LTCC SURFACE MOUNT

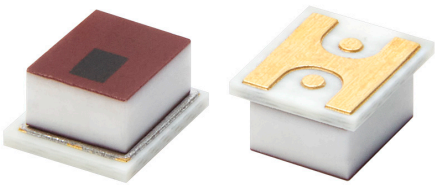
Low Pass Filter

LFHKI-900+

50Ω DC to 0.9 GHz

THE BIG DEAL

- Integrated CPWG Interposer for Easy SMT Integration
- Insertion Loss, Typ. 2.3 dB
- Strong Stopband Rejection
- Power Handling: 9 W
- Compact 2.95 × 2.46 mm SMT Package
- Protected by US Patents 11,638,370 and 11,744,057

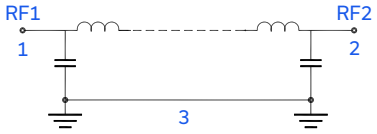


Generic photo used for illustration purposes only

APPLICATIONS

- Test and Measurement Equipment
- Microwave Transmitters / Receivers
- Harmonic Rejection
- Satellite Communications

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' LFHKI-900+ is a passive RF low pass filter featuring a CPWG interposer that simplifies board-level implementation and supports compact RF designs. The device provides low insertion loss, good return loss and excellent suppression of harmonics and unwanted signals across a broad frequency range. Its shielded LTCC construction helps prevent de-tuning and EMI while maintaining stable performance over temperature. The compact 2.95 × 2.46 mm package is optimized for high-density RF and microwave applications.

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

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	DC–F2	DC–0.9	–	2.3	2.5	dB
	Freq. Cut-Off	Fc	1	–	3	–	dB
	Return Loss	DC–F1	DC–0.8	10	11	–	dB
		F1–F2	0.8–0.9	–	10	–	
Stopband	Rejection	F3–F4	1.3–2	20	28	–	dB
		F4–F5	2–5	42	53	–	
		F5–F6	5–15.5	42	53	–	
		F6–F7	15.5–19	32	42	–	
		F7–F8	19–50	–	22	–	

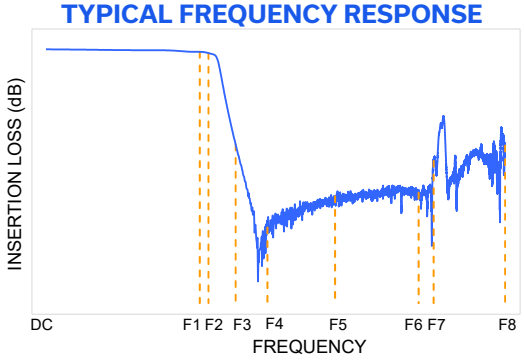
1. Tested in Evaluation Board P/N TB-LFHKI-900C+ with the connector and feedline effects de-embedded using the 2X Thru IEEE P370 method.
2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
3. This component should not be used as a DC block. 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]	9 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 1.1 W at +125 °C.

TYPICAL FREQUENCY RESPONSE



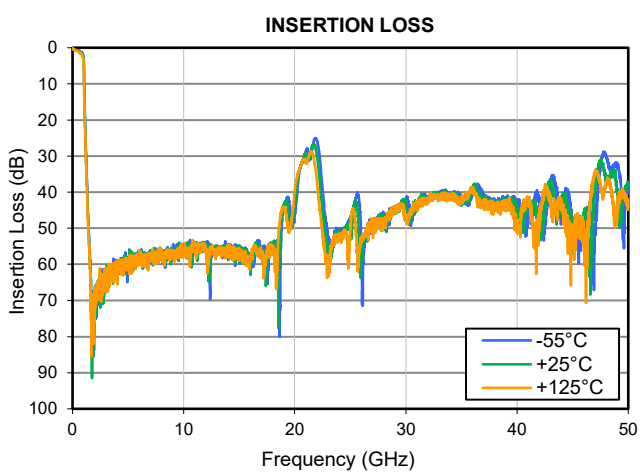
REV. OR
ECO-030926
LFHKI-900+
MCL NY
260826

