

DATA SHEET

# SKYFR-002125: 1930 to 1990 MHz Single-Junction Robust Lead Circulator

## Applications

- Wireless infrastructure
- Power amplifiers

## Features

- Small surface-mount package
- Operating frequency range: 1930 MHz to 1990 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-002125 is a single-junction, surface-mount circulator designed for wireless infrastructure and power-amplifier applications. It operates over the frequency range of 1930 MHz to 1990 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-002125 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-002125 is shown in Figure 1.

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

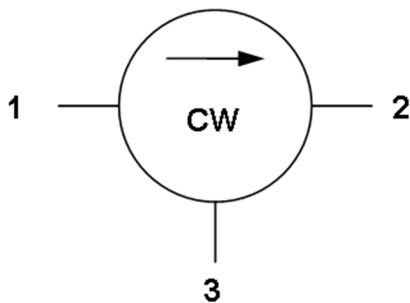


Figure 1. SKYFR-002125 Block Diagram

### Electrical and Mechanical Specifications

The absolute maximum ratings of the SKYFR-002125 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-002125 Absolute Maximum Ratings<sup>1</sup>**

Parameter	Symbol	Minimum	Maximum	Units
Average power (FWD & REV)	P <sub>AVG</sub>		20	W
Peak power	P <sub>PK</sub>		100	W
Operating temperature <sup>2</sup>	T <sub>OP</sub>	-40	+105	°C
Storage temperature	T <sub>STOR</sub>	-55	+125	°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-002125 Electrical Specifications<sup>1</sup>**

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		1930		1990	MHz
Impedance				50		Ω
Insertion loss	IL			0.3	0.36	dB
Isolation	ISO			20		dB
Return loss	RL			20		dB
Attenuation		2 x Tx	15			dB
		3 x Tx	10			dB
		n x Tx	5			dB
Intermodulation distortion (Note 2)	IM3	2 x 5 W tones, 1 MHz spacing		55		dBc
Group Delay			0.4		2.0	nS

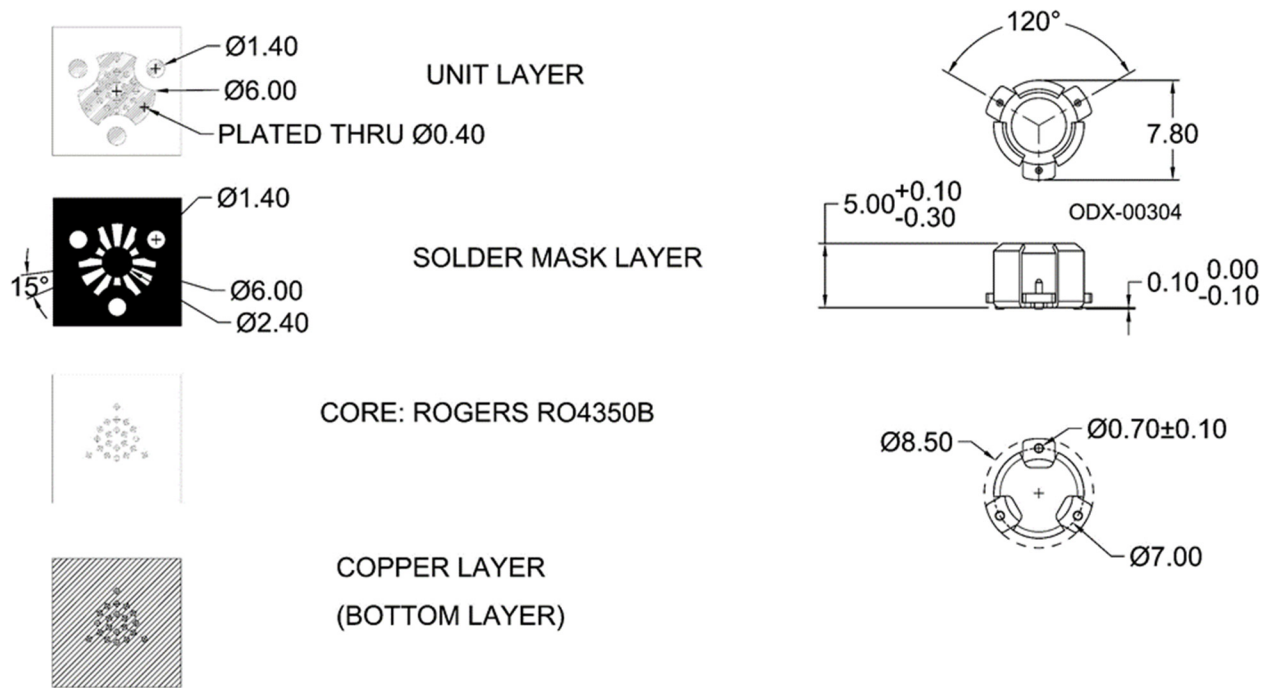
<sup>1</sup> See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

<sup>2</sup> Part tested on 0.508 mm Rogers RO4350B, trace width 1.07 mm wide, 1 oz copper.

<sup>3</sup> Component may attract to other magnetic material within 7 mm

**Table 3. SKYFR-002125 Plating Specification**

Section	Base Material	Plating
Pins	Brass	Silver
Housing	Steel	Silver



**Notes:**

1. All dimensions in millimeters.
2. Tolerance:  $\pm 0.2$  mm unless otherwise specified.
3. Coplanarity specification: 0.1 mm maximum.
4. Model number, lot code, and port designation printed on top side of device.

**Figure 2. SKYFR-002125 Package Dimensions**

## Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-002125	1930 to 1990 MHz Single-Junction Robust Lead Circulator	Pcb-00284

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