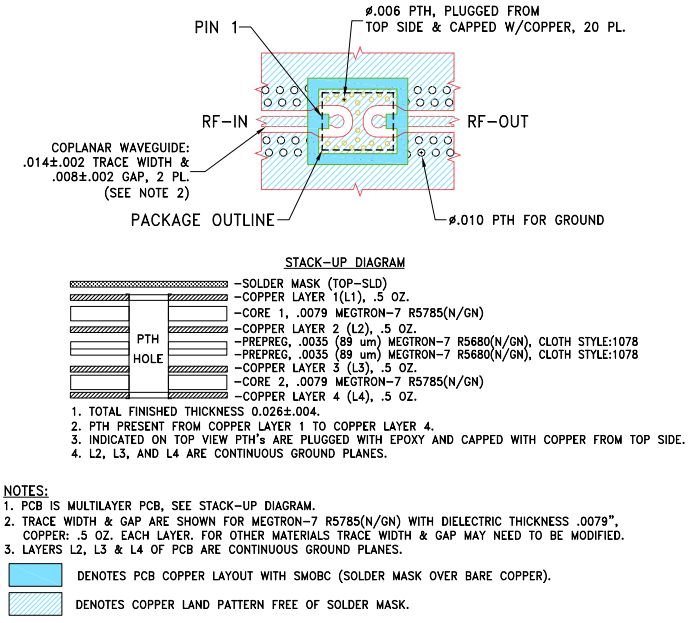


Figure 2. Suggested PCB Layout

PRODUCT MARKING*: U3

*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-7300C+ 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