LUMPED LC SURFACE MOUNT

High Pass Filter

SCHF-27+

50Ω 27 to 1000 MHz

THE BIG DEAL

- Low Insertion Loss
- High Rejection
- Small Size, 19.05 x 9.65 mm

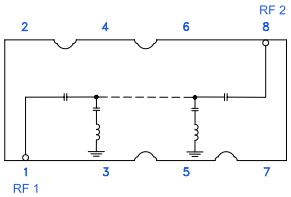


Generic photo used for illustration purposes only

APPLICATIONS

- HF/VHF
- Lab use
- Receivers/Transformers

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' SCHF-27+ is a 50Ω high pass filter fabricated using SMT technology. This SMT model offers lower insertion loss, good return loss, higher stopband rejection and a wider passband 27 to 1000 MHz. This filter is built with high Q capacitors and wire wound inductors for superior performance. It has repeatable performance across lots and consistent performance acros temperature. The unit comes housed in a miniature plastic package measuring just 19.05 x 9.65 mm, ideal for dense circuit board layouts.

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

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	F3-F4	27 - 1000	—	0.6	1.0	dB
	Return Loss	F3-F4	27 - 1000	—	20.8	—	dB
Stopband	Rejection	DC-F1	DC - 17	40	52	—	dB
		F1-F2	17 - 19	20	32	—	

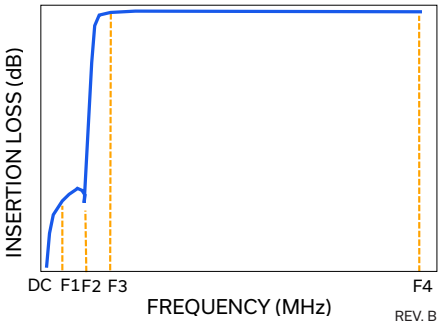
1. Tested on Evaluation Board P/N TB-SCHF-27+ with connectors and feedline de-embedded with thru-line compensation.
2. This filter is bi-directional RF1 and RF2 ports may be interchanged. See S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[3]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[4]	5 W Max. @ 25°C

3. Permanent damage may occur if any of these limits are exceeded.
4. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE



REV. B
ECO-030974
SCHF-27+
EDU2767_1
MCINU
260827

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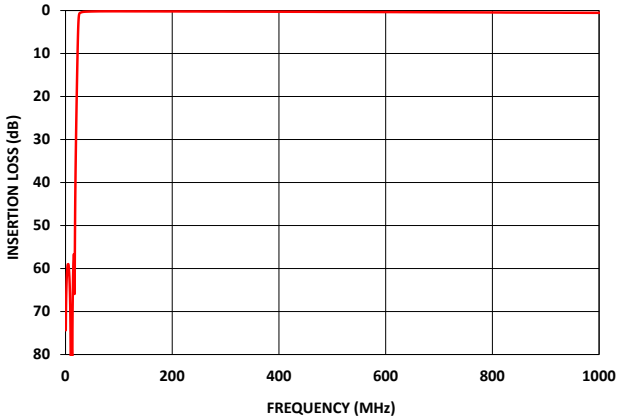
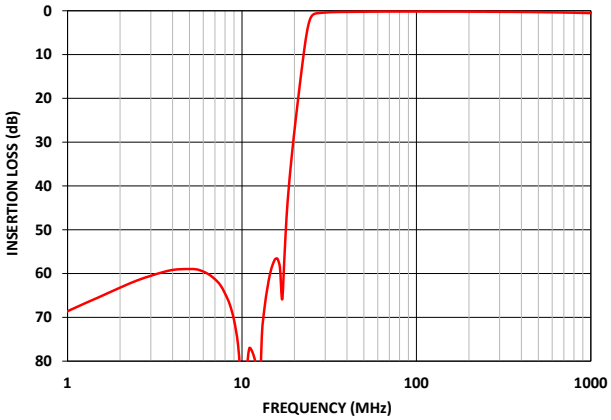
TYPICAL PERFORMANCE GRAPHS AT +25°C

