

Circulator with 18 dB Isolation from 4 to 8 GHz, 80 Watts and N Female



PE83CR1042

Features

- Forward Power 80 watts
- Wide-Band Operating Frequency Range of 4 to 8 GHz
- N-Type Female Connectors
- Low VSWR of 1.3:1 Max
- Low Insertion Loss of 1.5 dB
- Good Isolation Performance of 18 dB Minimum

Applications

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

Description

The PE83CR1042 is a high power circulator offering a forward power rating of 80 Watts over an operational frequency band of 4 to 8 GHz. This coaxial part uses three N-Type female connectors on the three ports and has a minimum of 18 dB of isolation.

Pasternack 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	4		8	GHz
Impedance		50		Ohms
Insertion Loss		0.5	1.5	dB
Isolation	18	18.5		dB
VSWR		1.25:1	1.3:1	
Forward Power, CW			80	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	1.02 in [25.91 mm]
Width	0.79 in [20.07 mm]
Height	0.55 in [13.97 mm]
Weight	0.15 lbs [68.04 g]
Body Material and Plating	Aluminum Alloy, Nickel

Configuration

Design	Single Junction
Direction	Clockwise

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Package Style	Connectorized
Connector 1	N Female
Connector 2	N Female
Connector 3	N 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:

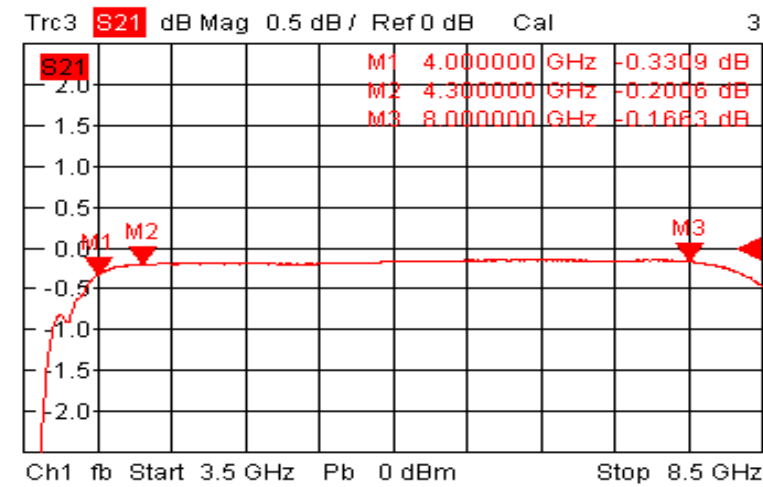
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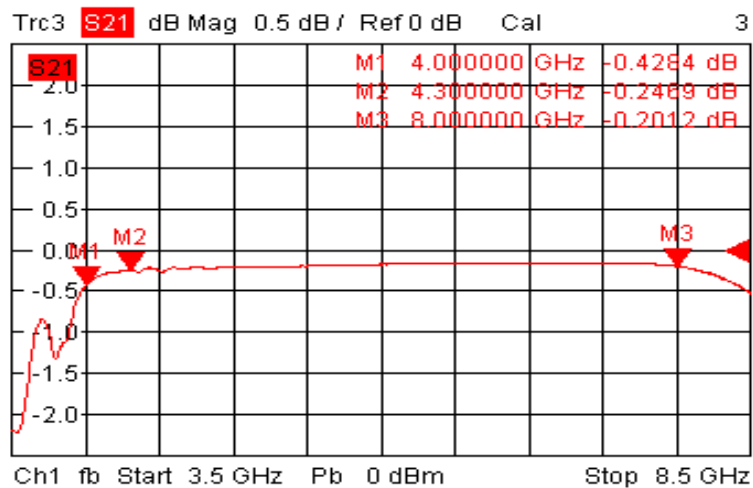


Typical Performance Data

Insertion Loss (Port 1-Port 2)



Insertion Loss (Port 2-Port 3)

