






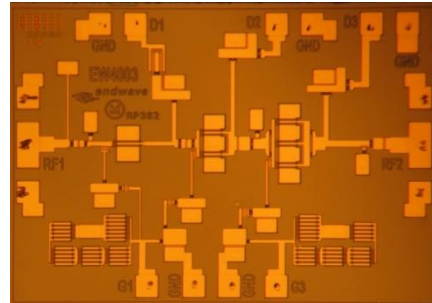


Features

-  Broadband Performance: 31 to 41 GHz
-  Small Signal Gain: 18 dB typical
-  Output IP3: +29 dBm typical
-  Output P1dB: +18 dBm typical
-  ESD Protection Gate Bias Circuitry
-  100% DC and RF tested
-  Die size: 2.0 x 1.5 x 0.1 mm

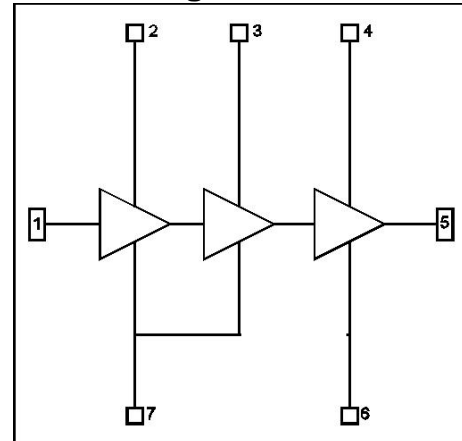
Device Photo



Description

The Endwave *EWP4102ZZ* is a 0.15um GaAs pHEMT broadband medium power amplifier MMIC. The high linearity medium power amplifier with +29 dBm typical output IP3 and +18 dBm output P1dB is optimal as a PA itself or as a driver to higher power applications. The chip has integrated ESD protection gate bias circuitry and may be used for a wide range of applications from defense electronics to commercial communication systems. All parts are 100% DC and RF tested and visually inspected using Mil-Std-883 Method 2010.

Block Diagram



Electrical Characteristics (Temperature = +25 °C)

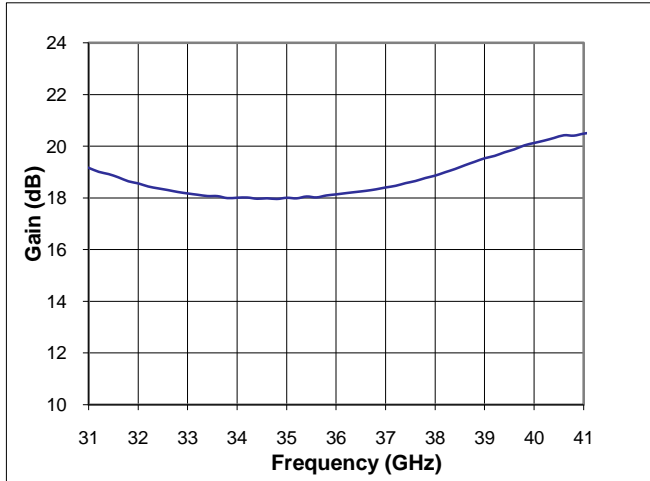
Parameter	Min.	Typ.	Max.	Units
Frequency Range	31		41	GHz
Gain		18		dB
Input Return Loss		10		dB
Output Return Loss		10		dB
Output IP3 (37 to 40 GHz)		29		dBm
Output P1dB (37 to 40 GHz)		18		dBm
Saturated Power Out		21		dBm
Drain Bias Voltages (Vd1, 2, 3)		3.75	5	V
Drain Bias Currents (Id1+Id2+Id3)		125		mA
Gain Bias Voltages (Vg1,3)		-0.6		V

