

DATA SHEET

# SKYFR-001924: 3600 to 3800 MHz Single-Junction Robust Lead Circulator

## Applications

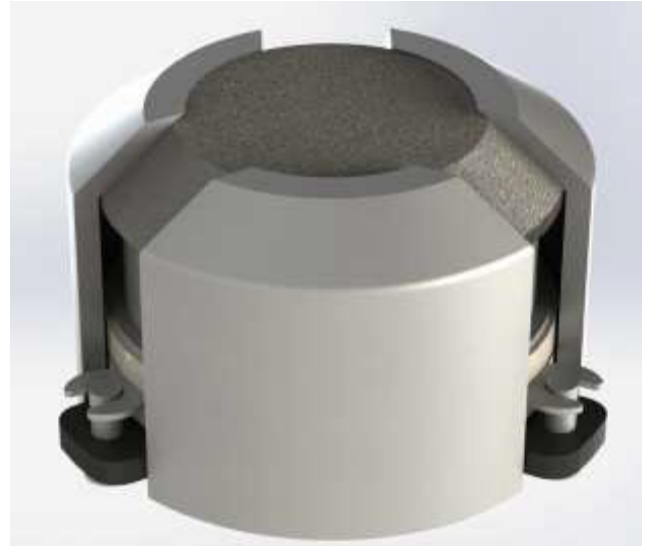
- Power amplifiers
- Wireless infrastructure

## Features

- Operating frequency range: 3600 MHz to 3800 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.



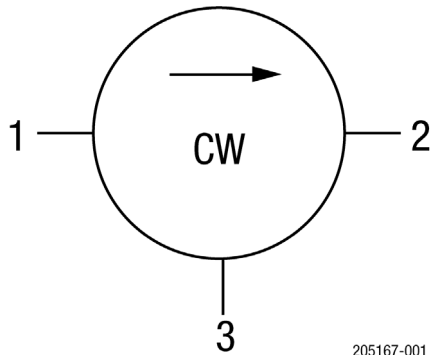
## Description

The SKYFR-001924 is a single-junction, surface-mount circulator designed for wireless infrastructure and power-amplifier applications. It operates over the frequency range of 3600 MHz to 3800 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-001924 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-001924 is shown in Figure 1.

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



205167-001

**Figure 1. SKYFR-001924 Block Diagram**

## Electrical and Mechanical Specifications

The absolute maximum ratings of the SKYFR-001924 are provided in Table 1. Electrical specifications are provided in

Table 2. Plating information is shown in Table 3. Package dimensions are shown in Figure 2.

**Table 1. SKYFR-001924 Absolute Maximum Ratings<sup>1</sup>**

Parameter	Symbol	Minimum	Maximum	Units
Average power	P <sub>AVR</sub>		20	W
Peak power	P <sub>PEAK</sub>		100	W
Operating temperature	T <sub>OP</sub>	-40	+105	°C
Storage temperature	T <sub>STOR</sub>	-55	+150	°C

<sup>1</sup> 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-001924 Electrical Specifications<sup>1</sup>**

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		3600		3800	MHz
Impedance				50		Ω
Insertion loss	IL				0.35	dB
Isolation	ISO		20			dB
Return loss	RL		20			dB
Return loss	RL	3000 to 4400 MHz	3			dB
Attenuation		2 x Tx	20			dB
Attenuation		3 x Tx	10			dB
Attenuation		n x Tx	5			dB
2nd harmonic		2 x Tx @ 5W CW	60			dBc
3rd harmonic		3 x Tx @ 5W CW	60			dBc
Group delay			0.5		2.0	ns
Intermodulation distortion <sup>2</sup>	IMD	2 x 2.5W CW tones, 5 MHz spacing	60			dBc
Intermodulation distortion <sup>2</sup>	IMD	2 x 5W CW tones, 5 MHz spacing	55			dBc

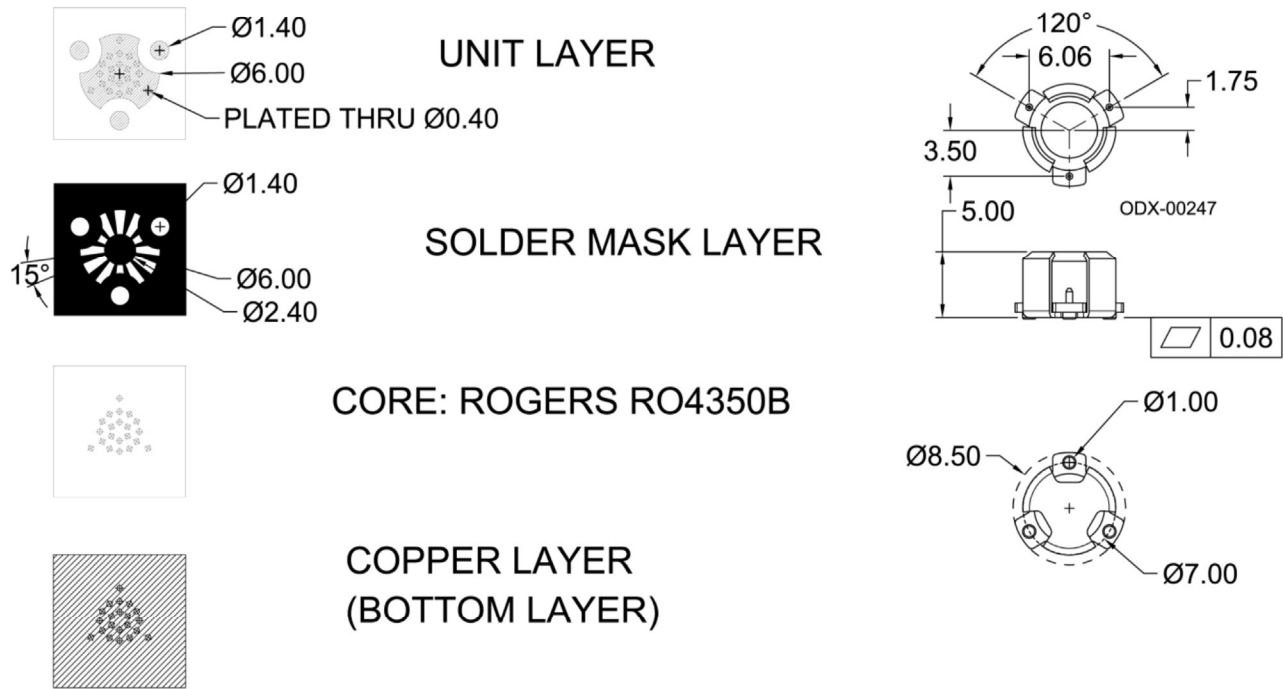
<sup>1</sup> Performance is guaranteed under the conditions listed in this table and over the operating temperature range.

<sup>2</sup> See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

<sup>3</sup> Test fixture PCB is Rogers 4350, 0.5 mm thick.

**Table 3. SKYFR-001924 Plating Specification**

Section	Base Material	Plating
Pins	Bronze	Silver
Housing	Steel	Silver



All dimensions in millimeters.  
 Tolerance:  $\pm 0.2\text{mm}$  unless otherwise specified.  
 Coplanarity specification:  $0.08\text{mm}$  maximum.  
 Model number, lot code and port designation printed on top side of device.

**Figure 2. SKYFR-001924 Package Dimensions**

## Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-001924	3600 to 3800 MHz Single-Junction Robust Lead Circulator	UNK1023059/03

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