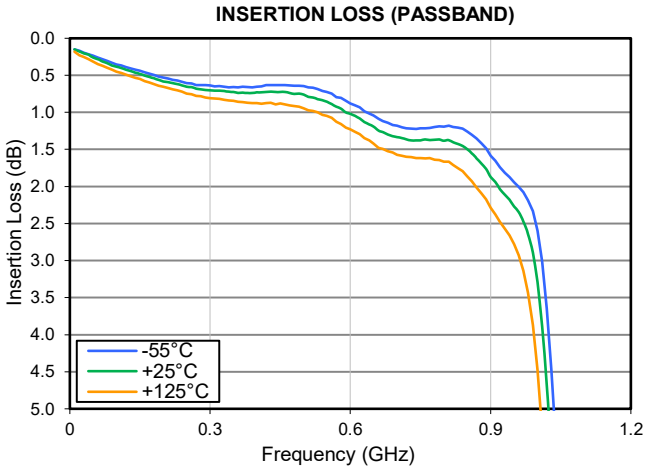
Low Pass Filter

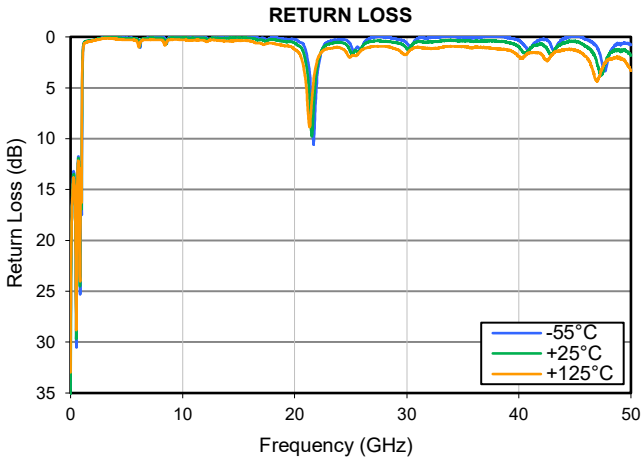
LFHKI-900+

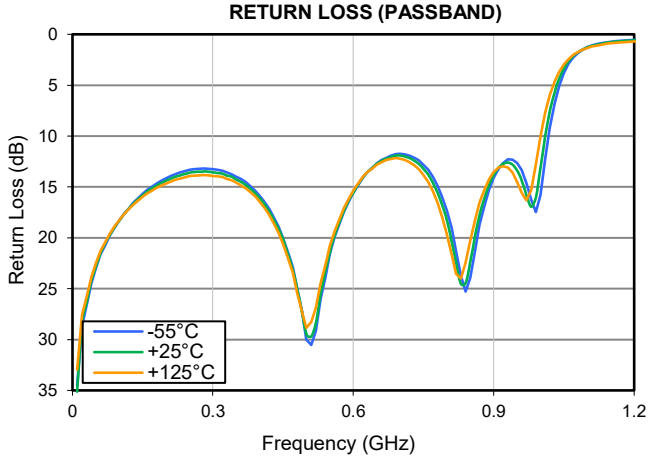
50Ω DC to 0.9 GHz

TYPICAL PERFORMANCE GRAPHS









LTCC SURFACE MOUNT

Low Pass Filter

LFHKI-900+

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FUNCTIONAL DIAGRAM

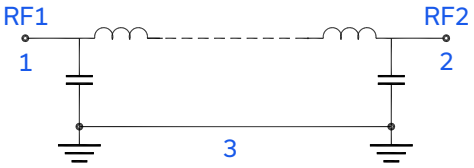
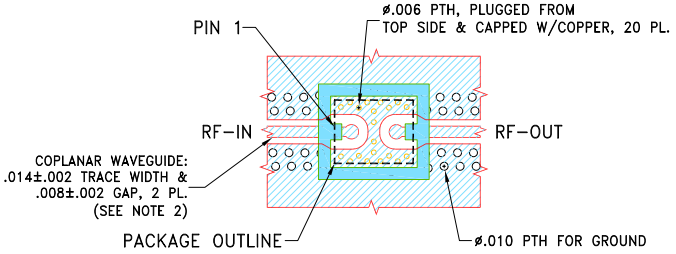


