

DATA SHEET

# SKYFR-001438: 2110 to 2170 MHz Single Junction Robust Lead Isolator

## Applications

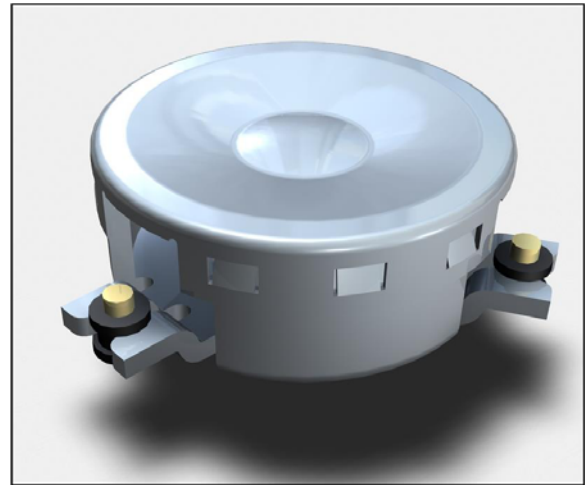
- Wireless infrastructure
- Power amplifiers

## Features

- Small surface-mount package
- Operating frequency range: 2110 MHz to 2170 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.

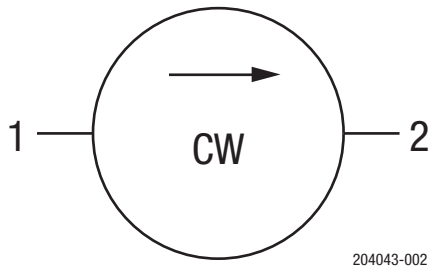


## Description

The SKYFR-001438 is a single-junction, surface-mount isolator designed for wireless infrastructure applications. It operates over the frequency range of 2110 MHz to 2170 MHz. Insertion loss is less than 0.25 dB over an operating temperature range of  $-40\text{ }^{\circ}\text{C}$  to  $+90\text{ }^{\circ}\text{C}$ .

The SKYFR-001438 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-001438 is shown in Figure 1.



**Figure 1. SKYFR-001438 Block Diagram**

### Electrical and Mechanical Specifications

The absolute maximum ratings of the SKYFR-001438 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. Figure 3 provides the tape and reel dimensions.

**Table 1. SKYFR-001438 Absolute Maximum Ratings<sup>1</sup>**

Parameter	Symbol	Minimum	Maximum	Units
Average power	P <sub>AVG</sub>		20	W
Peak power	P <sub>PK</sub>		100	W
Operating temperature	T <sub>OP</sub>	-10	+105	°C
Extended operating temperature	T <sub>EOP</sub>	-40	+125	°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-001438 Electrical Specifications<sup>1, 2</sup>**

Parameter	Symbol	Test Condition	Min	Typical	Max	Units
Frequency range	f		2110		2170	MHz
Impedance				50		Ω
Insertion loss	IL				0.20	dB
Insertion loss	IL	Over extended temperature range (-40°C to +125°C)			0.25	
Isolation	Iso		23			dB
Isolation	Iso	Over extended temperature range (-40°C to +125°C)	20			
Return loss	RL		23			dB
Return loss	RL	Over extended temperature range (-40°C to +125°C)	20			
Group delay					2.0	ns
Intermodulation distortion <sup>3</sup>	IMD	2 x 25 W CW tones, 1 MHz spacing	+55	+65		dBc

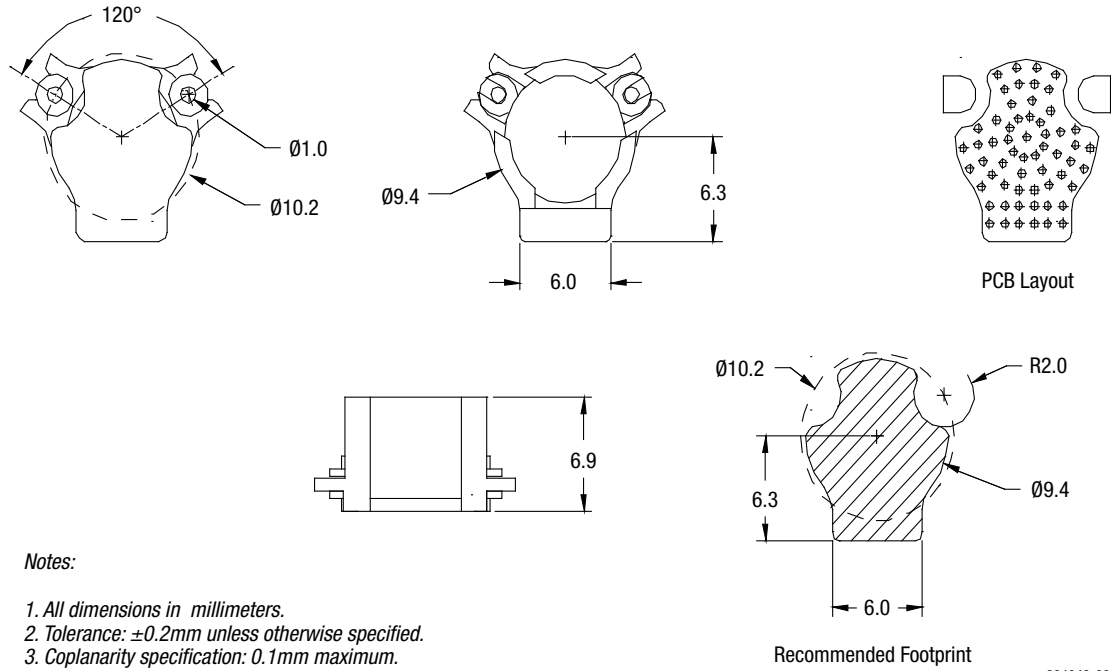
<sup>1</sup> Performance is guaranteed only under the conditions listed in this table over the operating temperature range.

