

DATA SHEET

SKYFR-001549: 860 to 894 MHz Single-Junction Robust Lead Circulator

Applications

- Wireless infrastructure
- Power amplifiers

Features

- Small surface-mount package
- Operating frequency range: 860 MHz to 894 MHz
- BeO free
- RoHS compliant
- Parts delivered on tape and reel



Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to *Skyworks Definition of Green™*, document number SQ04-0074.

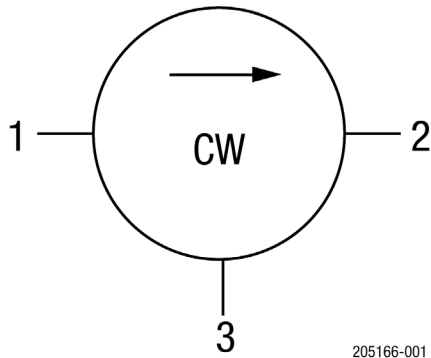
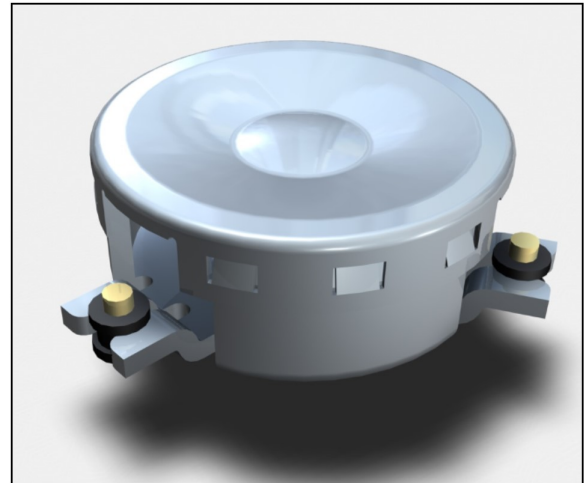


Figure 1. SKYFR-001549 Block Diagram

Description

The SKYFR-001549 is a single-junction, surface-mount circulator designed for wireless infrastructure and power-amplifier applications. It operates over the frequency range of 860 MHz to 894 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-001549 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-001549 is shown in Figure 1.

For tape and reel information, refer to the *Tape and Reel Guidelines for Isolators and Circulators* Application Note.

Electrical and Mechanical Specifications

The absolute maximum ratings of the SKYFR-001549 are provided in Table 1. Electrical specifications are provided in Table 2.

Plating information is shown in Table 3. Figure 2 shows the package dimensions and PCB footprint information.

Table 1. SKYFR-001549 Absolute Maximum Ratings¹

Parameter	Symbol	Minimum	Maximum	Units
Average power	P _{AVG}	70	80	W
Peak power	P _{PK}	200	250	W
Operating temperature	T _{OP}	-40	+105	°C
Storage temperature	T _{STOR}	-65	+150	°C

¹ Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

Table 2. SKYFR-001549 Electrical Specifications¹

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		860		894	MHz
Impedance				50		Ω
Input impedance, real			42	50	58	Ω
Input impedance, imaginary			-j7		+j10	Ω
Insertion loss ²	IL				0.35	dB
Isolation ²	ISO		20			dB
Return loss ²	RL		20			dB
Group delay					2.0	ns
Group delay variation					0.5	ns
2 nd harmonic attenuation			15			dB
3 rd harmonic attenuation			10			dB
Out-of-band resonance point			>300			MHz
Intermodulation distortion ³	IMD	2 x 20 W CW tones, 1 MHz spacing, -40 °C to +85 °C	58			dBc
Intermodulation distortion ³	IMD	2 x 20 W CW tones, 1 MHz spacing, +85 °C to +110 °C	56			dBc

