

DATA SHEET

SKYFR-002118: 2110 to 2180 MHz Single-Junction Robust Lead Circulator

Applications

- Wireless infrastructure
- Power amplifiers

Features

- Small surface-mount package
- Operating frequency range: 2110 MHz to 2180 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.

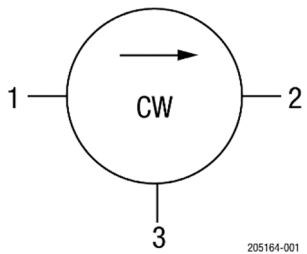


Figure 1. SKYFR-002118 Block Diagram

Description

The SKYFR-002118 is a single-junction, SMT circulator designed for radar and power-amplifier applications. It operates over the frequency range of 2110 MHz to 2180 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-002118 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-002118 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-002118 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.

Table 1. SKYFR-002118 Absolute Maximum Ratings¹

Parameter	Symbol	Minimum	Maximum	Units
Average power	PAVG		20	W
Peak power	PPK		100	W
Operating temperature ²	TOP	-40	+105	°C
Storage temperature	TSTOR	-55	+125	°C

¹ Exposure to maximum rating conditions for extended periods may reduce device reliability. Exceeding any of the limits listed here may result in permanent damage to the device.

Table 2. SKYFR-002118 Electrical Specifications¹

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		2110		2180	MHz
Impedance				50		Ω
Insertion loss	IL				0.35	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 5W tones, 1MHz spacing		55		dBc
Group Delay			0.4		2.0	nS

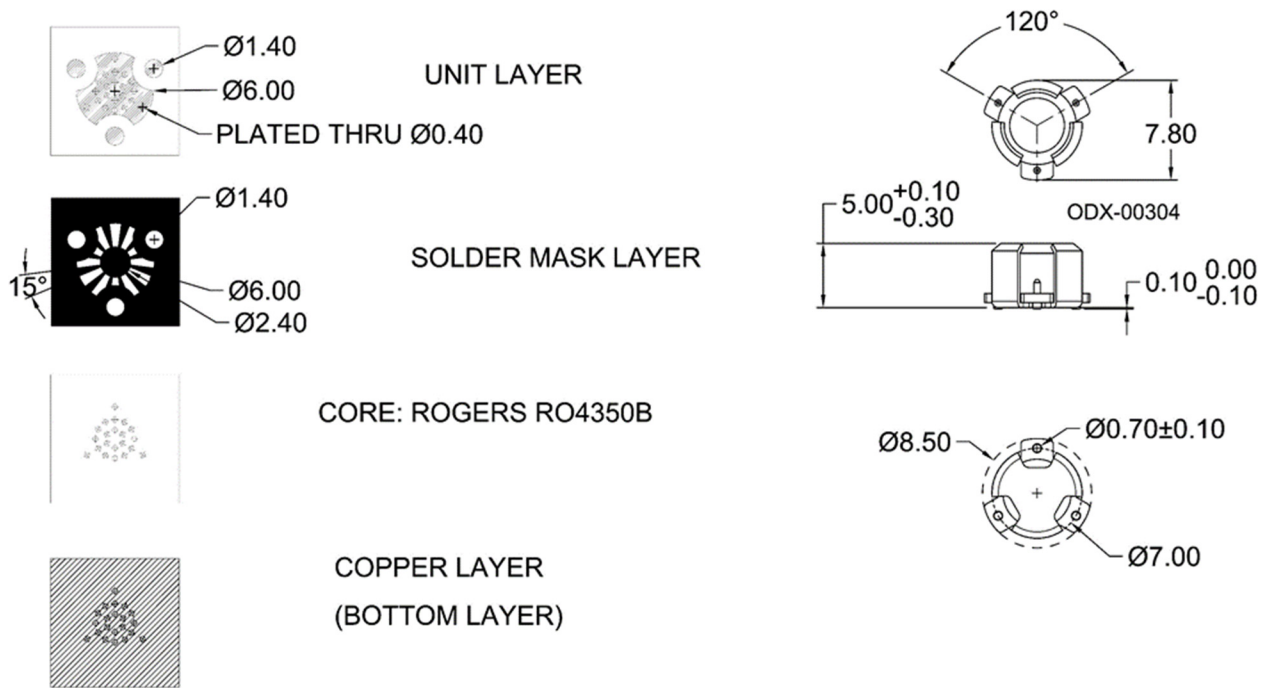
¹ See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

² Part tested on 0.508 mm Rogers R04350B, trace width 1.07 mm wide, 1 oz copper.

³ Component may attract to other magnetic material within 7 mm

Table 3. SKYFR-002118 Plating Specification

Section	Base Material	Plating
Leads	Brass	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-002118 Package Dimensions

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-002118	2110 to 2180 MHz Single-Junction Robust Lead Circulator	PCB-00284

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