



Double Balanced Mixer Operating from 5 MHz to 1.5 GHz with an IF Range from DC to 1 GHz and LO Power of +7 dBm, SMA

Mixers Technical Data Sheet

PE86X1018

Features

- Broadband Double Balanced Mixer Design
- LO & RF Frequency Range: 5 MHz to 1500 MHz
- IF Frequency Range: DC to 1000 MHz
- LO Drive Level Range: +3 dBm to +10 dBm
- Schottky Ring Quad Diodes with Optimized Balun Structures
- Conversion Loss: 7.5 dB typ
- High Port Isolations up to 50 dB typ
- Input IP3 Level: +15 dBm
- RF Input Up to +1 dBm
- SMA Connectors
- Operating Temperature Range: -40°C to +85°C
- Designed to Meet MIL-STD-202 Environmental Test Conditions

Applications

- Electronic Warfare
- Point-to-Point Radios
- Point-to-Multipoint Radios
- VSAT
- Radar
- Space Systems
- Test Instrumentation
- Sensors
- Telecom Infrastructure
- Military End-Use

Description

The PE86X1018 is a broadband Double Balanced Mixer that operates across an RF and LO frequency range from 5 MHz to 1500 MHz with an IF frequency range of DC to 1000 MHz and supports an LO drive level range from +3 to +10 dBm, with +7 dBm nominal. The design utilizes Schottky Ring Quad Diodes with optimized balun structures. Exceptional typical performance includes Conversion Loss of 7.5 dB, RF to LO and LO to IF isolation levels up to 50 dB, and an input IP3 level of +15 dBm. The 50 ohm hybrid module does not require any external components or matching circuitry. The rugged compact package assembly supports female SMA connectors, operates over a temperature range of -40°C to +85°C, and is designed to meet MIL-STD-202 environmental test conditions for Humidity, Shock, Vibration, and Altitude for high reliability.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
RF Frequency Range	0.005		1.5	GHz
LO Frequency Range	0.005		1.5	GHz
IF Frequency Range	DC		1,000	MHz
Impedance		50		Ohms
Conversion Loss		7.5	9.3	dB
LO to RF Isolation	23	40		dB
LO to IF Isolation	10	30		dB
RF Port VSWR		2:1	2.5:1	
IF Port VSWR		1.5:1	2:1	
Input at 3rd Order Intercept Point	+12	+15		dBm
RF Input Power			+1	dBm
LO Input Power		+7		dBm

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Double Balanced Mixer Operating from 5 MHz to 1.5 GHz with an IF Range from DC to 1 GHz and LO Power of +7 dBm, SMA PE86X1018](#)



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Absolute Maximum Rating

Parameter	Rating	Units
RF Power	+17	dBm
Peak IF Current	40	mA
Operating Temperature	-40 to +85	°C
Storage Temperature	-55 to +100	°C



ESD Sensitive Material,
Transport material in
Approved ESD bags.
Handle only in approved
ESD Workstation.

Mechanical Specifications

Configuration

Design
Package Type
RF Connector
LO Connector
IF Connector

Double Balanced
Connectorized
SMA Female
SMA Female
SMA Female

Environmental Specifications

Temperature

Operating Range
Storage Range

-40 to +85 deg C
-55 to +100 deg C

Humidity
Shock
Vibration
Altitude

MIL-STD-202F, Method 103B, Condition B
MIL-STD-202F, Method 213B, Condition B
MIL-STD-202F, Method 204D, Condition B
MIL-STD-202F, Method 105C, Condition B

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

Plotted and Other Data

Notes:

