

DATA SHEET

# SKYFR-000848: 2300-2400 MHz Single Junction Robust Lead Circulator

## Applications

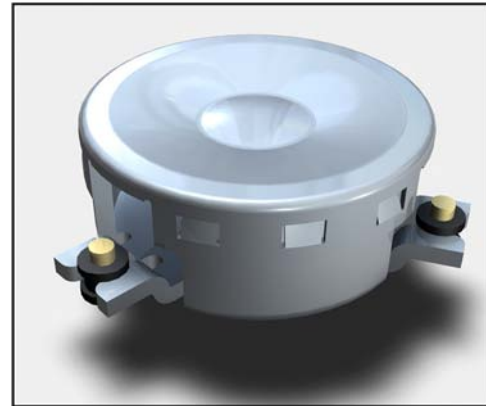
- Power amplifiers
- Wireless infrastructure

## Features

- BeO free
- Operating frequency range: 2300 MHz to 2400 MHz
- Insertion loss: 0.25 dB
- Isolation: 23 dB
- Small, surface mount package
- Shipped 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-000848 is a single-junction circulator designed for wireless infrastructure applications. It operates over the frequency range of 2300 to 2400 MHz. Insertion loss is less than 0.25 dB over an operating temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

The SKYFR-000848 comes in an industry-standard surface mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-000848 is shown in Figure 1. The absolute maximum ratings of the SKYFR-000848 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 recommended PCB footprint. Tape and reel dimensions are provided in Figure 3.

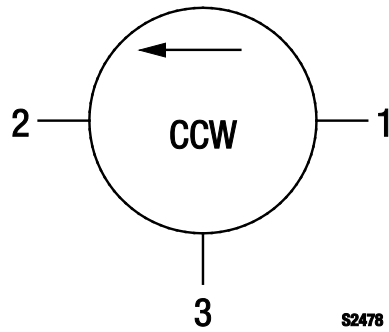


Figure 1. SKYFR-000848 Block Diagram

Table 1. SKYFR-000848 Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Average power	P <sub>AVG</sub>		140	W
Peak power	P <sub>PEAK</sub>		800	W
Operating temperature	T <sub>OP</sub>	-40	+85	°C
Extended temperature range		-40	+125	°C
Storage temperature	T <sub>ST</sub>	-55	+125	°C

**Note:** 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-000848 Electrical Specifications (Note 1)

(T<sub>OP</sub> = -40 °C to +125 °C)

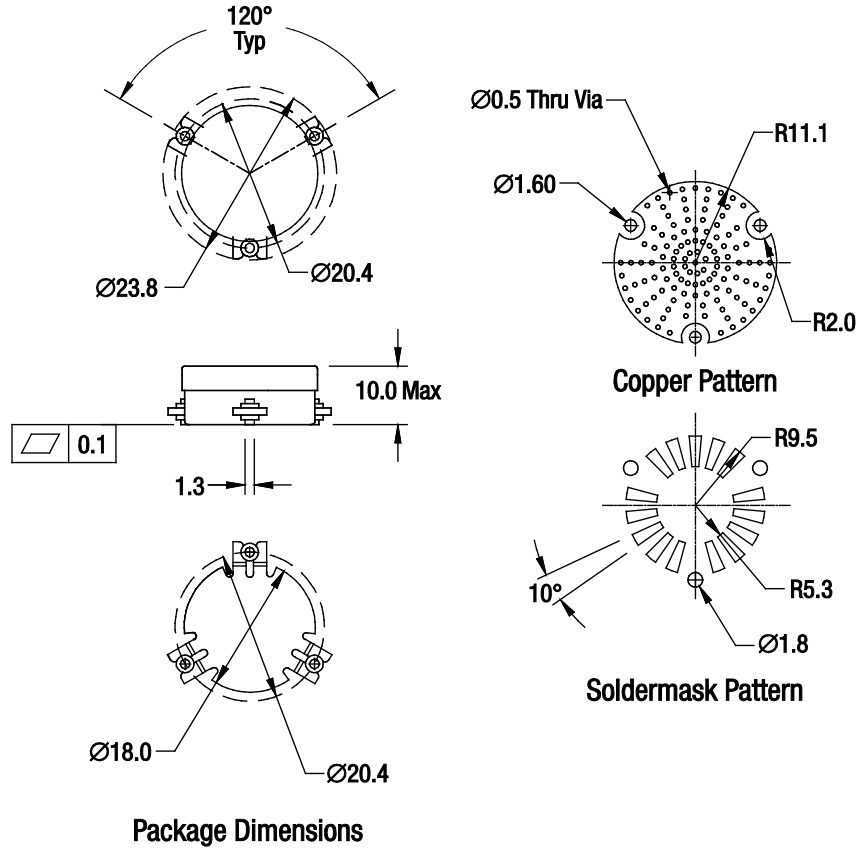
Parameter	Symbol	Test Condition	Min	Typical	Max	Units
Frequency range	f		2300		2400	MHz
Impedance				50		Ω
Insertion loss	IL	Operating temperature range		0.20	0.25	dB
Insertion loss, extended temperature range					0.30	dB
Isolation	I <sub>SO</sub>	Operating temperature range	23	25		dB
Isolation, extended temperature range			20			dB
Return loss	RL	Operating temperature range	23	25		dB
Return loss, extended temperature range			20			dB
Intermodulation Distortion (Note 2)	IMD	2 x 60 W CW tones, 5 MHz spacing	+65			dBc