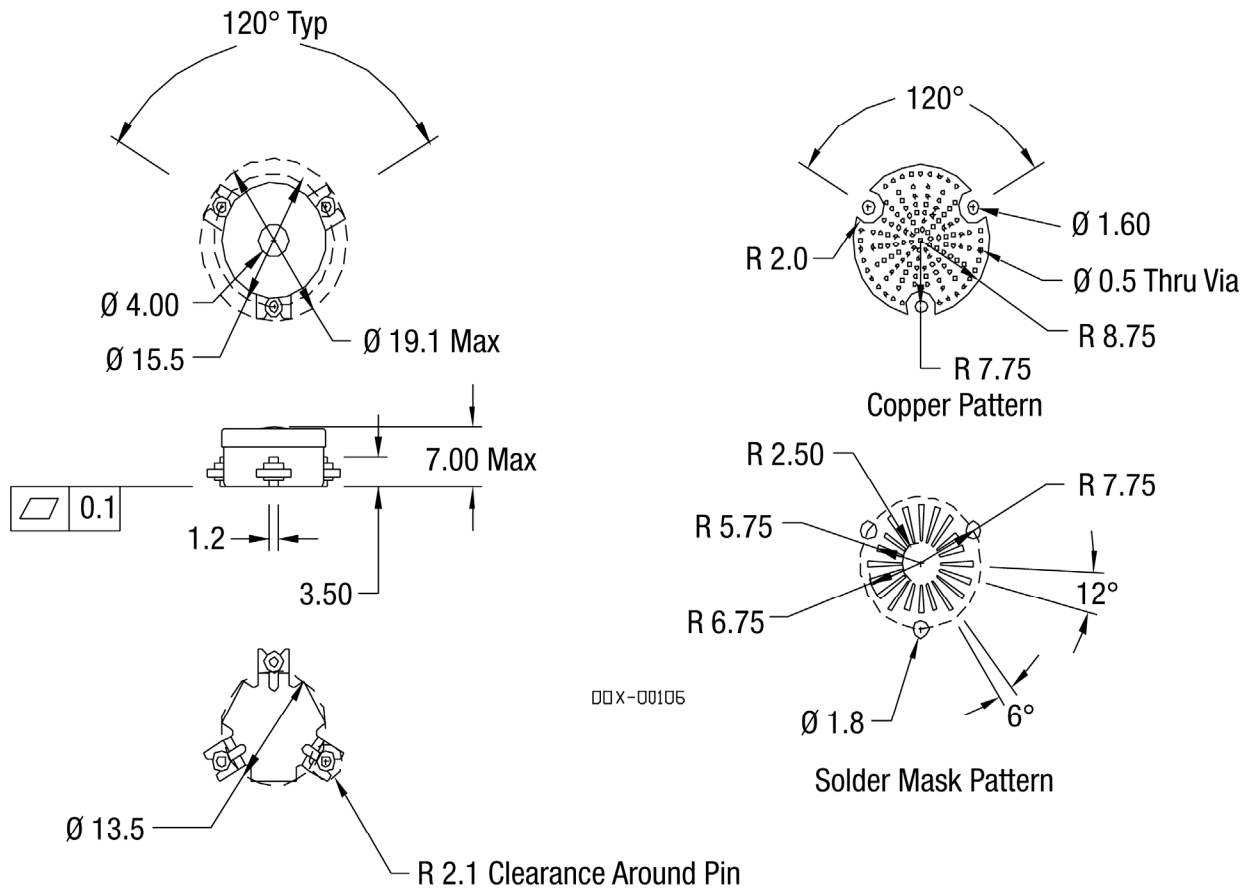
¹ Performance is guaranteed under the conditions listed in this table and over the operating temperature range.

² Return Loss and Isolation performance will not degrade by >10% at operating temperature up to +130 °C. Insertion loss will not degrade by >20% up to +130 °C.

³ See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

Table 3. SKYFR-001549 Plating Specification

Section	Base Material	Plating
Pins	Brass	Silver
Housing	Steel	Silver



Notes:

1. All dimensions are in millimeters.
2. Tolerance: ± 0.2 mm unless otherwise specified.
3. Coplanarity specification: 0.1 mm maximum.
4. Model number, lot code, and port designation are printed on top side of the device.
5. Unit marking is on a paper label on top of the cover.

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Figure 2. SKYFR-001549 Package Dimensions and PCB Footprint

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-001549	860 to 894 MHz Single-Junction Robust Lead Circulator	TFX-00167 and PCB-00108

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