

DATA SHEET

SKYFR-001723: 758 to 788 MHz Single-Junction Robust Lead Circulator

Applications

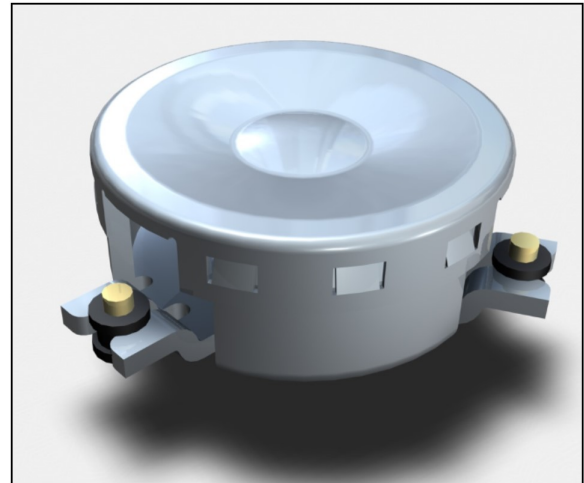
- Wireless infrastructure
- Power amplifiers

Features

- Small surface-mount package
- Operating frequency range: 758 MHz to 788 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.



Description

The SKYFR-001723 is a single-junction, surface-mount circulator designed for wireless infrastructure and power-amplifier applications. It operates over the frequency range of 758 MHz to 788 MHz with an operating temperature range of -40 °C to +105 °C.

The SKYFR-001723 comes in an industry-standard surface-mount package and is designed for automated SMT placement.

A block diagram of the SKYFR-001723 is shown in Figure 1.

For tape and reel information, refer to the *Tape and Reel Guidelines for Isolators and Circulators* Application Note.

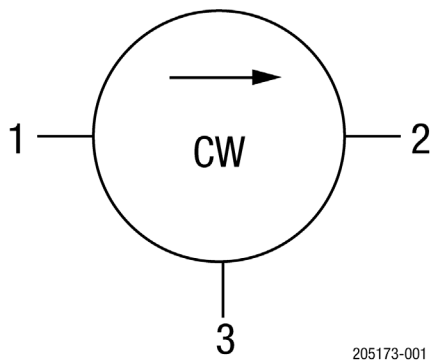


Figure 1. SKYFR-001723 Block Diagram

Electrical and Mechanical Specifications

The absolute maximum ratings of the SKYFR-001723 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-001723 Absolute Maximum Ratings¹

Parameter	Symbol	Minimum	Maximum	Units
Average power	P _{AVG}	70	80	W
Peak power	P _{PK}	200	250	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-001723 Electrical Specifications¹

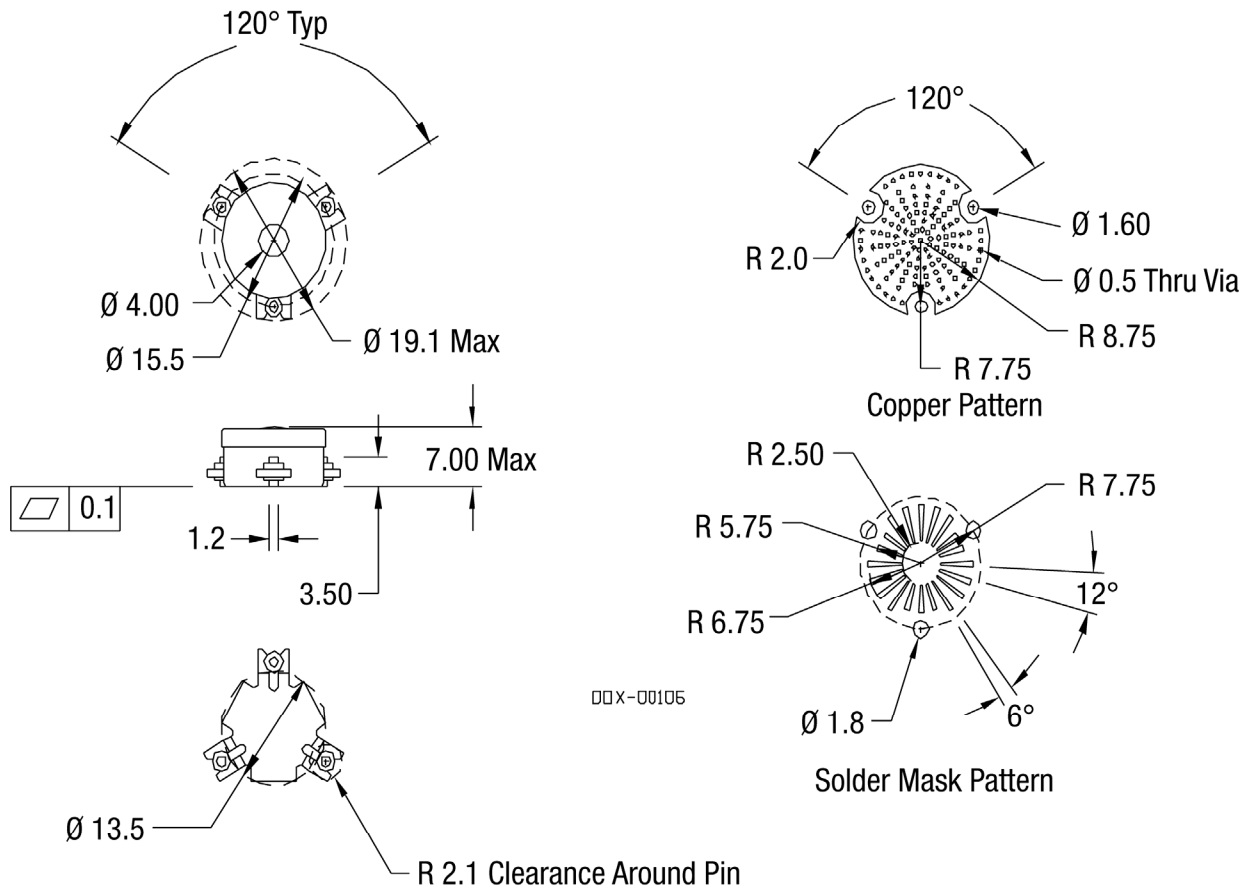
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Frequency range	f		758		788	MHz
Impedance				50		Ω
Input impedance, real			40		60	Ω
Input impedance, imaginary			-j9		+j9	Ω
Insertion loss	IL				0.38	dB
Isolation	ISO		23			dB
Return loss	RL		18			dB
Group delay					2.0	ns
Group delay variation					0.5	ns
2 nd harmonics			15			dB
3 rd harmonics			10			dB
Out-of-band resonance point			>300			MHz
Intermodulation distortion ²	IMD	2 x 20 W CW tones, 1 MHz spacing (-40 to +85 °C)	54			dBc
Intermodulation distortion ²	IMD	2 x 20 W CW tones, 1 MHz spacing (+85 to +110 °C)	52			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-001723 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.
5. Unit marking is on a paper label on top of the cover.

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Figure 2. SKYFR-001723 Package Dimensions and PCB Footprint

Ordering Information

Part Number	Product Description	Evaluation Board Part Number
SKYFR-001723	758 to 788 MHz Single-Junction Robust Lead Circulator	TFX-00167 / PCB-00108

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