DATA SHEET

SKYFR-001693: 5150 to 5925 MHz Single-Junction Robust Lead Circulator

Applications

- Wireless infrastructure
- Power amplifiers

Features

- Small surface-mount package
- Operating frequency range: 5150 MHz to 5925 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.

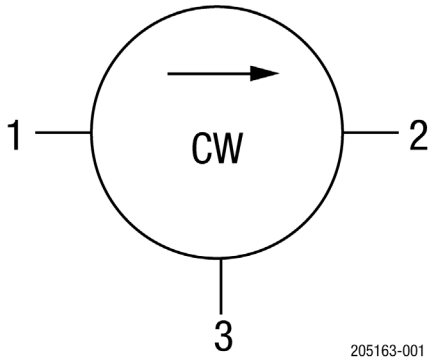
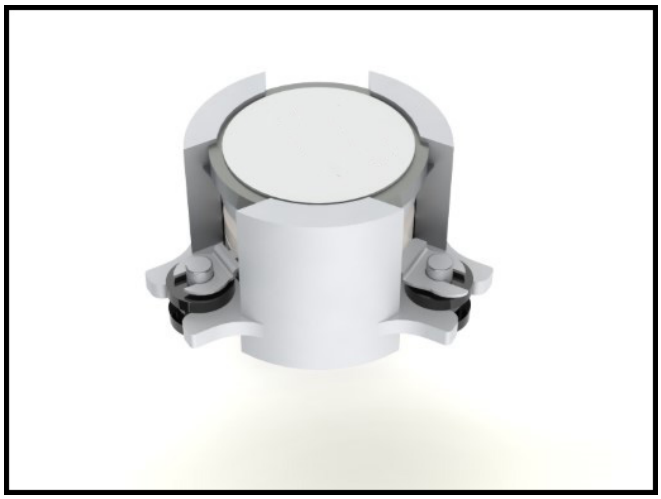


Figure 1. SKYFR-001693 Block Diagram



Description

The SKYFR-001693 is a single-junction, surface-mount circulator designed for wireless infrastructure and power-amplifier applications. It operates over the frequency range of 5150 MHz to 5925 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-001693 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-001693 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-001693 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-001693 Absolute Maximum Ratings[1]

Parameter	Symbol	Minimum	Maximum	Units
Average power	P_{AVG}		10	W
Peak power	P_{PK}		30	W
Operating temperature	T_{OP}	-40	+105	°C
Storage temperature	T_{STOR}	-55	+125	°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-001693 Electrical Specifications[1,2]

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		5150		5925	MHz
Impedance				50		Ω
Insertion loss	IL			0.35	0.4	dB
Isolation	ISO		18	20		dB
Return loss	RL		18	20		dB
Group delay					2.0	ns
Group delay variation					0.5	ns
Intermodulation distortion[3]	IMD	2 x 1 W CW tones, 1 MHz spacing			-60	dBc

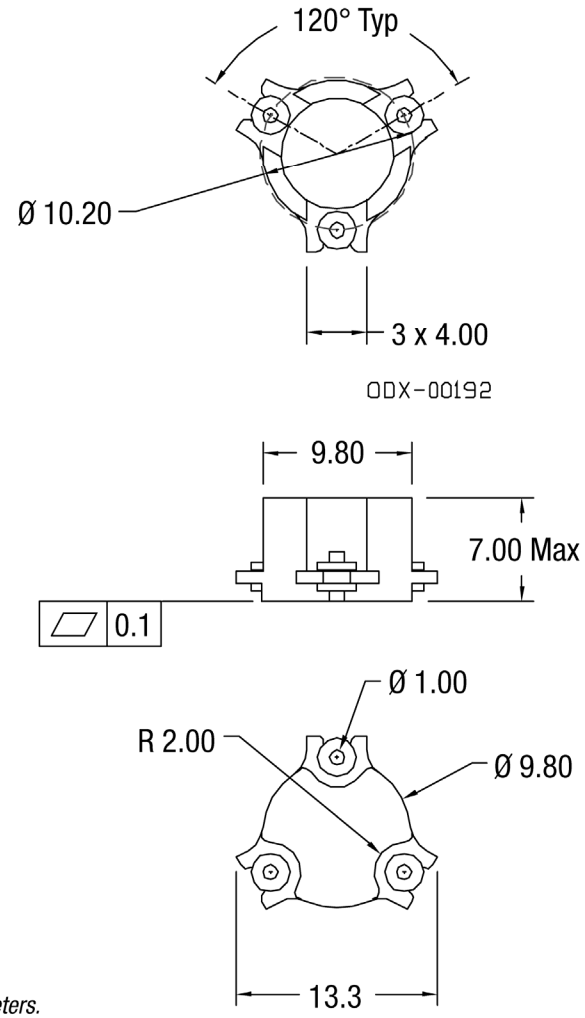
[1] Performance is guaranteed under the conditions listed in this table and over the operating temperature range.

[2] Test fixture PCB is Rogers RO4350B, 0.25 mm thick, 0.5 mm track width.

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

Table 3. SKYFR-001693 Plating Specification

Section	Base Material	Plating
Pins	Brass	Silver
Housing	Steel	Silver



Notes:
1. *All dimensions are 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 are printed on top side of the device.*

205163-002

Figure 2. SKYFR-001693 Package Dimensions and PCB Footprint

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-001693	5150 to 5925 MHz Single-Junction Robust Lead Circulator	TFX-00118