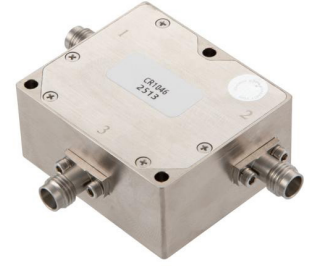


Circulator 2.4mm Female with 12 dB Isolation from 45 to 50 GHz Rated to 20 Watts



FMCR1046

Features

- Forward Power 20 watts
- Wide-Band Operating Frequency Range of 45 to 50 GHz
- 2.4mm Female Connectors
- Low VSWR of 1.8:1 Max
- Low Insertion Loss of 1.3 dB
- Good Isolation Performance of 12 dB Minimum

Applications

- Radar Systems
- Military
- Wireless Radio Systems
- Telecom Infrastructure
- Communication Systems
- R&D Labs
- Microwave Radio Systems

Description

The FMCR1046 is a high power circulator offering a forward power rating of 20 Watts over an operational frequency band of 45 to 50 GHz. This coaxial part uses three 2.4mm female connectors on the three ports and has a minimum of 12 dB of isolation.

Fairview Microwave offers a wide variety of circulators to fit your needs. These unique devices enable two signals to use one channel. The classic use of this three port device is for the line/coax between an antenna and a transceiver, allowing the receive signal to come from the antenna (port 1) to the receiver (port 2) while the transmit signal goes from the transmitter (port 3) to the antenna (port 1). An isolator can be created by terminating one port into a matched load. These components can be used in antenna transmitting and receiving, radar, amplifier systems and anything that requires isolation from a signal reflection and the ability to send signals in opposite directions down a single channel. These circulators feature excellent insertion loss, high isolation and reliability.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	45		50	GHz
Impedance		50		Ohms
Insertion Loss		0.8	1.3	dB
Isolation	12	15		dB
VSWR		1.5:1	1.8:1	
Forward Power, CW			20	Watts

Electrical Specification Notes:

Due to the magnetic components in the circulators, please keep it at least 0.2 inches away from magnetic materials during installation or placement.

Mechanical Specifications

Size

Length	1.46 in [37.08 mm]
Width	1.69 in [42.93 mm]
Height	0.79 in [20.07 mm]
Weight	0.19 lbs [86.18 g]
Body Material and Plating	Aluminum Alloy, Nickel

Configuration

Design	Single Junction
Direction	Clockwise

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Package Style	Connectorized
Connector 1	2.4mm Female
Connector 2	2.4mm Female
Connector 3	2.4mm Female

Environmental Specifications

Temperature	
Operating Range	-20 to +70 deg C
Storage Range	-40 to +85 deg C
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msec half sine wave,3 axis both directions
Vibration	25gRMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

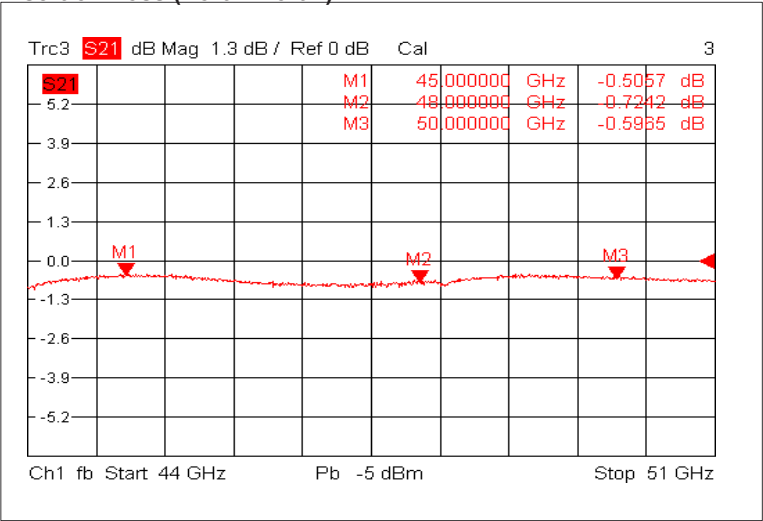
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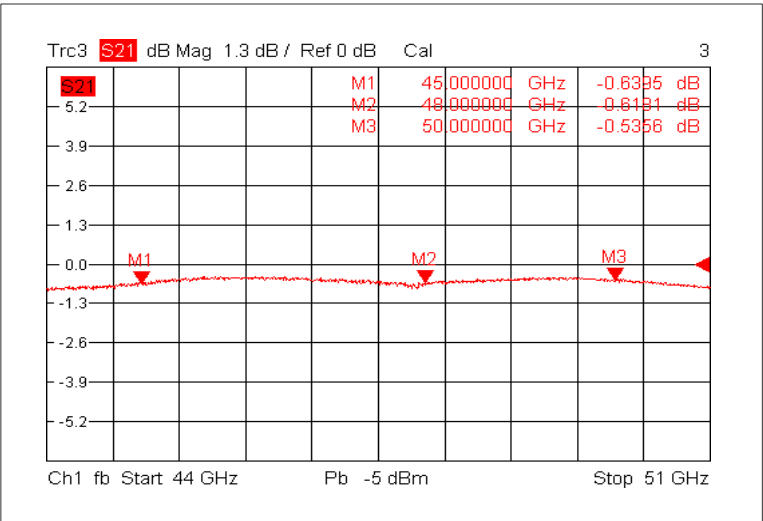


