








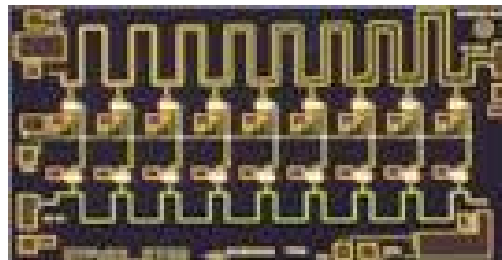


EWH2001ZZ

Features

-  Broadband Performance: 0 to 20 GHz
-  P1dB output power : +25 dBm, typical
-  Gain: +18 dB, typical
-  Output IP3: +33 dBm, typical
-  Supply Voltage : +8V @ 270 mA
-  Input / Output Impedance: 50 ohms
-  100% DC and RF tested
-  Die size: 3.12 x 1.63 x 0.1 mm
-  RoHS Compliant

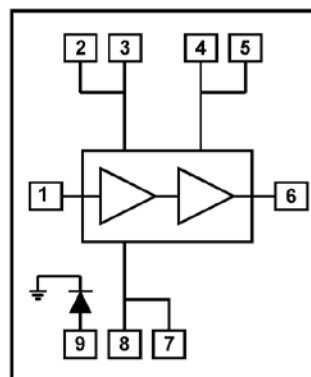
Device Photo



Description

The Endwave *EWH2001ZZ* is a GaAs pHEMT Distributed Power Amplifier MMIC, which operates between 0 and 20 GHz. The device provides 18 dB of gain and 33 dBm output IP3, as well as 25 dBm at 1 dB output power compression with only 270 mA from an 8 volt supply. The device 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.

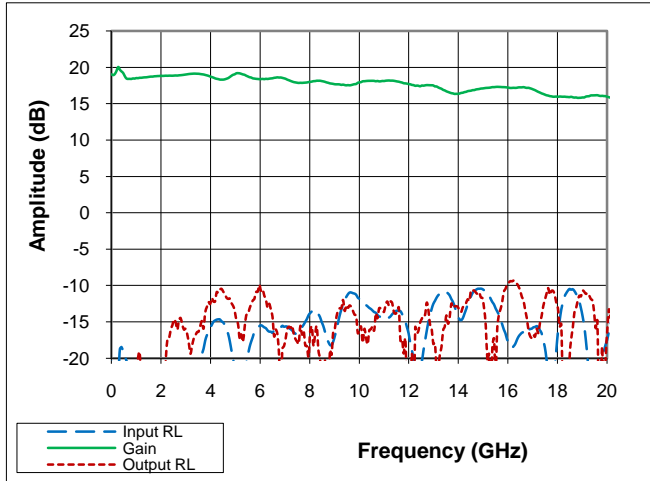
Block Diagram



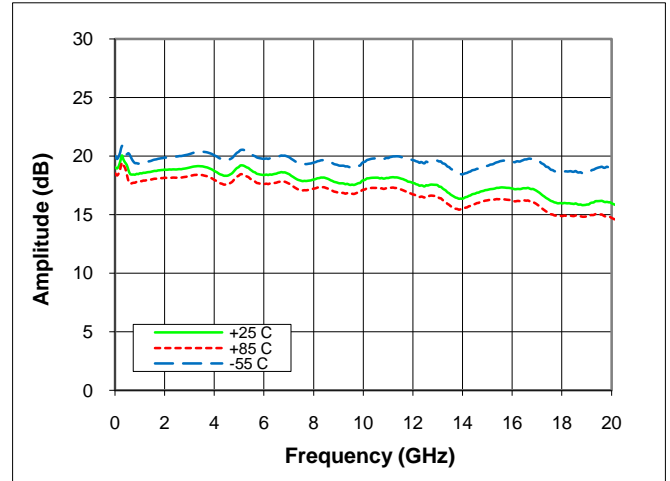
Electrical Characteristics (Temperature = +25°C)

