










EWM8601ZZ

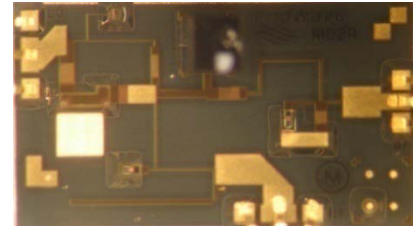
November 2009 – Rev . 2

Production

Features

-  Sub-harmonically Pumped Mixer (2LO)
-  Broadband Performance: 81 - 86 GHz
-  Input P1dB: +8 dBm, typical
-  Conversion Loss: 11 dB, typical
-  LO Drive Level: +17 dBm, typical
-  MLMS™ Technology Provides
Excellent Performance and Repeatability
-  100% RF and DC tested
-  RoHS Compliant
-  Die size: 1.49 x 2.59 x 0.227 mm,
height includes flipped diodes

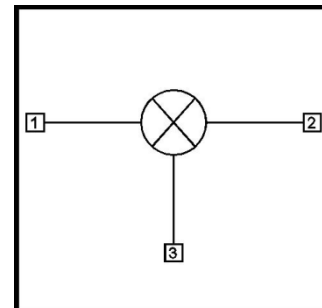
Device Photo



Description

The Endwave *EWM8601ZZ* is a high performance MLMS™ subharmonic mixer which provides conversion loss of 11 dB, RF return loss at better than 13 dB, and excellent performance repeatability. This device can be used for a wide range of Eband applications from defense electronics to commercial communication systems. All die are visually inspected to Mil-Std-883 Method 2010.

Block Diagram



Electrical Characteristics (Temperature = +25 °C)

Parameter	Min.	Typ.	Max.	Units
Frequency Range, RF	81		86	GHz
Frequency Range, IF	DC		15	GHz
Frequency Range, LO	25	35	45	GHz
Conversion Loss ^(1,2)		11		dB
Input P1dB		+8		dBm
LO Drive Power		+17		dBm
IF Return Loss		6		dB
LO Return Loss		6		dB
RF Return Loss		13		dB

Note1: Measured as Upconverter

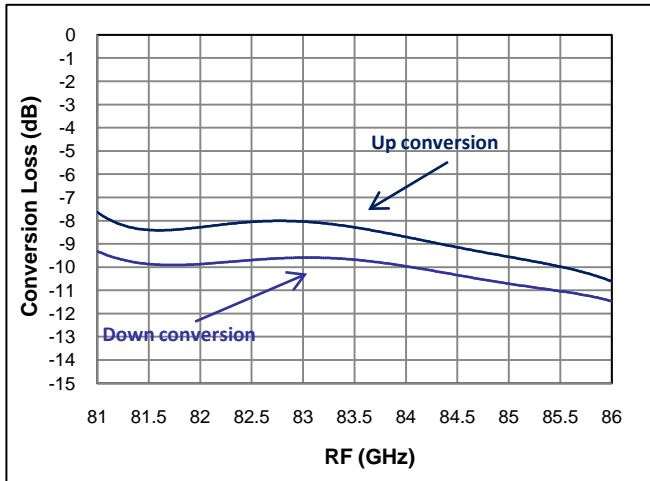
Note2: Measured as Downconverter

EWM8601ZZ

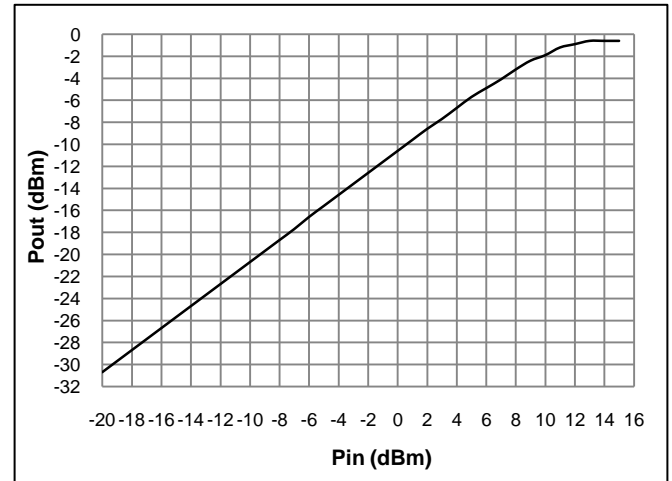
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Production

