



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

## Circulators Technical Data Sheet

PE83CR1030

### Features

- Forward/Reverse Power 100 watts
- Wide-Band Operating Frequency Range of 2 to 4 GHz
- Female SMA Connectors
- Low VSWR of 1.35:1 Max
- Low Insertion Loss of 0.65 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 PE83CR1030 is an RF circulator offering a forward and reverse power rating of 10 watts over an operational frequency band of 2 to 4 GHz. This coaxial part uses SMA 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			0.65	dB
Isolation	18			dB
VSWR			1.35:1	
Forward Power, CW			100	Watts

### Mechanical Specifications

<b>Size</b>	
Length	1.2 in [30.48 mm]
Width	1.2 in [30.48 mm]
Height	0.67 in [17.02 mm]
Weight	0.17 lbs [77.11 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 SMA Female PE83CR1030](#)



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### Configuration

Design	Single Junction
Direction	Clockwise
Connector 1	SMA Female
Connector 2	SMA Female
Connector 3	SMA 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)

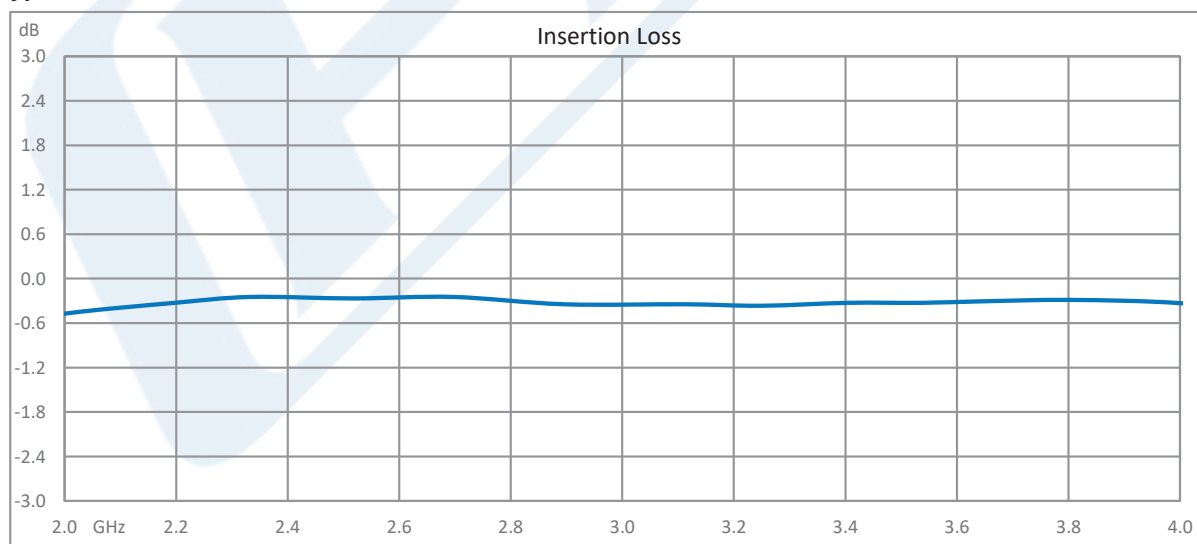
**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

- Values at 25°C, sea level.

### Typical Performance Data



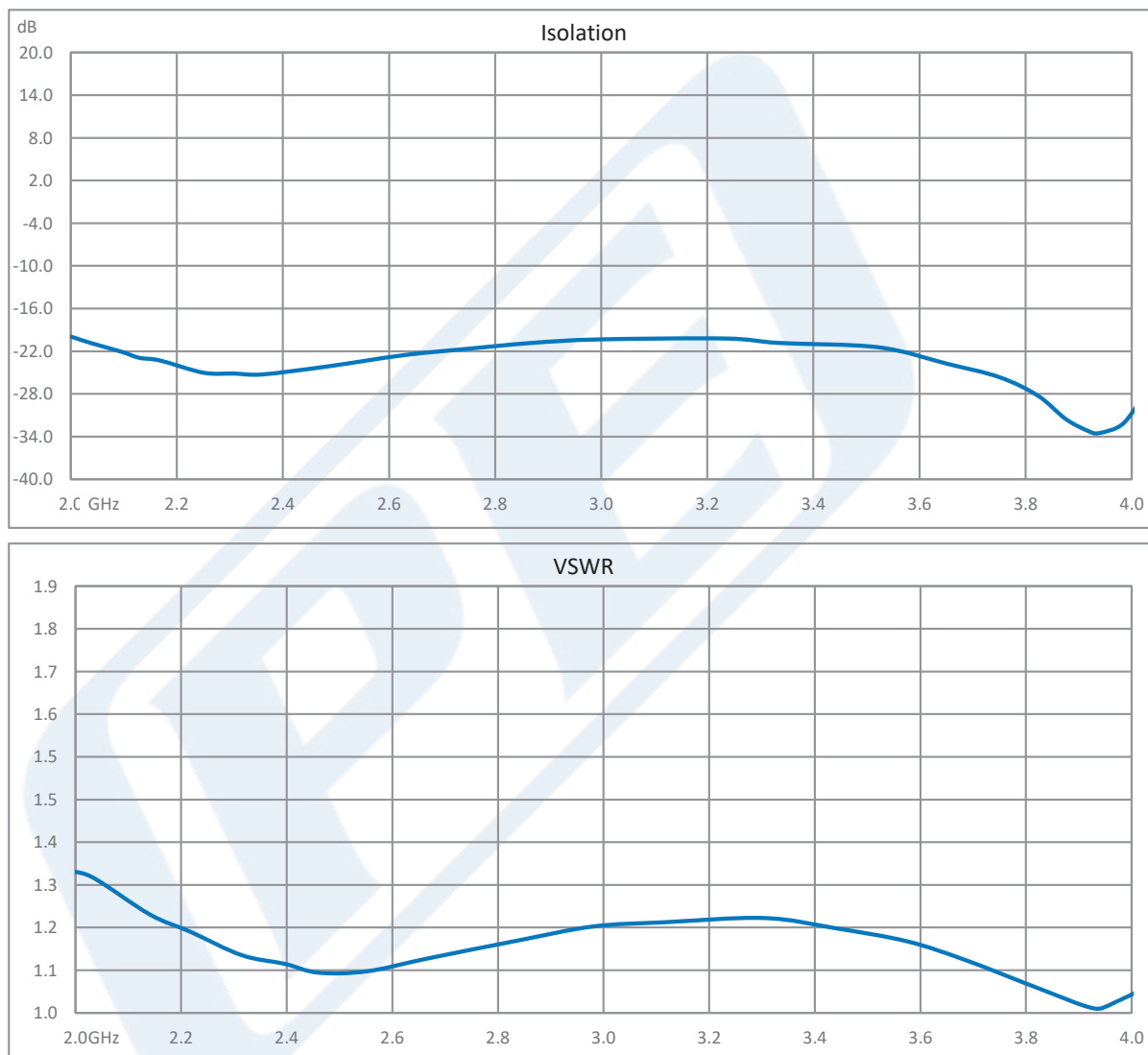
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High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and SMA Female from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability 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: [High Power Circulator with 18 dB Isolation from 2 GHz to 4 GHz, 100 Watts and SMA Female PE83CR1030](https://www.pasternack.com/high-power-circulator-18db-isolation-4-ghz-100-watts-sma-female-pe83cr1030-p.aspx)