Figure 1. LFHKI-900+ Functional Diagram

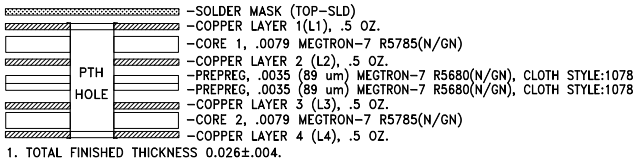
PAD DESCRIPTION

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)

SUGGESTED PCB LAYOUT (PL-837)



STACK-UP DIAGRAM



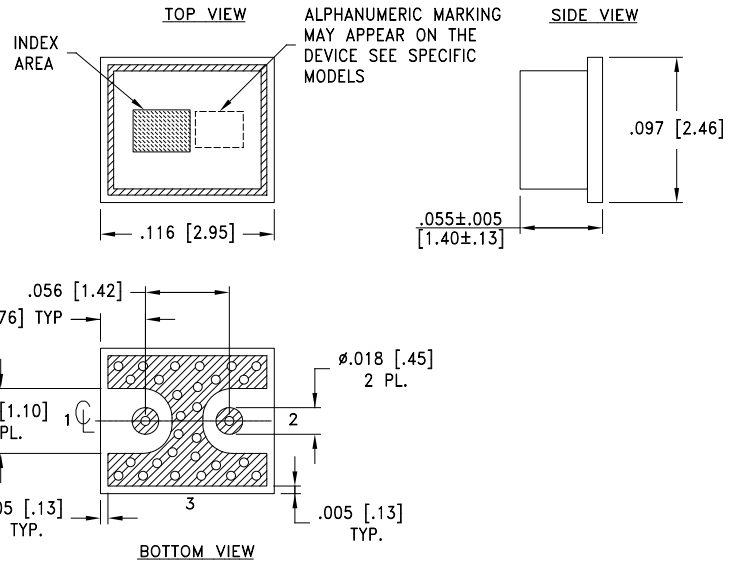
-SOLDER MASK (TOP-SLD)
-COPPER LAYER 1(L1), .5 OZ.
-CORE 1, .0079 MEGTRON-7 R5785(N/GN)
-COPPER LAYER 2 (L2), .5 OZ.
-PREPREG, .0035 (89 um) MEGTRON-7 R5680(N/GN), CLOTH STYLE:1078
-PREPREG, .0035 (89 um) MEGTRON-7 R5680(N/GN), CLOTH STYLE:1078
-COPPER LAYER 3 (L3), .5 OZ.
-CORE 2, .0079 MEGTRON-7 R5785(N/GN)
-COPPER LAYER 4 (L4), .5 OZ.

1. TOTAL FINISHED THICKNESS 0.026±.004.
2. PTH PRESENT FROM COPPER LAYER 1 TO COPPER LAYER 4.
3. INDICATED ON TOP VIEW PTH's ARE PLUGGED WITH EPOXY AND CAPPED WITH COPPER FROM TOP SIDE.
4. L2, L3, AND L4 ARE CONTINUOUS GROUND PLANES.

NOTES:
1. PCB IS MULTILAYER PCB, SEE STACK-UP DIAGRAM.
2. TRACE WIDTH & GAP ARE SHOWN FOR MEGTRON-7 R5785(N/GN) WITH DIELECTRIC THICKNESS .0079", COPPER: .5 OZ. EACH LAYER. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
3. LAYERS L2, L3 & L4 OF PCB ARE CONTINUOUS GROUND PLANES.

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



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

PRODUCT MARKING*: V4

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

Low Pass Filter

LFHKI-900+

50Ω DC to 0.9 GHz

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-LFHKI-900C+ Gerber File
Environmental Rating	ENV164

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