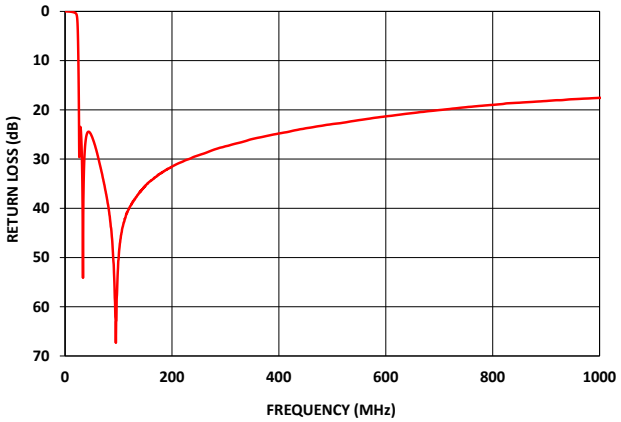
SCHF-27+
INSERTION LOSS



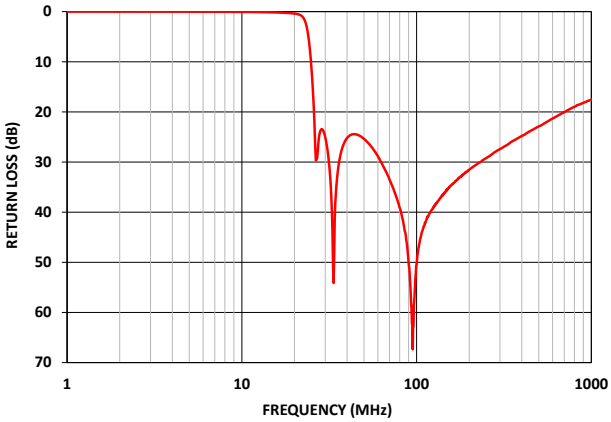
SCHF-27+
INSERTION LOSS (Zoomed)



SCHF-27+
RETURN LOSS



SCHF-27+
RETURN LOSS (zoomed)



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FUNCTIONAL DIAGRAM

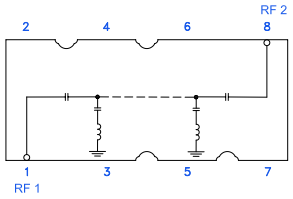
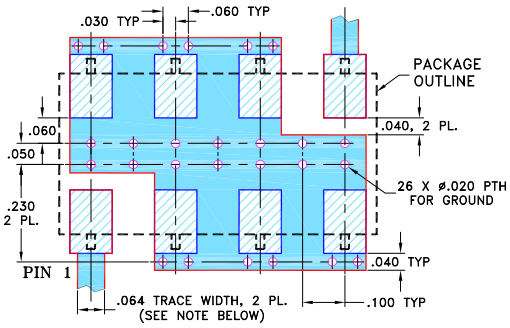


Figure 1. SCHF-27+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1[2]	1	Connects to RF Input Port
RF2[2]	8	Connects to RF Output Port
GROUND	2,3,4,5,6,7	Connects to Ground on PCB, (See drawing PL-049)

SUGGESTED PCB LAYOUT



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

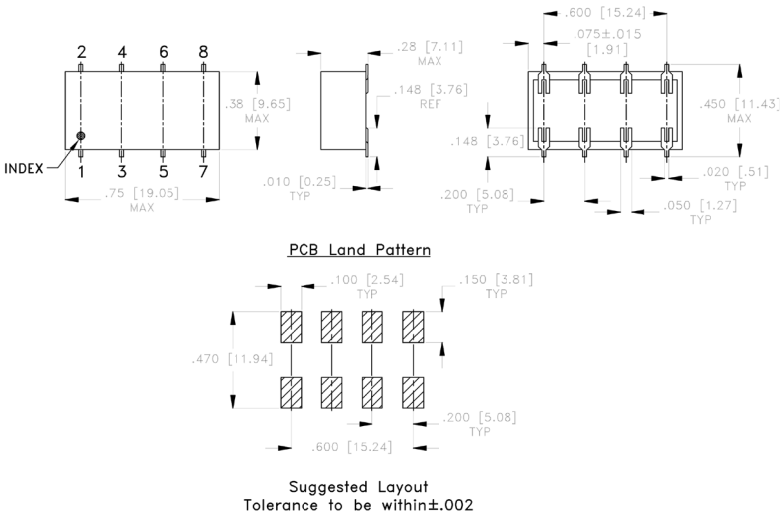
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Suggested Layout
Tolerance to be within±.002

Weight: 1.6 grams
Dimensions are in inches (mm). Tolerances: 2Pl. ± .01 [.76]; 3Pl. ± .005 [.38]

PRODUCT MARKING*: SCHF-27

*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	YY161 Lead Finish: Tin over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F5
Suggested Layout for PCB Design	PL-049
Evaluation Board	TB-SCHF-27+ Gerber File
Environmental Rating	ENV02T1
MSL Level	MSL1

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