**Note 1:** Performance is guaranteed only under the conditions listed in this Table.

**Note 2:** See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

Table 3. SKYFR-000848 Plating Specification

Section	Material	Plating
Pins	Bronze	Gold
Housing	Steel	Silver

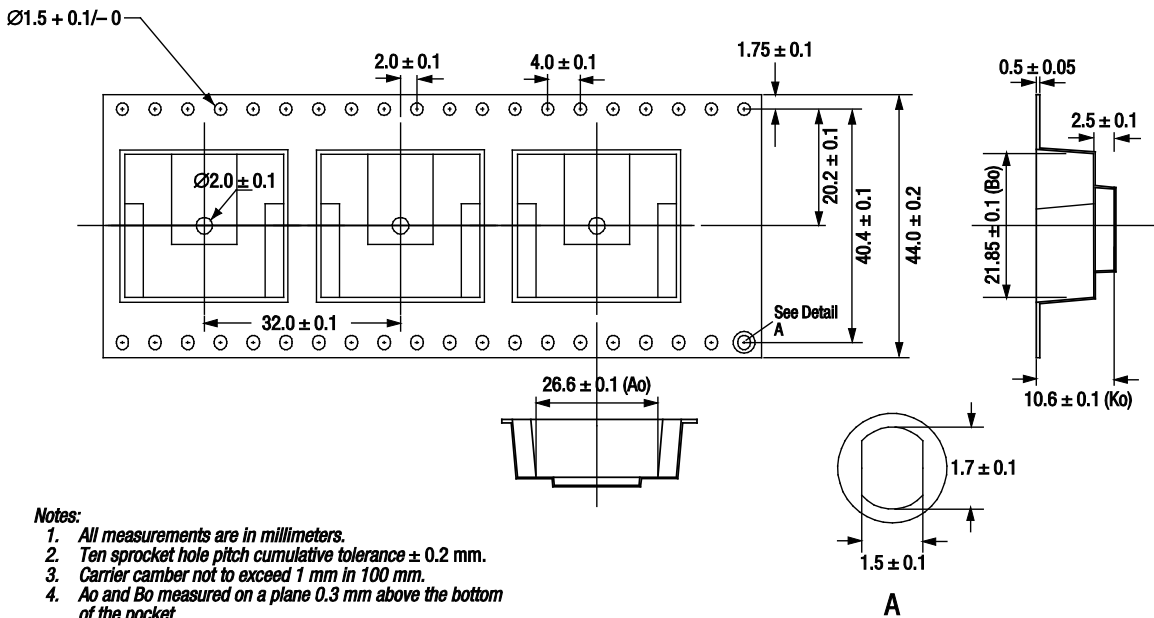


Package Dimensions

All measurements are in millimeters.

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Figure 2. SKYFR-000848 Package Dimensions and PCB Footprint



Notes:

1. All measurements are in millimeters.
2. Ten sprocket hole pitch cumulative tolerance  $\pm 0.2$  mm.
3. Carrier camber not to exceed 1 mm in 100 mm.
4.  $A_o$  and  $B_o$  measured on a plane 0.3 mm above the bottom of the pocket.
5.  $K_o$  measured from a plane on the inside bottom of the pocket to the top surface of the carrier.

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Figure 3. SKYFR-000848 Tape and Reel Dimensions

**Ordering Information**

Model Name	Manufacturing Part Number	Evaluation Board Part Number
SKYFR-000848 925-960 MHz Single Junction Lead Circulator	SKYFR-000848	MAFX-000020-RL00FR

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