







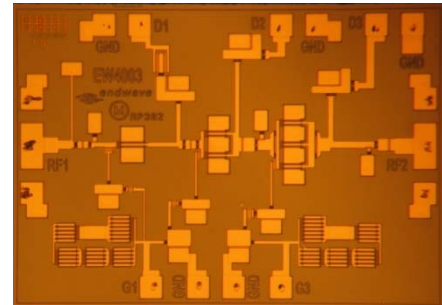


Features

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

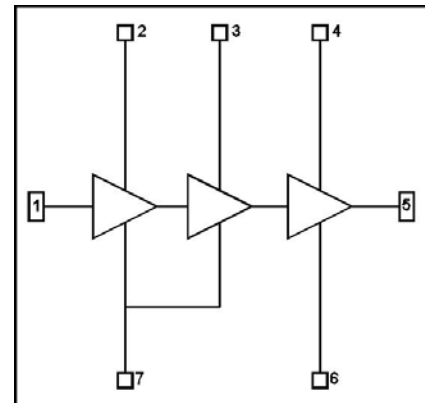
Device Photo



Description

The Endwave *EWP4102ZZ* is a 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 device has integrated ESD protection bias circuitry and can be used for a wide range of applications from defense electronics to commercial communication systems. All die are 100% DC and RF tested and visually inspected to Mil-Std-883 Method 2010.

Block Diagram

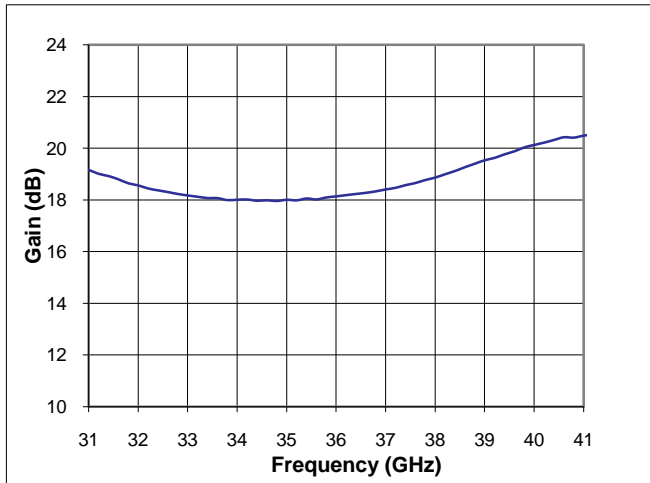


Electrical Characteristics (Temperature = +25 °C)

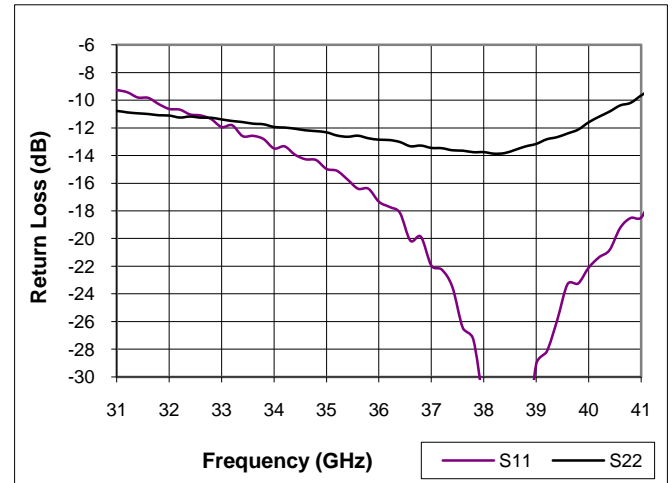
Parameter	Min.	Typ.	Max.	Units
Frequency Range	31		41	GHz
Gain		18		dB
Input Return Loss		10		dB
Output Return Loss		10		dB
Output IP3 (37 to 40 GHz)		29		dBm
Output P1dB (37 to 40 GHz)		18		dBm
Saturated Power Out		21		dBm
Drain Bias Voltages (Vd1, 2, 3)		3.75	5	V
Drain Bias Currents (Id1+Id2+Id3)	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

EWP4102ZZ

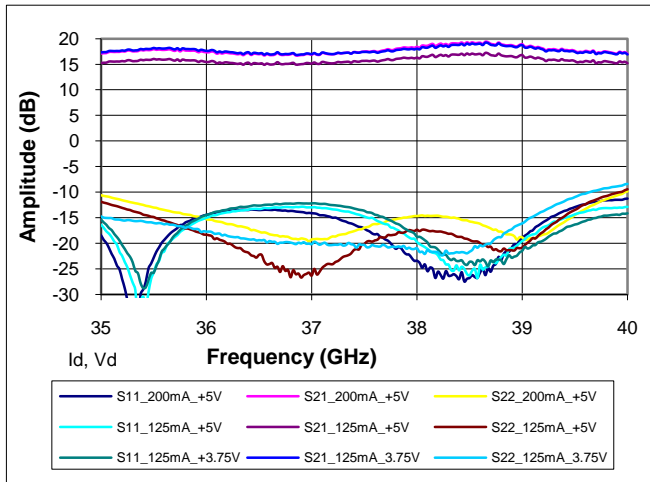
Gain vs. Frequency
Bias Condition: Vd = +5V, Id = 200 mA



