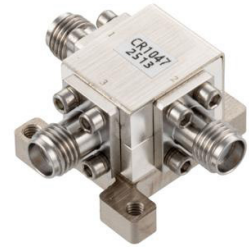


Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female



## PE83CR1047

### Features

- Forward Power 10 watts
- Wide-Band Operating Frequency Range of 17 to 22 GHz
- SMA Female Connectors
- Low VSWR of 1.4:1 Max
- Low Insertion Loss of 1.5 dB
- Good Isolation Performance of 15 dB Minimum

### Applications

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

### Description

The PE83CR1047 is a high power circulator offering a forward power rating of 10 Watts over an operational frequency band of 17 to 22 GHz. This coaxial part uses three SMA female connectors on the three ports and has a minimum of 15 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   | 17  |       | 22    | GHz   |
| Impedance         |     | 50    |       | Ohms  |
| Insertion Loss    |     | 0.8   | 1.5   | dB    |
| Isolation         | 15  | 17    |       | dB    |
| VSWR              |     | 1.3:1 | 1.4:1 |       |
| Forward Power, CW |     |       | 10    | 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

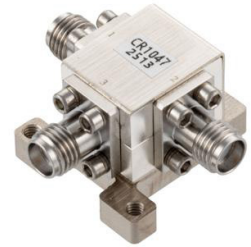
#### Size

|                           |                        |
|---------------------------|------------------------|
| Length                    | 0.98 in [24.89 mm]     |
| Width                     | 0.91 in [23.11 mm]     |
| Height                    | 0.5 in [12.7 mm]       |
| Weight                    | 0.07 lbs [31.75 g]     |
| Body Material and Plating | Aluminum Alloy, Nickel |

#### Configuration

|           |                 |
|-----------|-----------------|
| Design    | Single Junction |
| Direction | Clockwise       |

Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female



## PE83CR1047

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|               |               |
|---------------|---------------|
| Package Style | Connectorized |
| Connector 1   | SMA Female    |
| Connector 2   | SMA Female    |
| Connector 3   | SMA Female    |

### Environmental Specifications

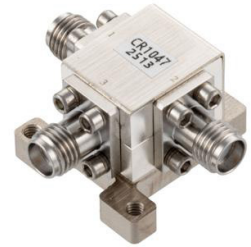
|                    |                                                       |
|--------------------|-------------------------------------------------------|
| <b>Temperature</b> |                                                       |
| Operating Range    | -20 to +70 deg C                                      |
| 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:

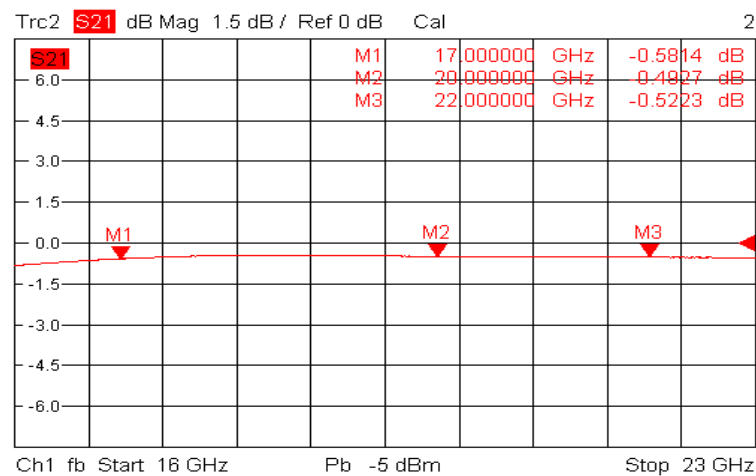
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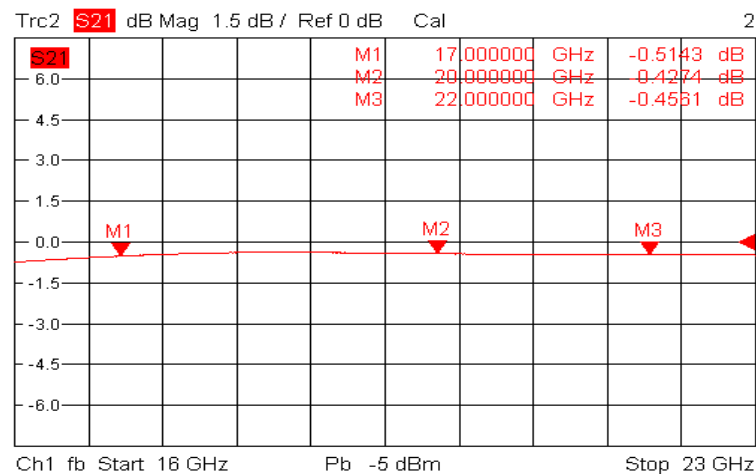
## PE83CR1047

### Typical Performance Data

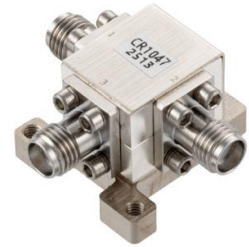
#### Insertion Loss (Port 1-Port 2)