EWP4102ZZ

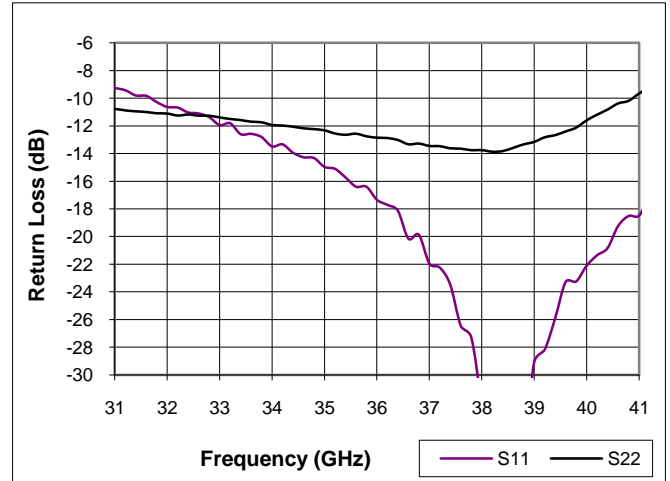
September 2009 – Rev 4

Production

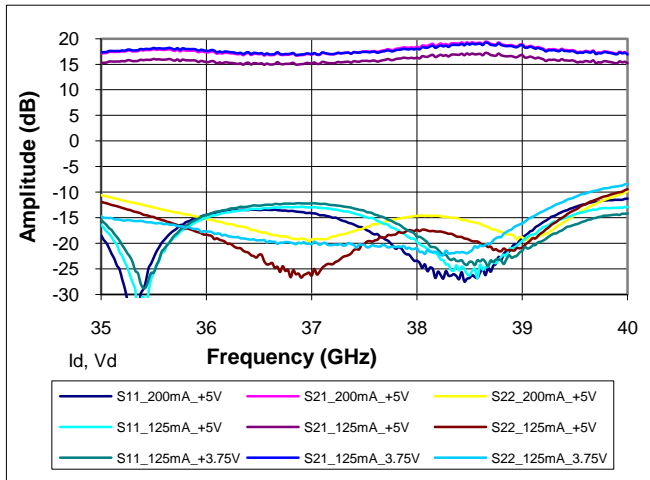
Gain vs. Frequency
Bias Condition: Vd = +5V, Id = 200 mA



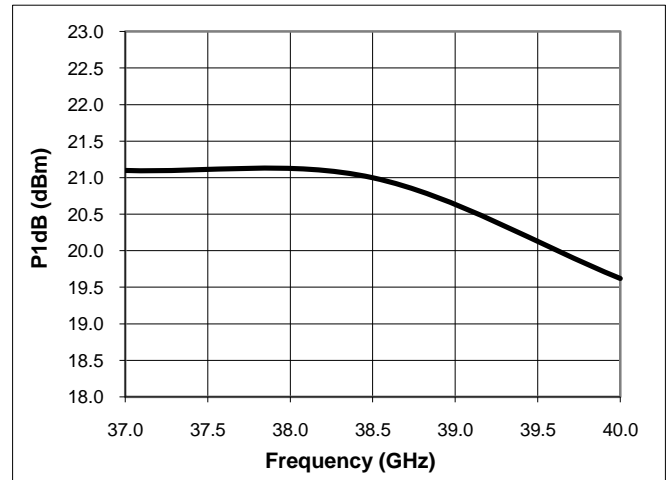
Return Loss vs. Frequency
Bias Condition: Vd = +5V, Id = 200mA



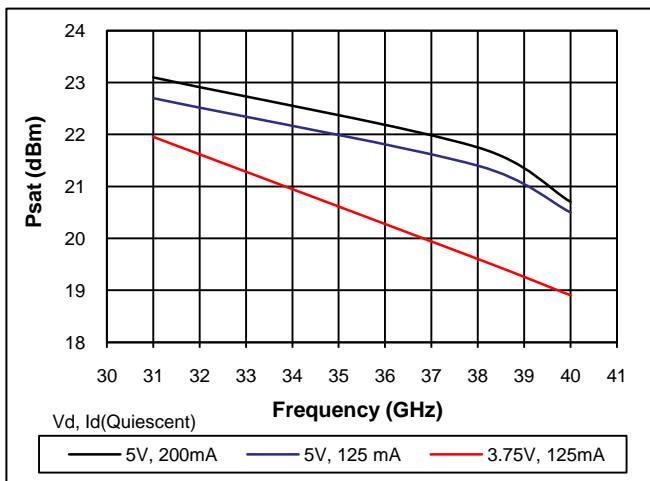
S-parameters vs. Frequency
Bias Condition: Various