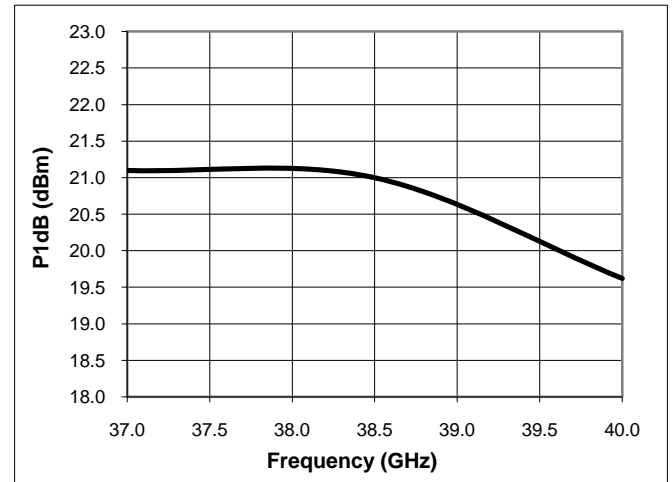
Return Loss vs. Frequency
Bias Condition: Vd = +5V, Id = 200mA



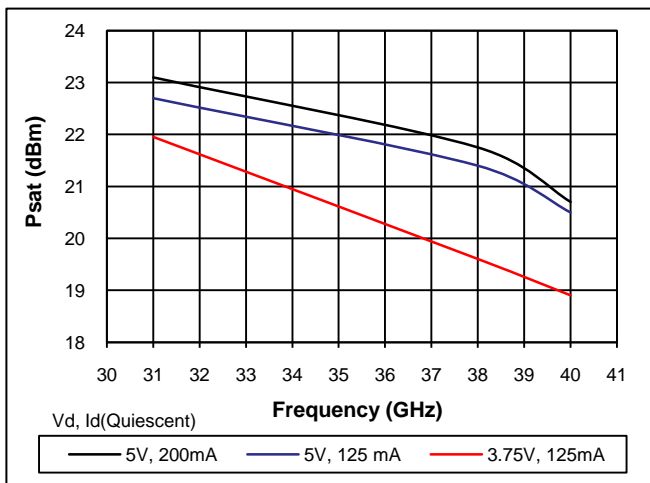
S-parameters vs. Frequency
Bias Condition: Various



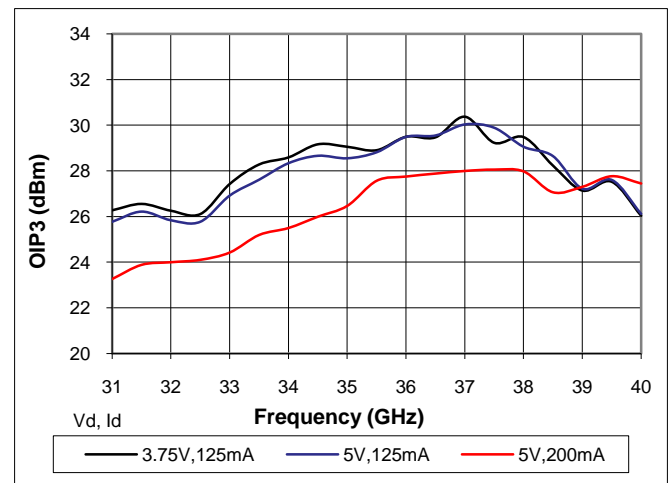
Output P1dB vs. Frequency
Bias Condition: Vd = +5V, Id = 200mA