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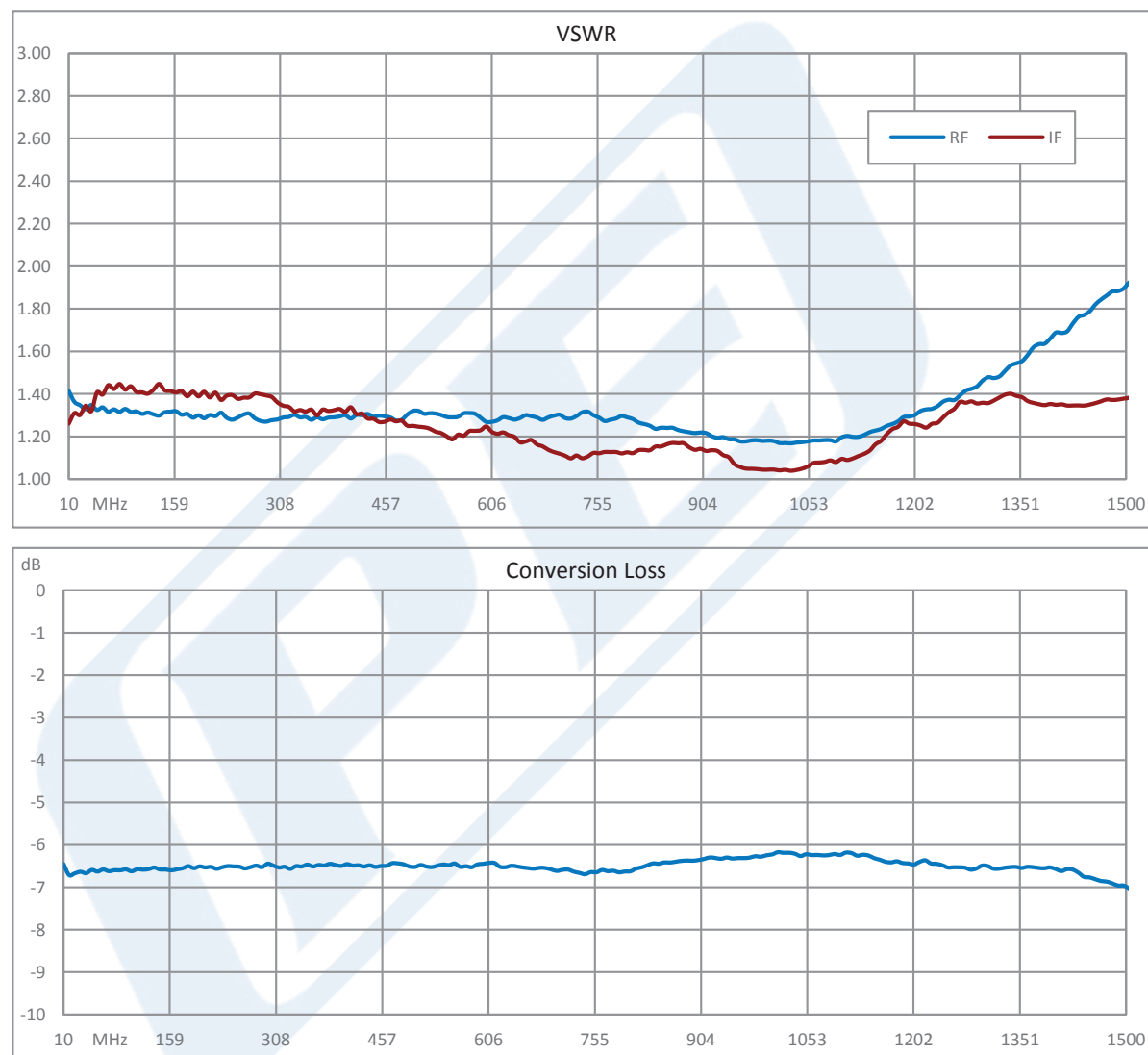


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Typical Performance Data



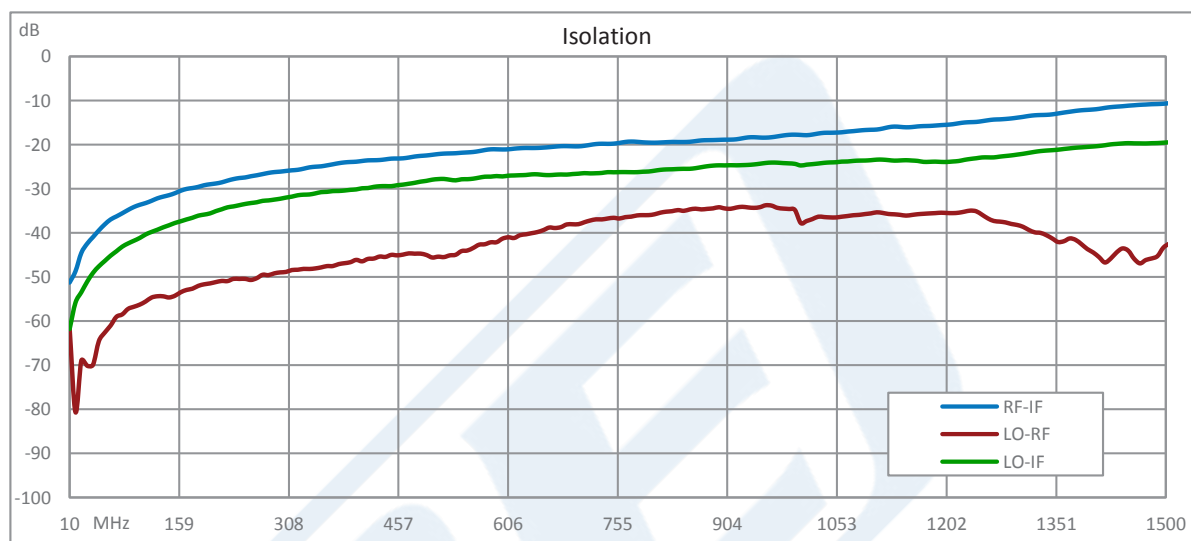
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Double Balanced Mixer Operating from 5 MHz to 1.5 GHz with an IF Range from DC to 1 GHz and LO Power of +7 dBm, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

