



High Power Circulator with 18 dB Isolation from
2 GHz to 4 GHz, 100 Watts and N Female

Circulators Technical Data Sheet

PE83CR1031

Features

- Forward/Reverse Power 100 watts
- Wide-Band Operating Frequency Range of 2 to 4 GHz
- Female Type-N Connectors
- Low VSWR of 1.35:1 Max
- Low Insertion Loss of 0.6 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 PE83CR1031 is an RF circulator offering a forward and reverse power rating of 100 watts over an operational frequency band of 2 to 4 GHz. This coaxial part uses Type-N female connectors on all 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 circulator 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 | Minimum | Typical | Maximum | Units |
|-------------------|---------|---------|---------|-------|
| Frequency Range | 2 | | 4 | GHz |
| Impedance | | 50 | | Ohms |
| Insertion Loss | | | 0.6 | dB |
| Isolation | 18 | | | dB |
| VSWR | | | 1.35:1 | |
| Forward Power, CW | | | 100 | Watts |

Mechanical Specifications

| | |
|---------------------------|--------------------|
| Size | |
| Length | 1.2 in [30.48 mm] |
| Width | 1.2 in [30.48 mm] |
| Height | 0.67 in [17.02 mm] |
| Weight | 0.22 lbs [99.79 g] |
| Body Material and Plating | Aluminum, Nickel |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and N Female PE83CR1031](#)



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Configuration

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

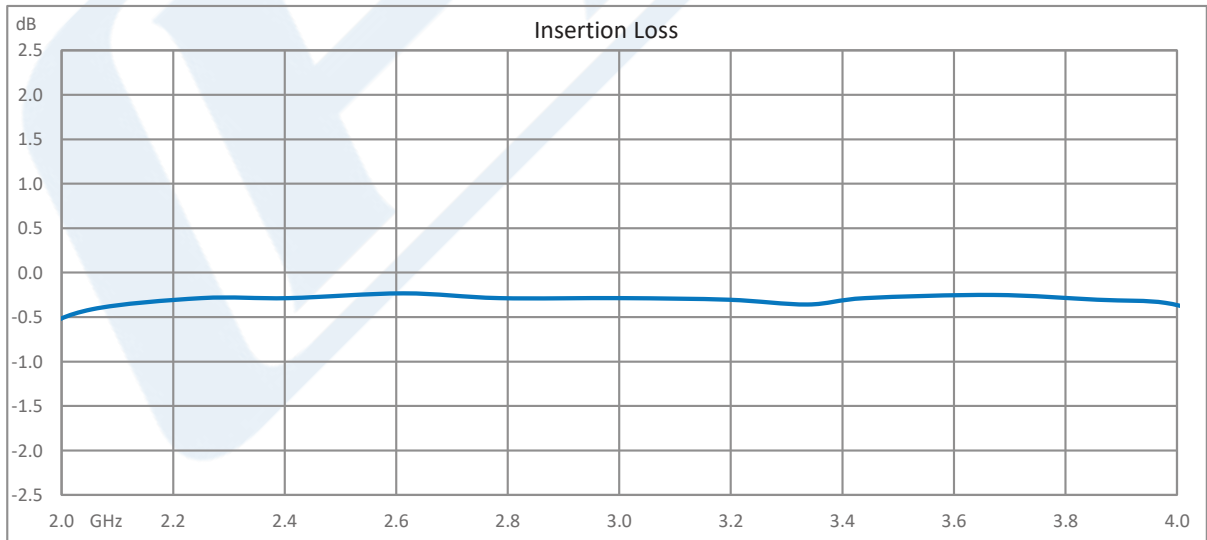
| | |
|-----------|--|
| Humidity | 100% RH at 35c |
| Shock | 20G for 11msec |
| Vibration | 25g RMS |
| Altitude | 30,000 ft. (Epoxy Sealed Controlled environment) |

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

Plotted and Other Data

- Notes:
- Values at 25°C, sea level.