<sup>2</sup> Part tested on PCB-00167, 0.508mm Rogers RO4350B, trace width 1.07mm wide, 1oz copper.

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

**Table 3. SKYFR-001438 Plating Specification**

Section	Base Material	Plating
Pins	Brass	Silver
Housing	Steel	Silver



**Notes:**

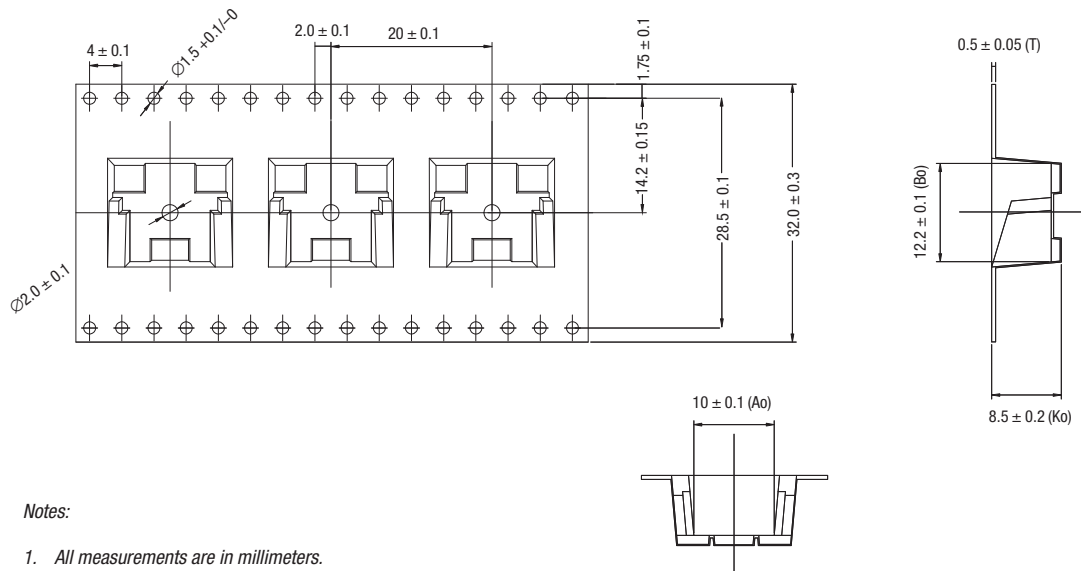
1. All dimensions in millimeters.
2. Tolerance:  $\pm 0.2$ mm unless otherwise specified.
3. Coplanarity specification: 0.1mm maximum.

Recommended Footprint

204043-003

**Figure 2. SKYFR-001438 Package Dimensions and PCB Footprint**

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**Notes:**

1. All measurements are in millimeters.
2. 10-sprocket hole pitch cumulative tolerance  $\pm 0.2$  mm.
3. Carrier camber not to exceed 1 mm in 100 mm.
4. Ao and Bo measured on a plane 0.3 mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. All dimensions meet EIA-481 requirements.
7. Material: conductive polystyrene. Must meet UP-230TM/23F/23W with surface resistivity  $<10e7$ .
8. Carrier tape, cover tape, and reel must meet EIA-541 spec of surface resistivity  $<10e7 \Omega$ .

204043-004

**Figure 3. SKYFR-001438 Tape and Reel Dimensions**

## Ordering Information

Model Name	Manufacturing Part Number	Evaluation Board Part Number
SKYFR-001438: Single Junction Lead Isolator	SKYFR-001438	TFX-00118

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