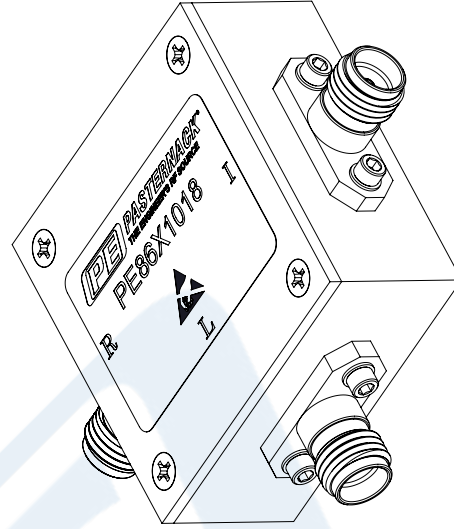
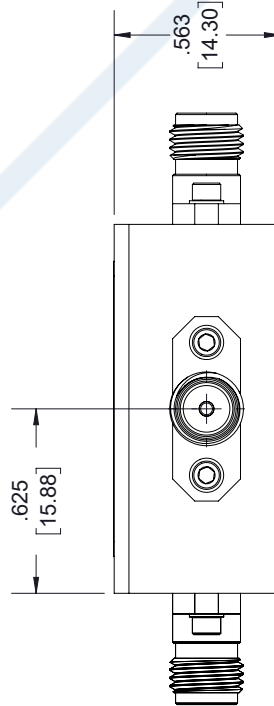
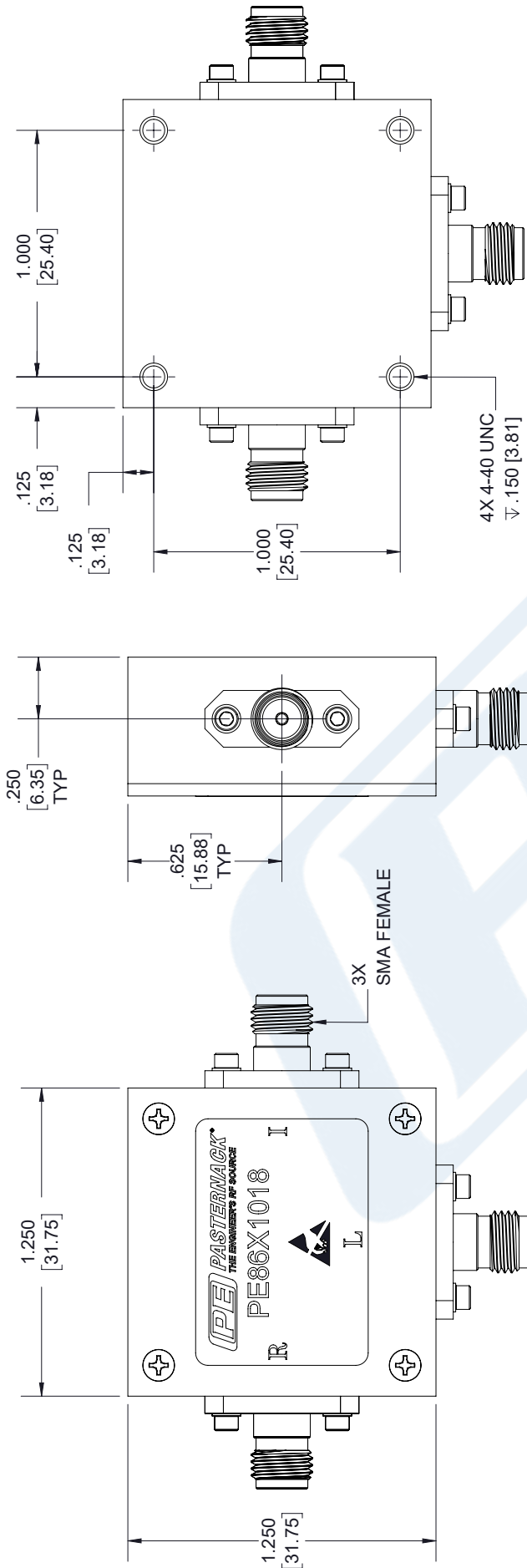
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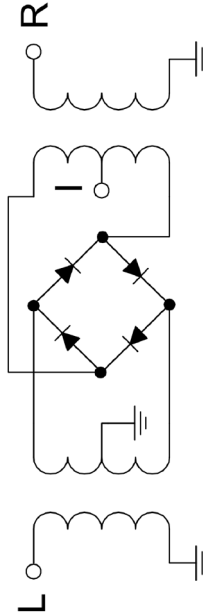
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PE86X1018 CAD Drawing

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SCHEMATIC



STANDARD TOLERANCES
.X ±0.2
.XX ±0.01
.XXX ±0.005

*STANDARD TOLERANCES APPLY
ONLY TO DIMENSIONS IN INCHES



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DWG TITLE

PE86X1018

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

CAGE CODE 53919

CAD FILE 04/26/18

SCALE N/A

SIZE A

7361