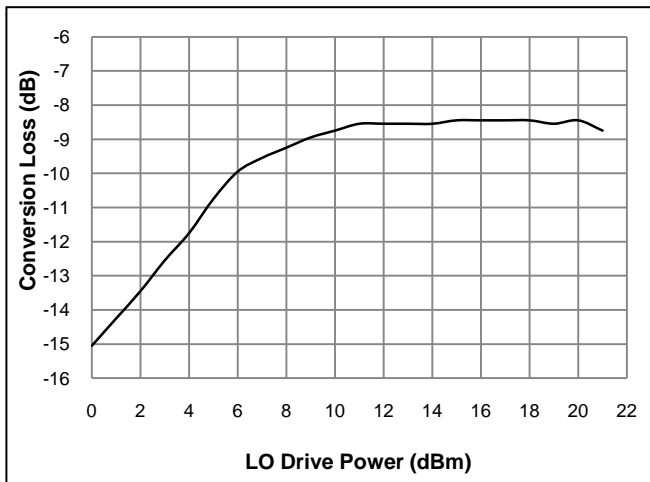
High Band Mixer: Conversion Loss vs. Frequency
LO = 36 GHz and IF = 9 to 14 GHz



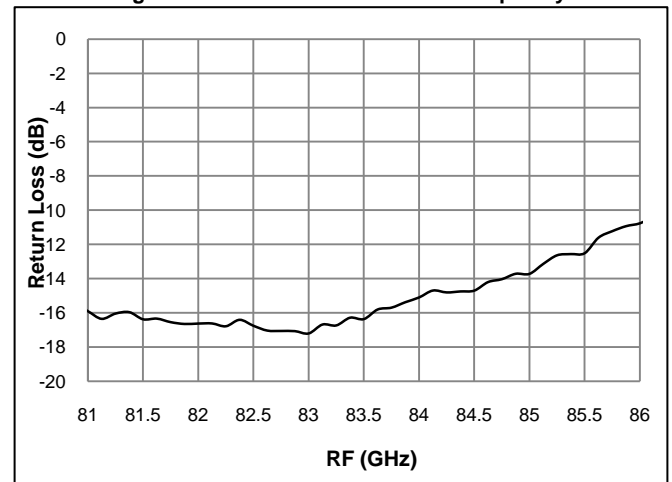
High Band Mixer: Pin vs. Pout
RF = 86 GHz, LO = 36 GHz, and IF = 14 GHz



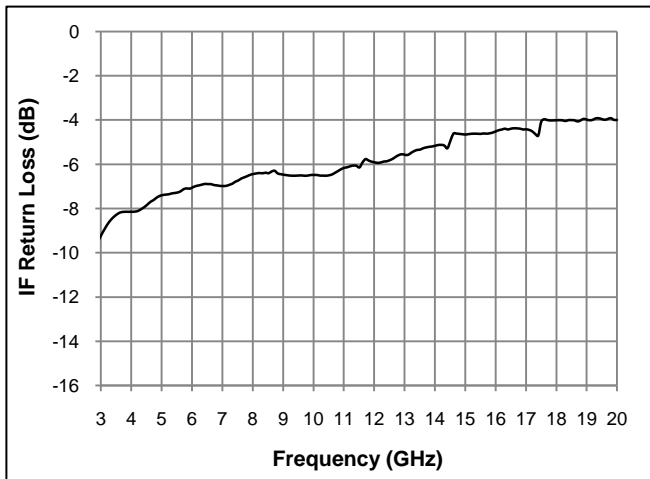
High Band Mixer: Conversion Loss vs. LO Driver Power
RF = 83.6 GHz, LO = 35.2 GHz, and IF = 13.2 GHz