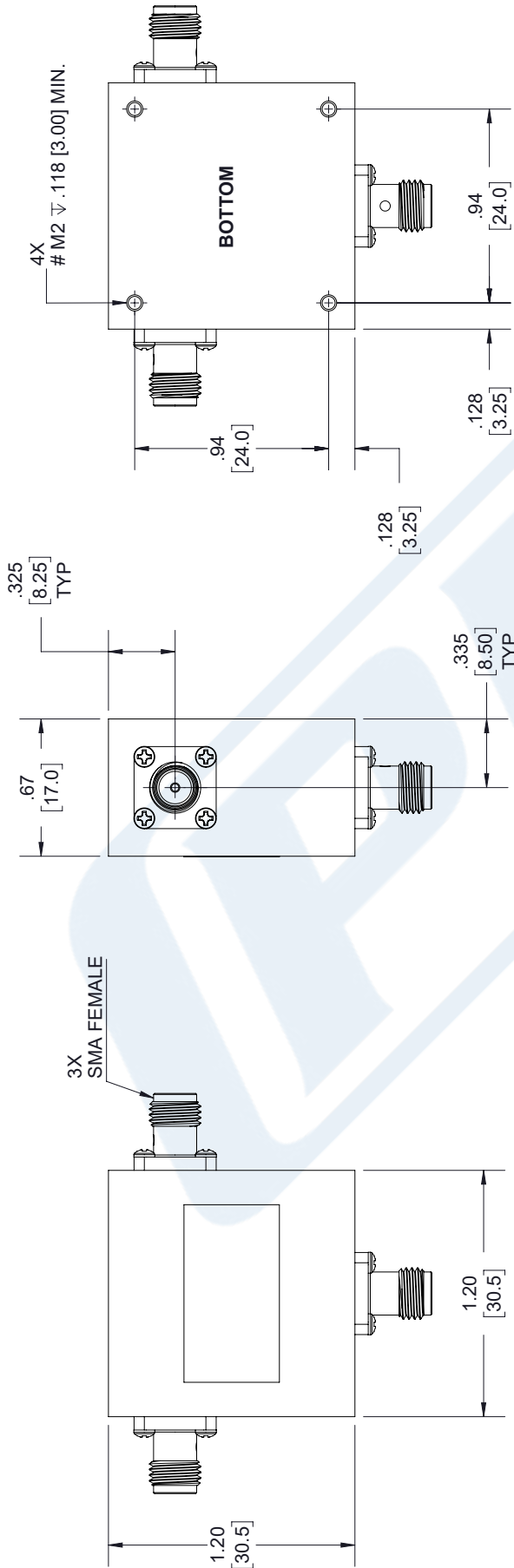
URL: <https://www.pasternack.com/high-power-circulator-18db-isolation-4-ghz-100-watts-sma-female-pe83cr1030-p.aspx>

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.

# PE83CR1030 CAD Drawing

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



THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

SCALE N/A

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

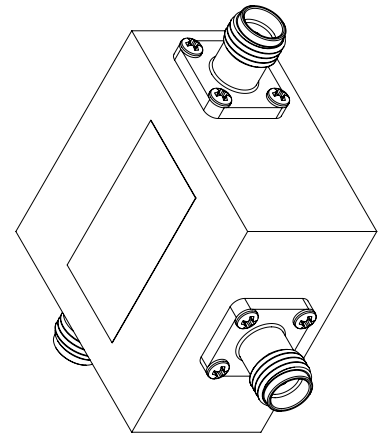
TOLERANCES:

.X = ± .2	[5.08]	FRACTIONS
.XX = ± .02	[.51]	± 1/32
.XXX = ± .005	[.13]	ANGLES ± 1°

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.



**LABEL**

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