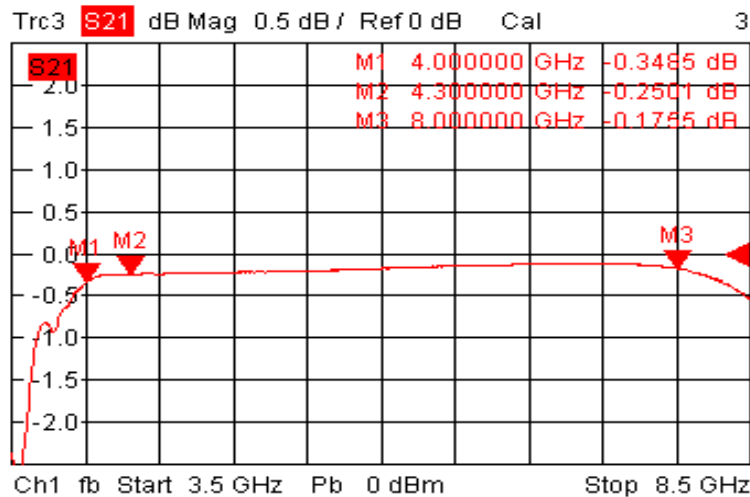


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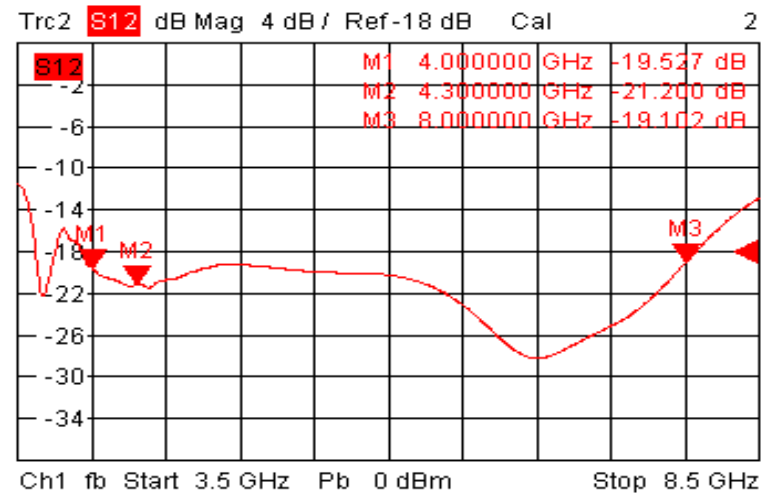
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Insertion Loss (Port 3-Port 1)



Isolation (Port 2-Port 1)

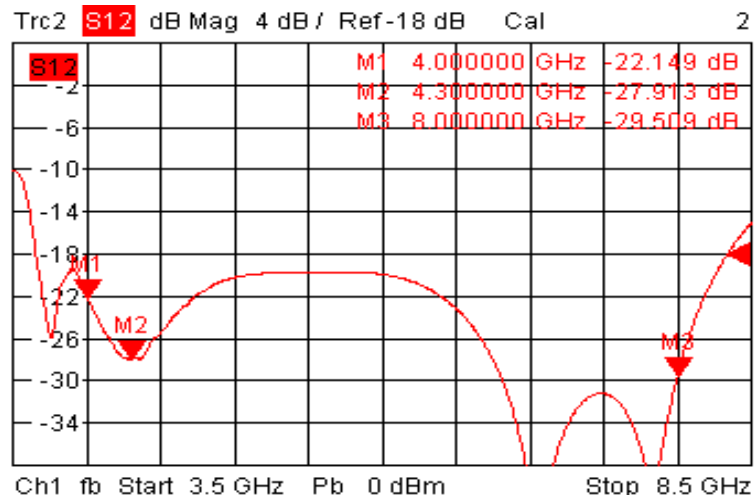


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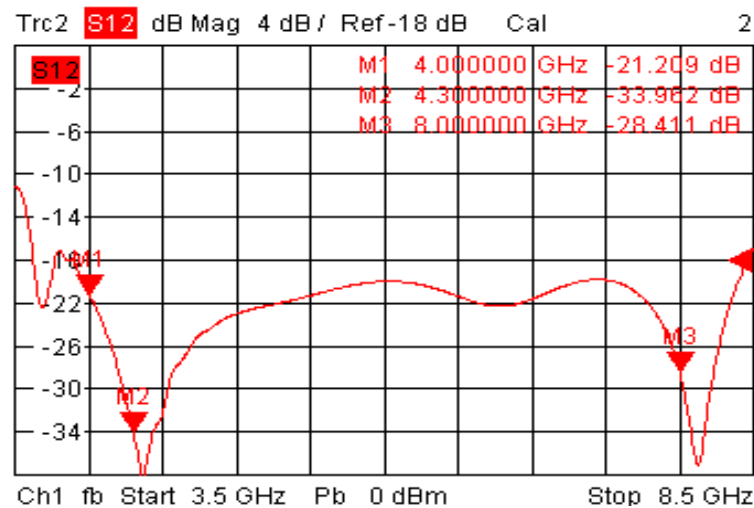
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Isolation (Port 3-Port 2)