Typical Performance Data

Insertion Loss (Port 1-Port 2)

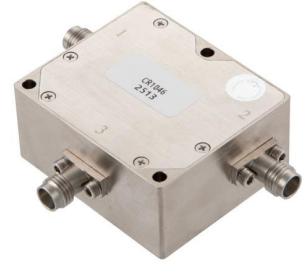


Insertion Loss (Port 2-Port 3)

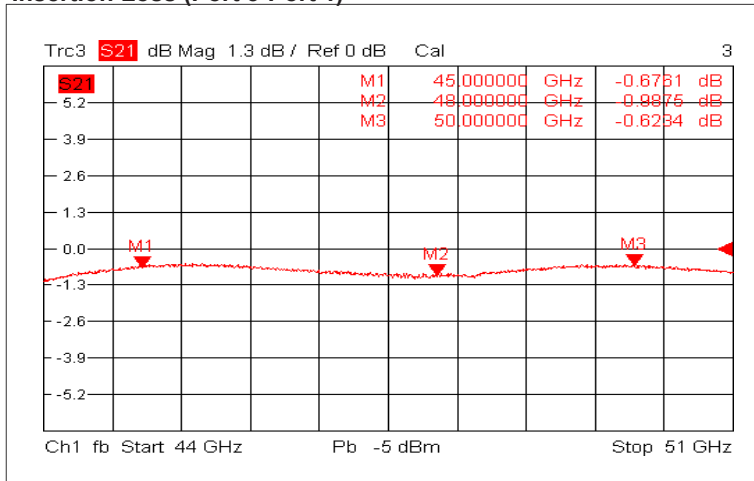


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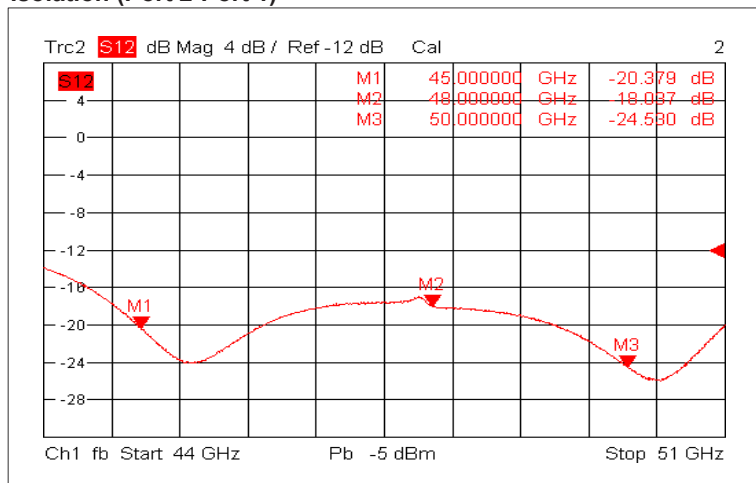
FMCR1046



Insertion Loss (Port 3-Port 1)