#### Insertion Loss (Port 2-Port 3)

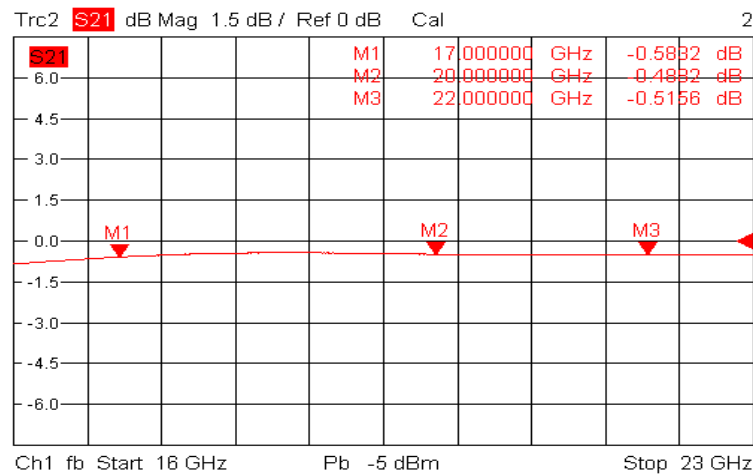


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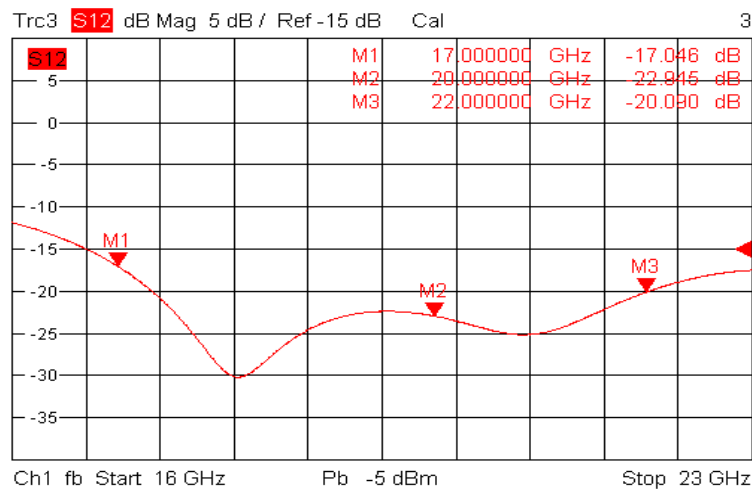


## PE83CR1047

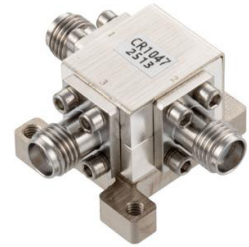
### Insertion Loss (Port 3-Port 1)



### Isolation (Port 2-Port 1)

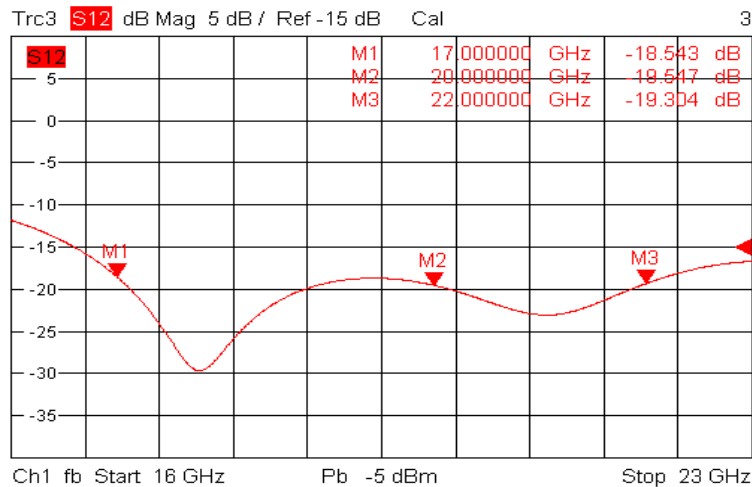


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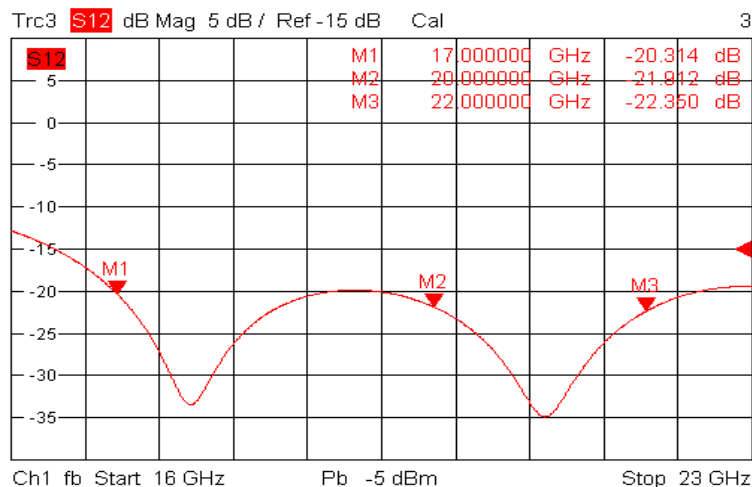


