DATA SHEET

SKYFR-002061: 4400 to 5000 MHz Single Junction Robust Lead Circulator

Applications

- Power amplifiers
- Wireless infrastructure

Features

- Operating frequency range: 4400 MHz to 5000 MHz
- BeO free
- RoHS compliant

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.

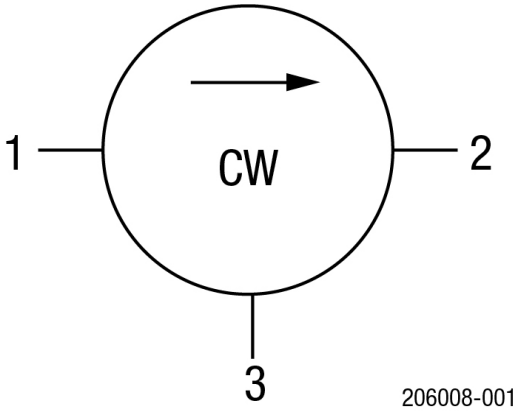


Figure 1. SKYFR-002061 Block Diagram

Description

The SKYFR-002061 is a single-junction, surface-mount circulator designed for power amplifier and wireless infrastructure applications. It operates over the frequency range of 4400 MHz to 5000 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-002061 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-002061 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-002061 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-002061 Absolute Maximum Ratings[1]

Parameter	Symbol	Minimum	Maximum	Units
Average power	P_{AVG}		15	W
Peak power	P_{PK}		30	W
Reverse power	PREV		4	W
Operating temperature	T_{OP}	-40	+105	°C
Storage temperature	T_{STOR}	-55	+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-002061 Electrical Specifications[1, 3]

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		4400		5000	MHz
Impedance				50		Ω
Input Impedance, real			38		62	Ω
Input Impedance, imaginary			-j13		+j13	jΩ
Return loss	RL	4.4 GHz to 5.0 GHz	16			dB
Return loss	RL	4.55 GHz to 5.0 GHz	17			dB
Insertion loss	IL	4.4 GHz to 5.0 GHz			0.50	dB
Insertion loss	IL	4.55 GHz to 5.0 GHz			0.50	dB
Isolation	ISO	4.4 GHz to 5.0 GHz	16			dB
Isolation	ISO	4.55 GHz to 5.0 GHz	17			dB
Out-of-band resonance			4100		5300	MHz
Intermodulation distortion[2]	IMD	2 x 1 W CW tones, 1 MHz spacing	60			dB
Harmonic, 2nd			10			dB
Harmonic, 3rd			5			dB
Group delay					2.0	nS

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

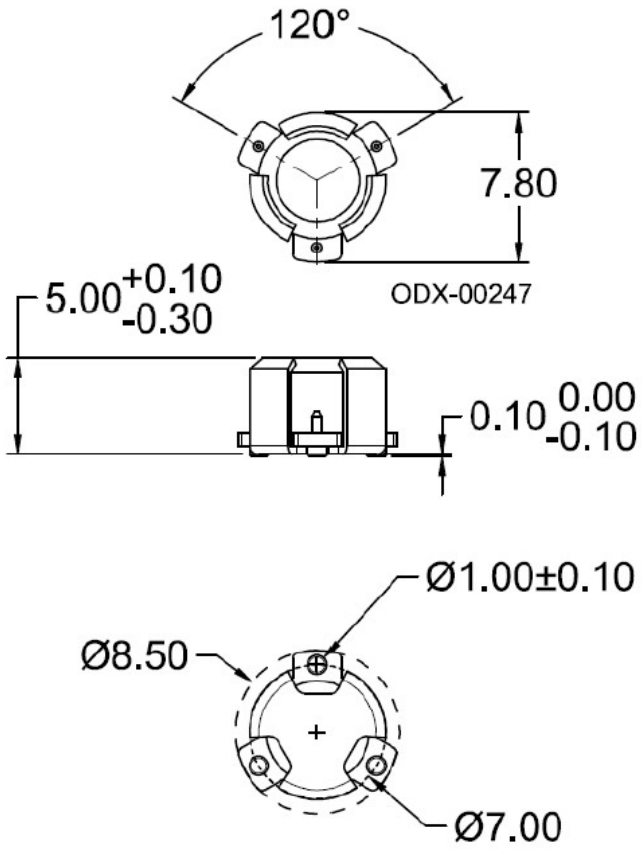
[2] See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

[3] Return Loss and Isolation performance will not degrade by >10% with an operating temperature of +130 °C.

[4] Insertion Loss performance will not degrade by >20% with an operating temperature of +130 °C.

Table 3. SKYFR-002061 Plating Specification

Section	Base Material	Plating
Pins	Bronze	Silver
Housing	Steel	Silver



Notes:

1. *All dimensions 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 printed on top side of device.*

Figure 2. SKYFR-002061 Package Dimensions

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-002061	4400 to 5000 MHz Single-Junction Robust Lead Circulator	PCB-00284