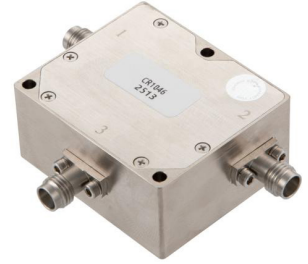


Isolation (Port 2-Port 1)

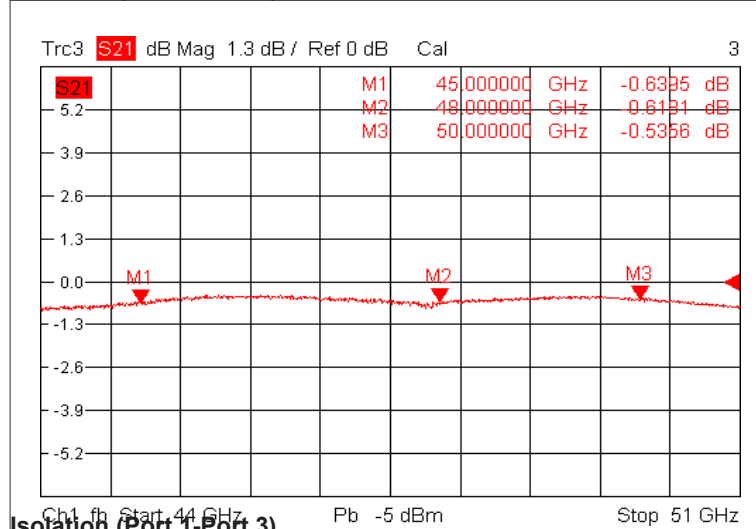


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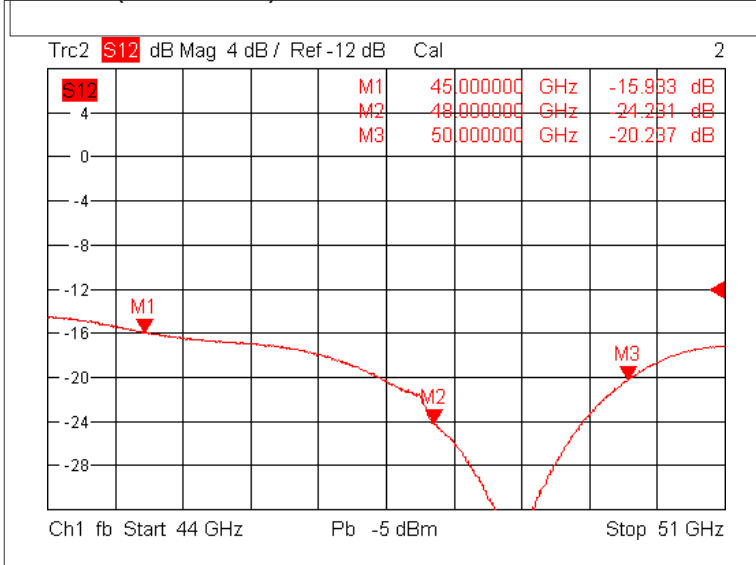
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Isolation (Port 3-Port 2)