Typical Performance Data



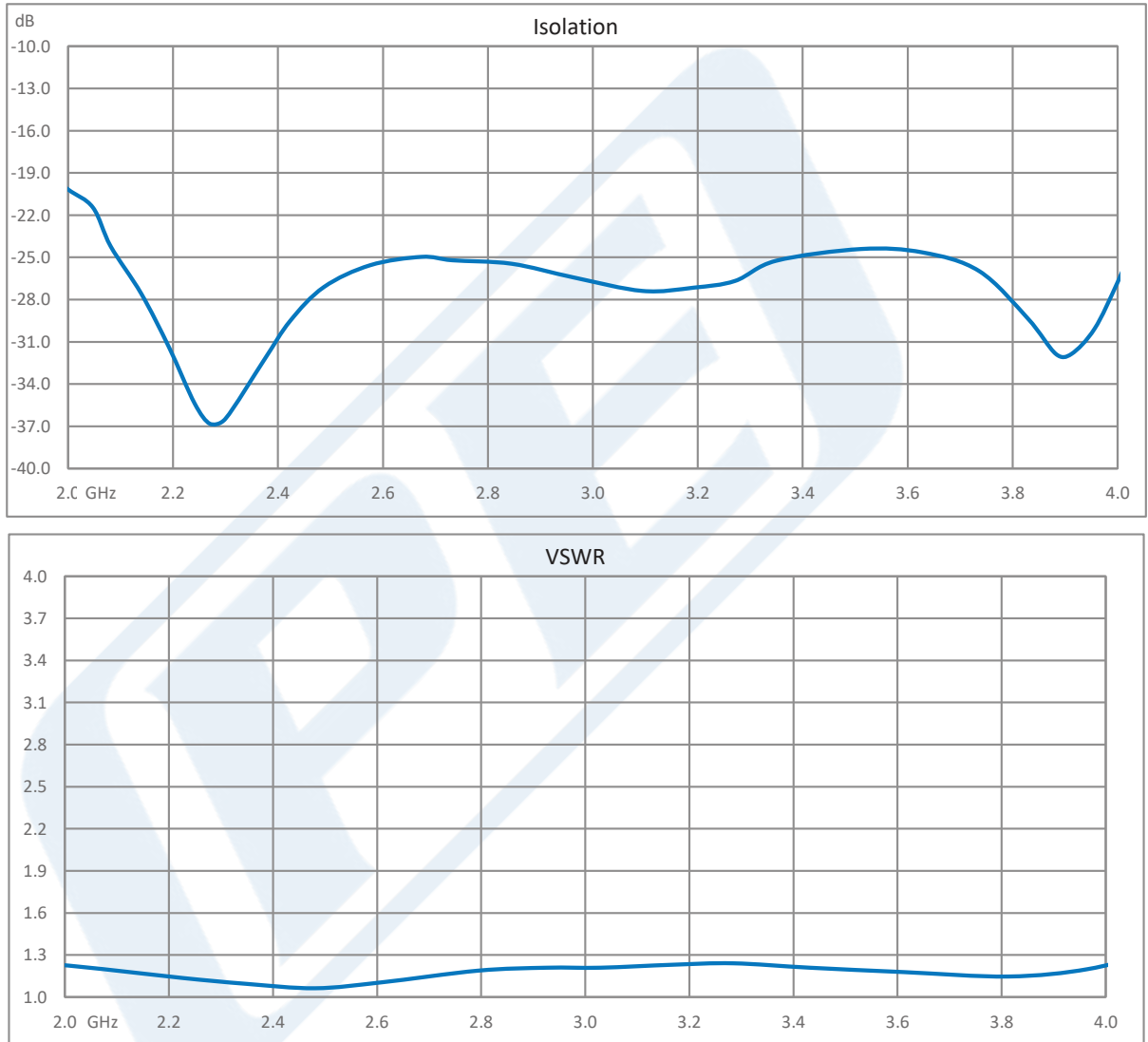
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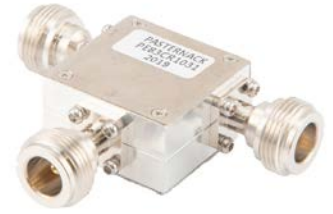
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High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and N Female from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability 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: [High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and N Female PE83CR1031](https://www.pasternack.com/high-power-circulator-18db-isolation-4-ghz-100-watts-n-female-pe83cr1031-p.aspx)

