

DATA SHEET

# MAFR-000630-000001: 925-960 MHz Single Junction Drop-In Circulator

## Applications

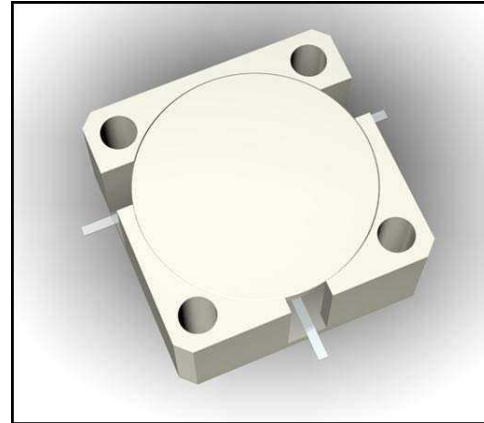
- Wireless infrastructure

## Features

- BeO free
- Operating frequency range: 925 MHz to 960 MHz
- Insertion loss: 0.25 dB
- Isolation: 20 dB
- Return loss: 20 dB
- IMD3 (2 × 65 W CW tones, 1 MHz spacing):  
–80 dBc



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 MAFR-000630-000001 is a single-junction circulator designed for wireless infrastructure applications. It operates over the frequency range of 925 MHz to 960 MHz. Third Order Intermodulation Distortion (IMD3) is an excellent –80 dBc (2 × 65 W CW tones, 1 MHz spacing). Insertion loss is less than 0.25 dB over an operating temperature range of –40 °C to +90 °C.

The MAFR-000630-000001 comes in an industry-standard package designed for drop-in assembly.

A block diagram of the MAFR-000630-000001 is shown in Figure 1. The absolute maximum ratings of the MAFR-000630-000001 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.

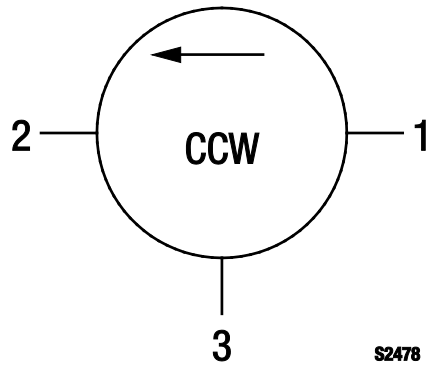


Figure 1. MAFR-000630-000001 Block Diagram

Table 1. MAFR-000630-000001 Absolute Maximum Ratings

| Parameter             | Symbol            | Minimum | Maximum | Units |
|-----------------------|-------------------|---------|---------|-------|
| Average power         | P <sub>AVR</sub>  |         | 250     | W     |
| Peak power            | P <sub>PEAK</sub> |         | 1200    | W     |
| Operating temperature | T <sub>OP</sub>   | -40     | +90     | °C    |
| Storage temperature   | T <sub>ST</sub>   | -55     | +125    | °C    |

**Note:** 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. MAFR-000630-000001 Electrical Specifications (Note 1)  
(T<sub>OP</sub> = -40 °C to +90 °C)

| Parameter   | Symbol          | Test Condition                   | Min | Typical | Max  | Units |
|---|-----------------|----------------------------------|-----|---------|------|-------|
| Frequency range   | f               |                                  | 925 |         | 960  | MHz   |
| Impedance   |                 |                                  |     | 50      |      | Ω     |
| Insertion loss  | IL              |                                  |     |         | 0.25 | dB    |
| Isolation   | I <sub>SO</sub> |                                  | 20  |         |      | dB    |
| Return loss   | RL              |                                  | 20  |         |      | dB    |
| Group delay   |                 |                                  |     |         | 2    | ns    |
| 3 <sup>rd</sup> Order Intermodulation Distortion (Note 2) | IMD3            | 2 x 65 W CW tones, 1 MHz spacing |     |         | -80  | dBc   |

**Note 1:** Performance is guaranteed only under the conditions listed in this Table.

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

Table 3. MAFR-000630-000001 Plating

| Section | Material | Plating |
|---------|----------|---------|
| Leads   | Copper   | Silver  |
| Housing | Steel    | Silver  |



## Ordering Information

| Model Name  | Manufacturing Part Number | Evaluation Board Part Number |
|---|---------------------------|------------------------------|
| MAFR-000630-000001 Single Junction Drop-In Circulator | MAFR-000630-000001        | MAFX-999999-000PPR           |

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