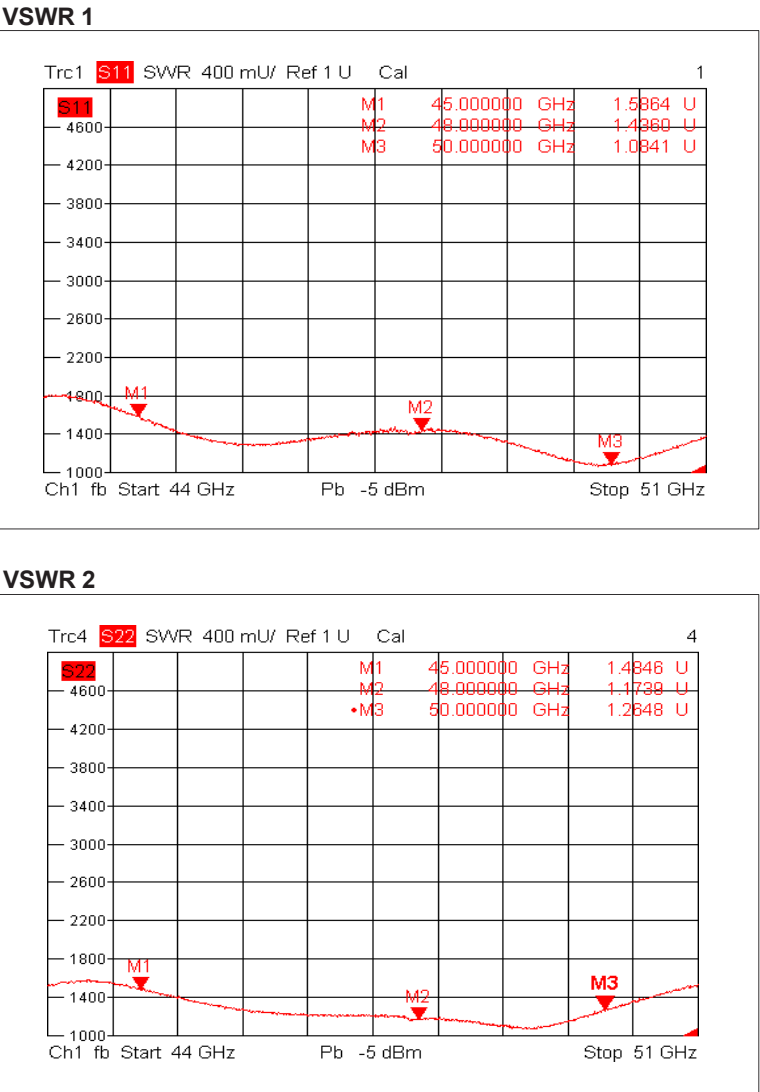


Isolation (Port 1-Port 3)

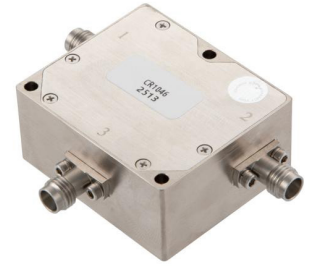


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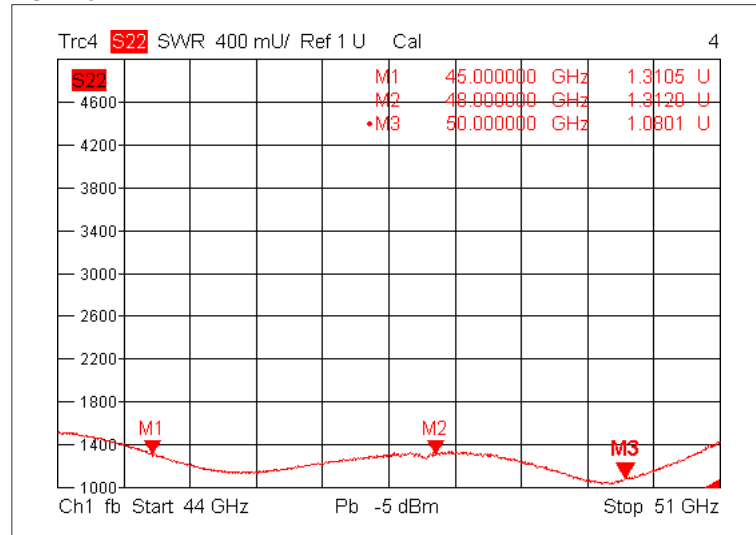


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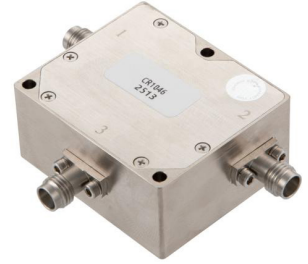
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VSWR3



Circulator 2.4mm Female with 12 dB Isolation from 45 to 50 GHz Rated to 20 Watts

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Circulator 2.4mm Female with 12 dB Isolation from 45 to 50 GHz Rated to 20 Watts from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Circulator 2.4mm Female with 12 dB Isolation from 45 to 50 GHz Rated to 20 Watts FMCR1046](https://www.fairviewmicrowave.com/circulator-2.4mm-female-12db-isolation-50-ghz-20-watts-fmcr1046-p.aspx)

URL: <https://www.fairviewmicrowave.com/circulator-2.4mm-female-12db-isolation-50-ghz-20-watts-fmcr1046-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume liability arising out of the use of any part or document.

FMCR1046 CAD Drawing

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