Psat vs. Frequency
Bias Condition: Various

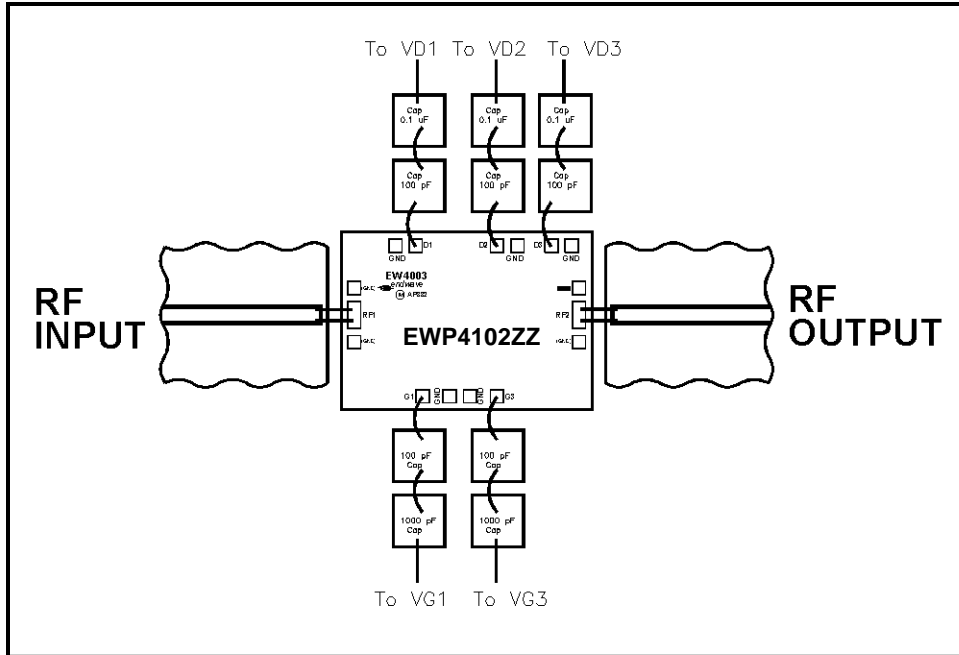


OIP3 vs. Frequency
Bias Condition: Various

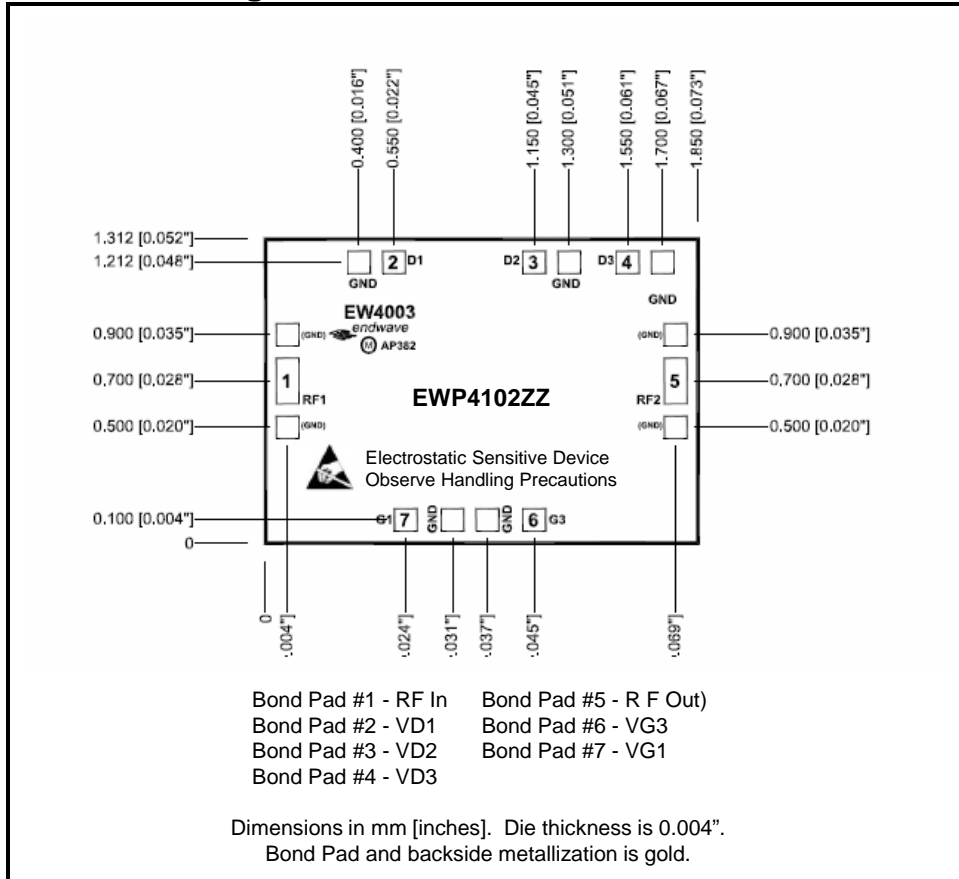


Medium Power Amplifier – Bare Die

Assembly Drawing



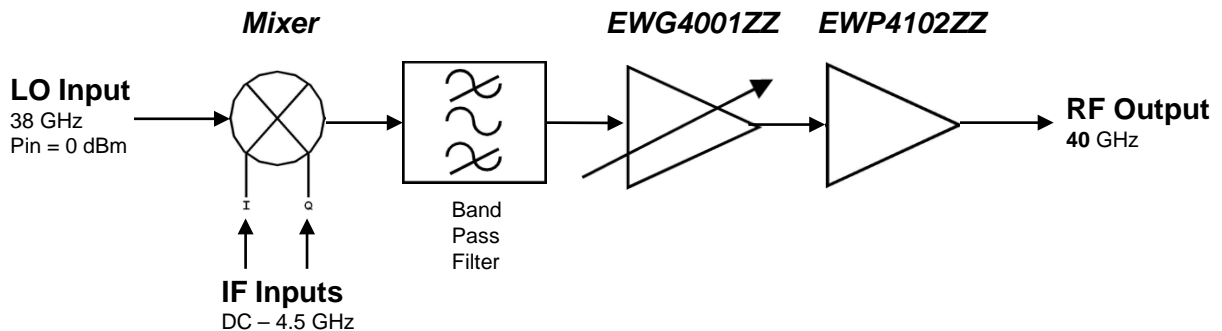
Outline Drawing



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
EWP4102ZZ-EV	EWP4102ZZ in a connectorized test fixture