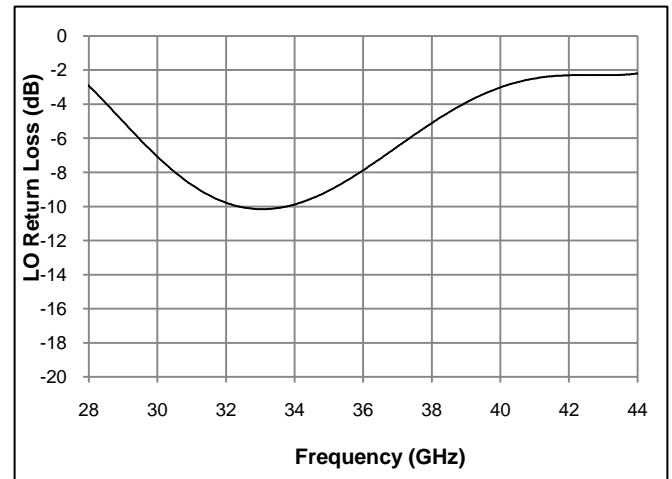
High Band Mixer: Return Loss vs. Frequency



IF Return Loss



LO Return Loss

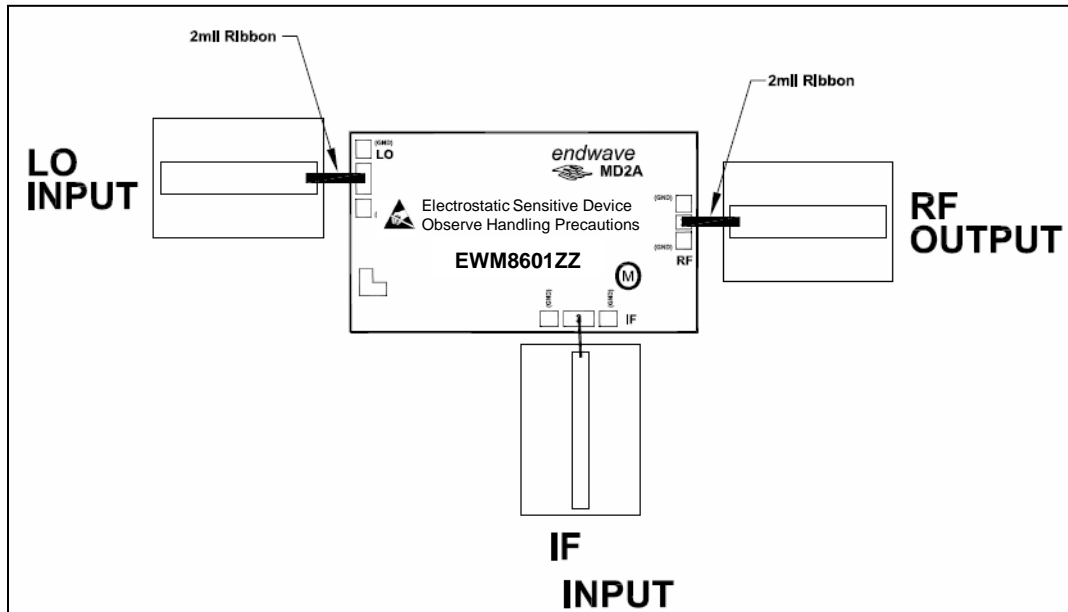


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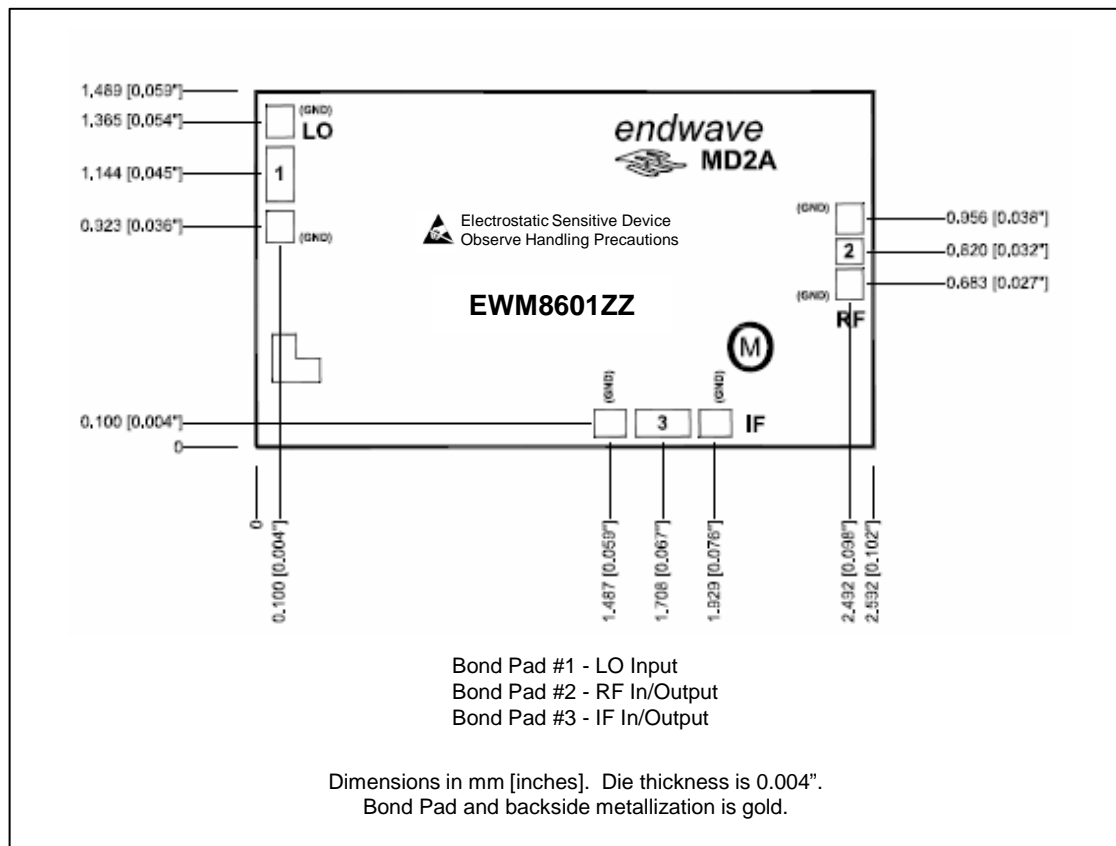
Production

Assembly Drawing



Note: Optimum performance can be achieved by coplanar bonding.

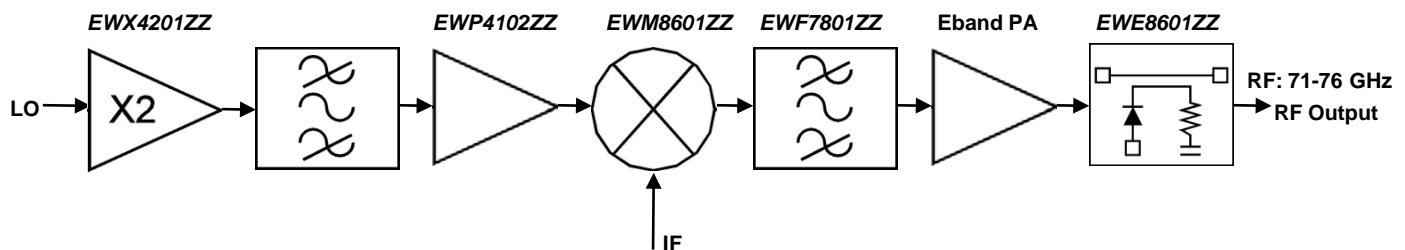
Outline Drawing



Absolute Maximum Ratings

IF Input Power	+ 21 dBm
LO Input Power	+ 21 dBm
RF Input Power	+ 21 dBm
Storage Temperature	-65° to +150°C
Operating Temperature	-40° to +85°C

Typical Upconverter Application



Support Documentation

Support documentation including Assembly Notes, Application Notes and Qualification Procedures can be found on our website at www.endwave.com.

Ordering Information

Part Number	Description
EWM8601ZZ	RoHS compliant bare die in wafer or gel packs