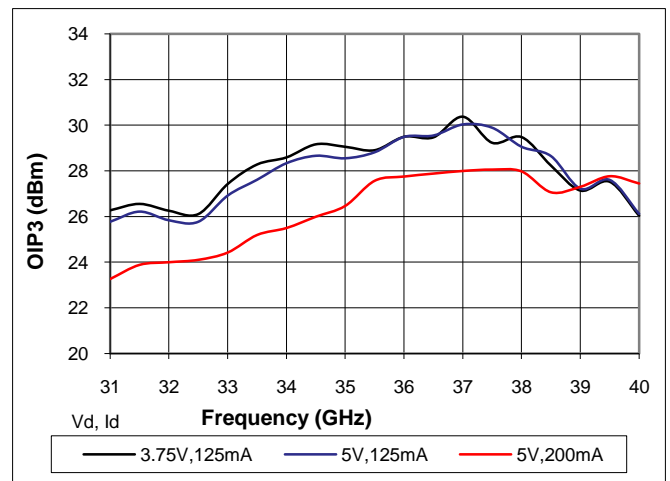
Output P1dB vs. Frequency
Bias Condition: Vd = +5V, Id = 200mA



Psat vs. Frequency
Bias Condition: Various



OIP3 vs. Frequency
Bias Condition: Various

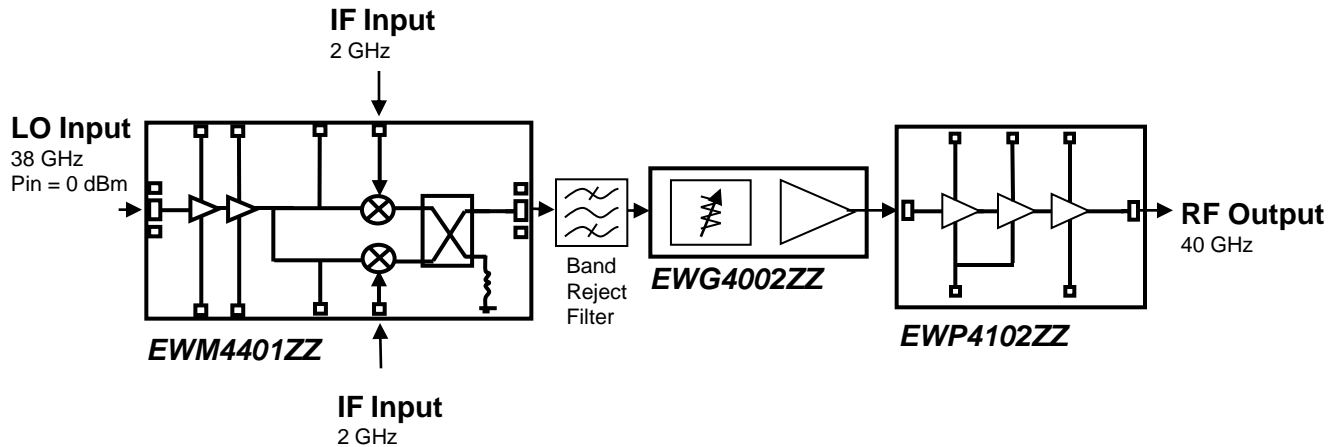


Medium Power Amplifier - Chip

Absolute Maximum Ratings

RF Input Power (max gain)	+10 dBm
Supply Voltage (Vd1, 2, 3)	+5.5 V
Supply Current (Id1+ Id2+ Id3)	250 mA
Supply Voltage (Vg1)	-5 to 0V
Storage Temperature	-65 to +150 C
Operating Temperature	-40 to +85 C
Channel Temperature	175 C

Typical 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
EWP4102ZZ	RoHs Compliant bare die in wafer or gel packs