

DATA SHEET

SKYFR-001688: 2110 to 2170 MHz Single-Junction Robust Lead Circulator

Applications

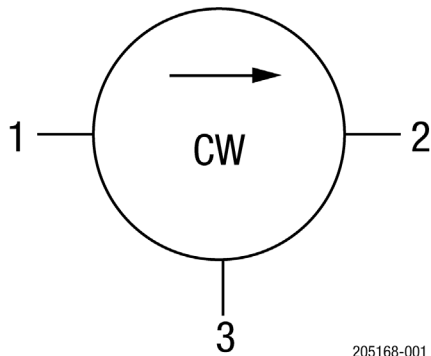
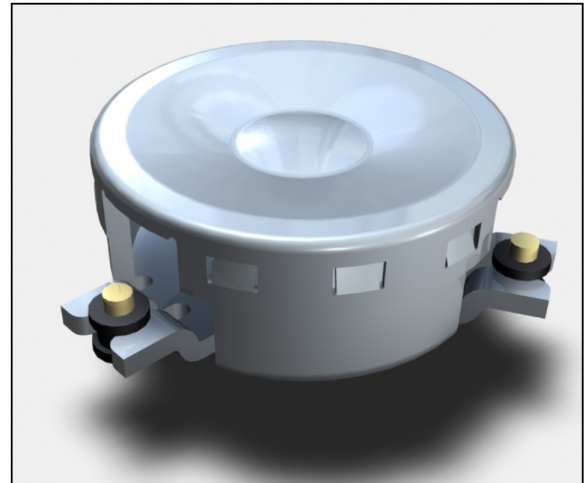
- Power amplifiers

Features

- 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.



205168-001

Figure 1. SKYFR-001688 Block Diagram

Description

The SKYFR-001688 is a single-junction circulator designed for power-amplifier applications. It operates over the frequency range of 2110 MHz to 2170 MHz with an operating temperature range of -40 °C to +105 °C.

A block diagram of the SKYFR-001688 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-001688 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-001688 Absolute Maximum Ratings¹

Parameter	Symbol	Minimum	Maximum	Units
Average power	P _{AVG}		70	W
Peak power	P _{PK}		500	W
Operating temperature	T _{OP}	-40	+105	°C
Storage temperature	T _{STOR}	-65	+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-001688 Electrical Specifications¹

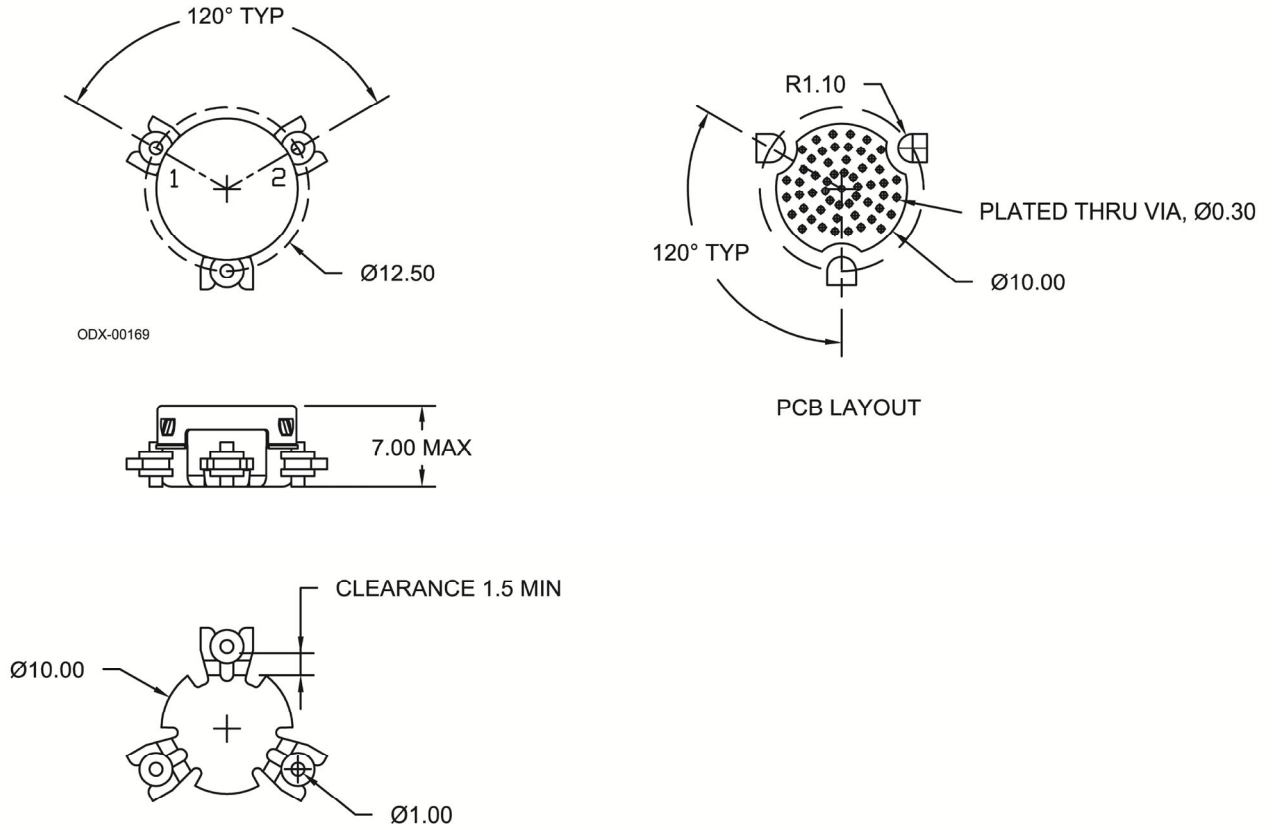
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		2110		2170	MHz
Impedance				50		Ω
Insertion loss	IL				0.20	dB
Isolation	ISO	2110 to 2170 MHz	25			dB
Isolation	ISO	1960 to 2320 MHz	10			dB
Return loss	RL		23			dB
Group delay					2.0	ns
Group delay variation					0.5	ns
2 nd harmonic attenuation			10			dB
3 rd harmonic attenuation			5			dB
Intermodulation distortion ²	IMD	2 x 20 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 See Skyworks Application Note, *Intermodulation Distortion Measurements of Ferrites*, document number 201537 for further details.

Table 3. SKYFR-001688 Plating Specification

Section	Base Material	Plating
Pins	Bronze	Silver
Housing	Steel	Silver



- Notes:
1. All dimensions are in millimeters.
 2. Tolerance: ± 0.2 mm unless otherwise specified.
 3. Model number, lot code, and port designation are printed on top side of the device.

Figure 2. SKYFR-001688 Package Dimensions and PCB Footprint

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-001688	2110 to 2170 MHz Single-Junction Robust Lead Circulator	TFX-00118

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