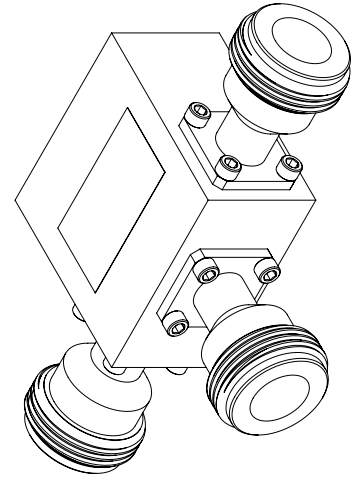
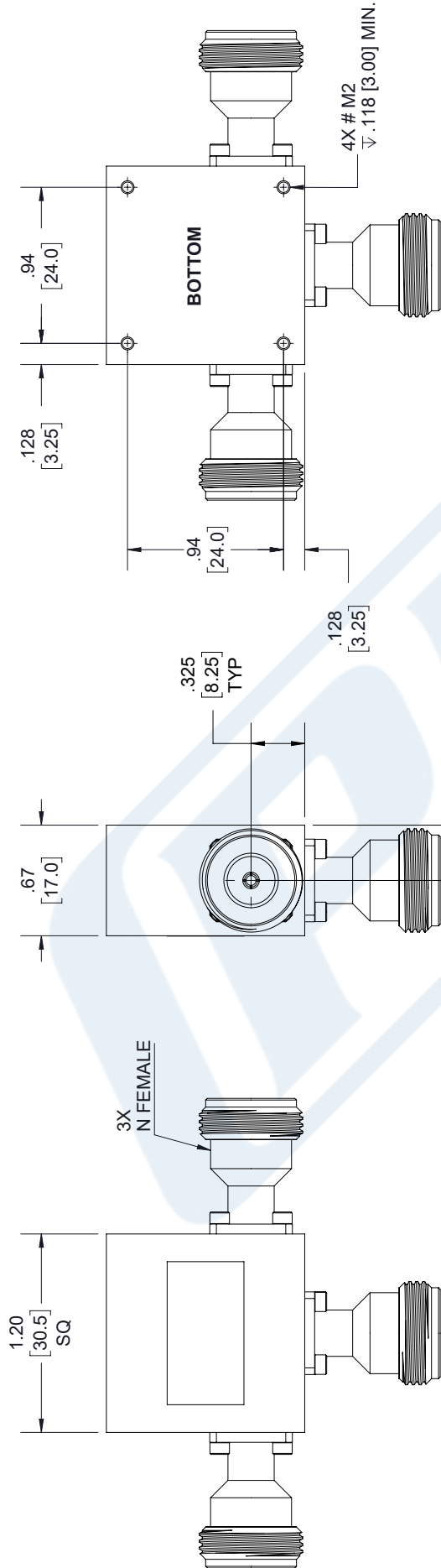
URL: <https://www.pasternack.com/high-power-circulator-18db-isolation-4-ghz-100-watts-n-female-pe83cr1031-p.aspx>

The information contained in 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 reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

PE83CR1031 CAD Drawing

High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and N Female

| REV. | DESCRIPTION | DATE | APPROVED |
|------|-----------------|-----------|----------|
| A | INITIAL RELEASE | 3/12/2020 | S.PONG |



LABEL

| | | |
|---|--------------------------------------|---|
| 1 | PASTERNAK PE83CR1031 D/C: WWVY | 2 |
| | | 3 |

UNLESS OTHERWISE SPECIFIED
LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS ± 1/32

.XX = ±.02 [.51] ANGLES ± 1°

.XXX = ±.005 [.13] CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0

12 [305] < L ≤ 60 [1524] = +2 [51] / -0

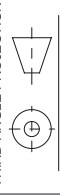
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0

120 [3048] < L ≤ 300 [7620] = +6 [152] / -0

300 [7620] < L = +5% / -0

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

SCALE N/A

REV A



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ITEM NO PE83CR1031

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