Isolation (Port 1-Port 3)

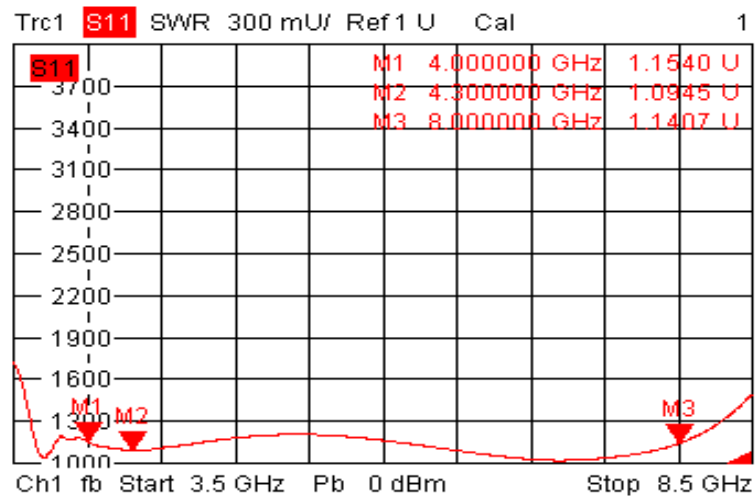


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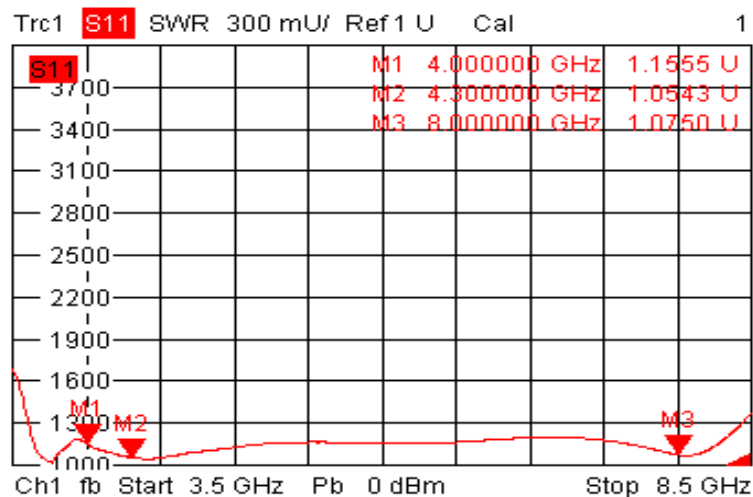
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VSWR 1



VSWR 2

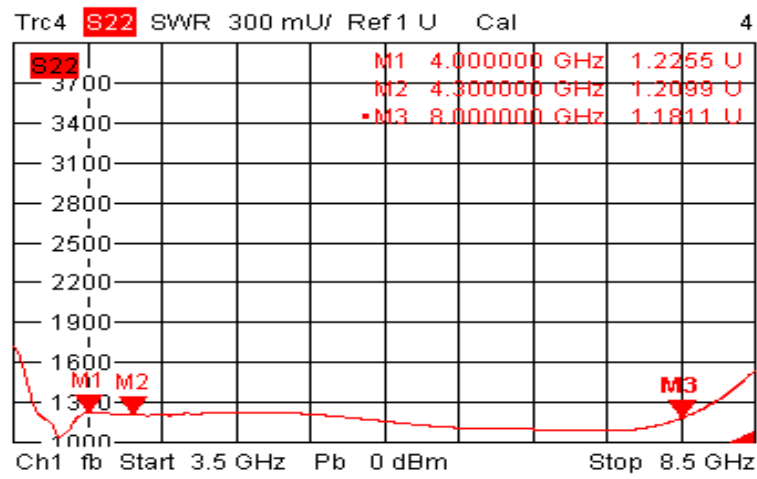


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VSWR3



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Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Circulator with 18 dB Isolation from 4 to 8 GHz, 80 Watts and N Female PE83CR1042](https://www.pasternack.com/circulator-18db-isolation-8-ghz-80-watts-n-female-pe83cr1042-p.aspx)

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PE83CR1042 CAD Drawing

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