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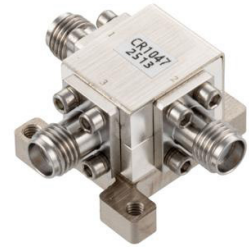
### Isolation (Port 3-Port 2)



### Isolation (Port 1-Port 3)

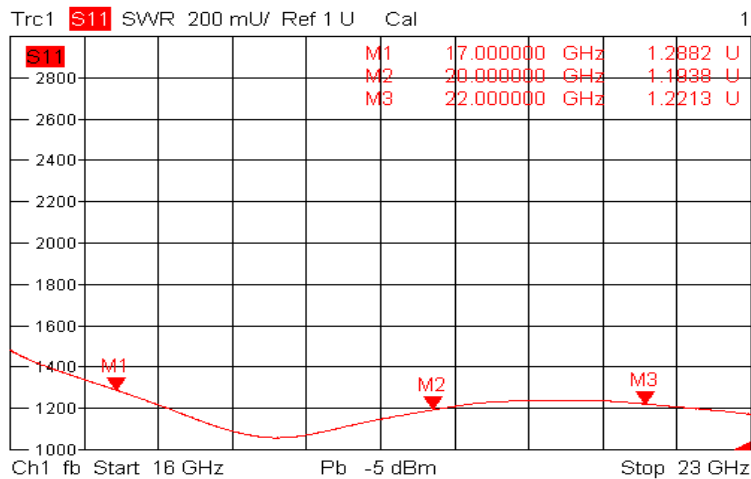


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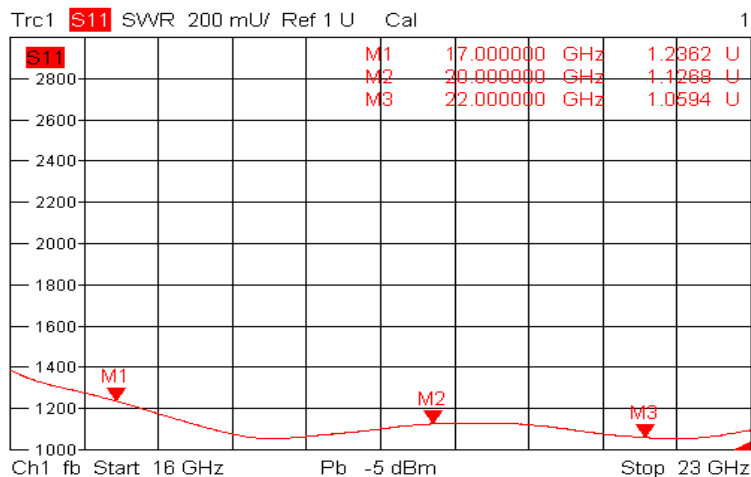


## PE83CR1047

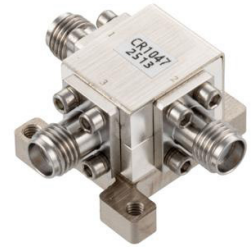
### VSWR 1



### VSWR 2

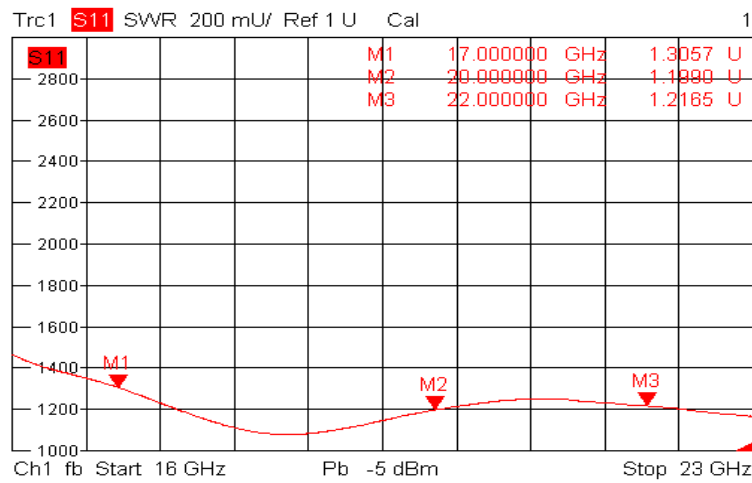


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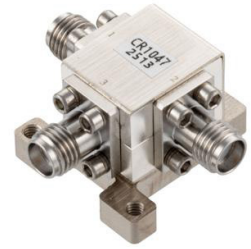


## PE83CR1047

### VSWR 3



Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female



## PE83CR1047

Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female PE83CR1047](https://www.pasternack.com/circulator-15db-isolation-22-ghz-10-watts-sma-female-pe83cr1047-p.aspx)

URL: <https://www.pasternack.com/circulator-15db-isolation-22-ghz-10-watts-sma-female-pe83cr1047-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. Pasternack Enterprises reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack Enterprises does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack Enterprises does not assume liability arising out of the use of any part or document.



Circulator with 15 dB Isolation from 17 to 22 GHz, 10 Watts and SMA Female