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0 to 12			12 to 20			GHz
Gain	16	18		13	15		dB
Gain Flatness		±1.5			±2.5		dB
Gain Variation Over Temperature		0.03	0.04		0.03	0.04	dB/°C
Input Return Loss		15			12		dB
Output Return Loss		14			12		dB
Output P1dB	23	25		20	22		dBm
Saturated Output Power (Psat)		27			24		dBm
Output IP3		33			31		dBm
Noise Figure		3.5			5		dB
Supply Current (I _{dd}) (Drain= 8V, Gate1 =-0.55V Typ.)		270			290		mA
Gate2 Voltage		+4			+3		V

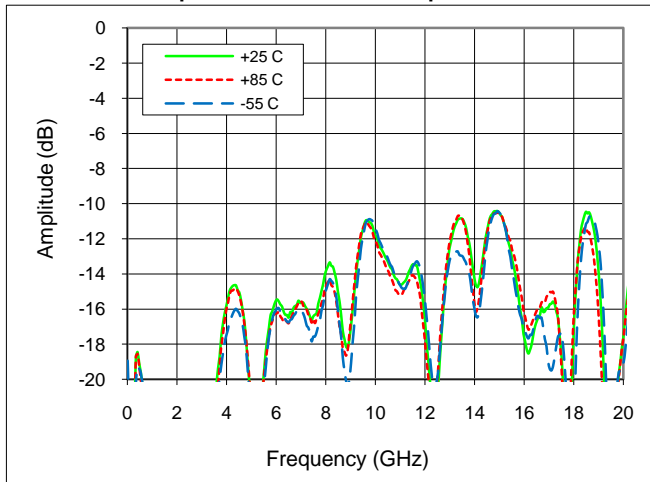
Gain & Return Loss



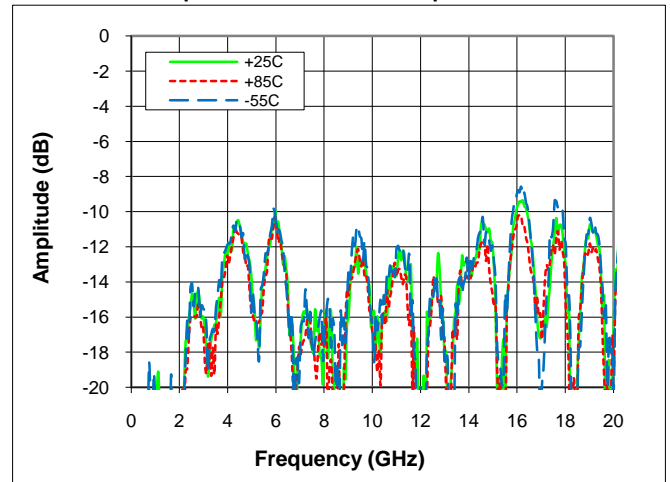
Gain vs. Temperature



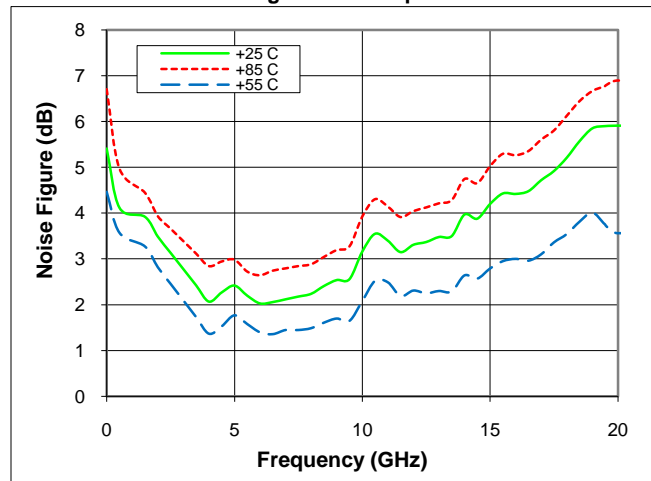
Input Return Loss vs. Temperature



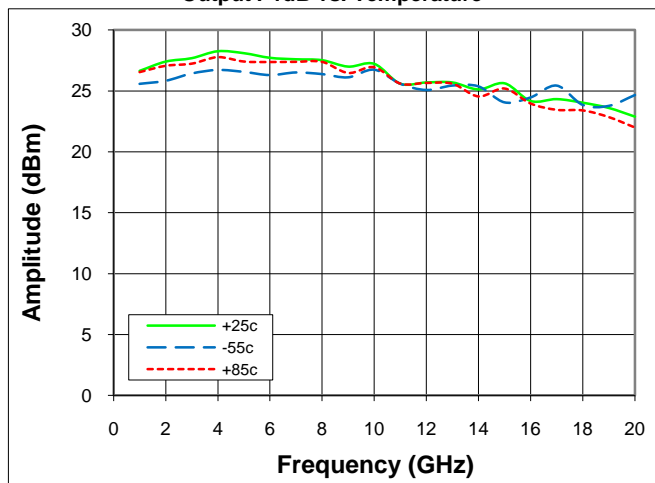
Output Return Loss vs. Temperature



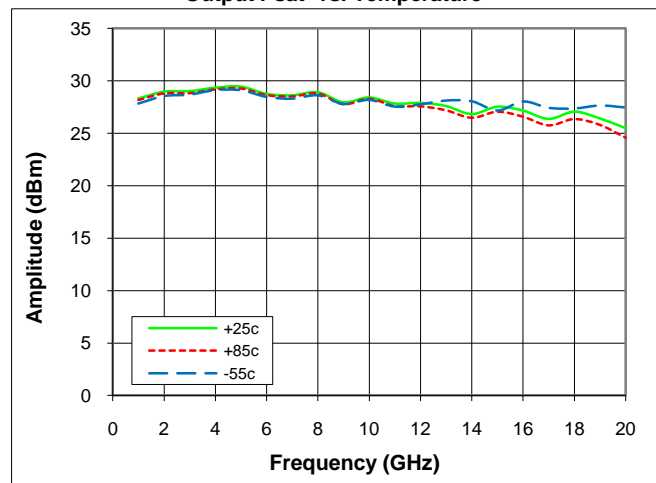
Noise Figure vs. Temperature



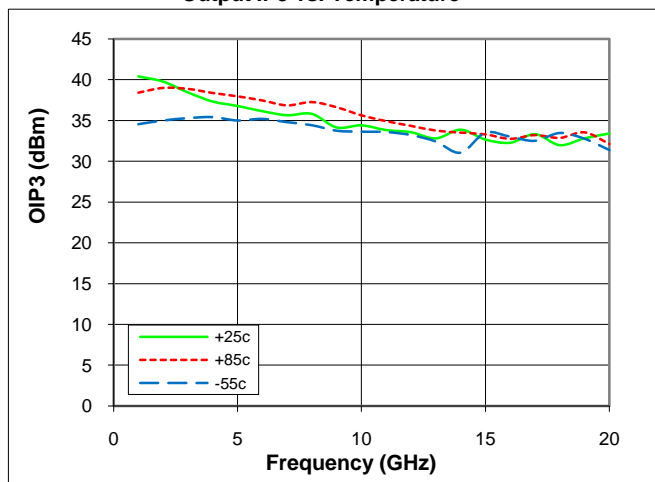
Output P1dB vs. Temperature



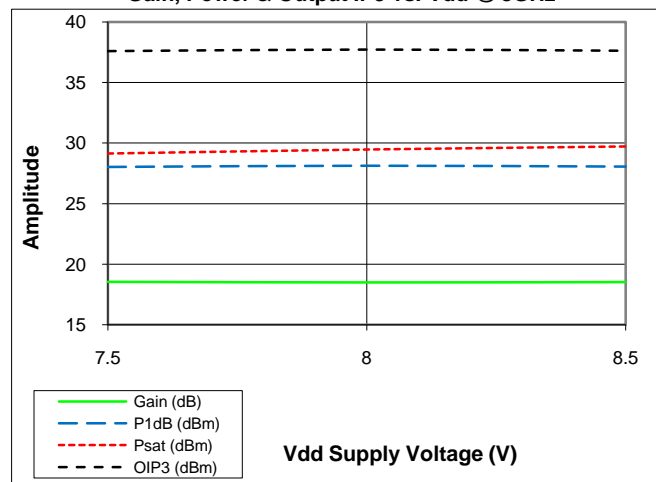
Output Psat vs. Temperature



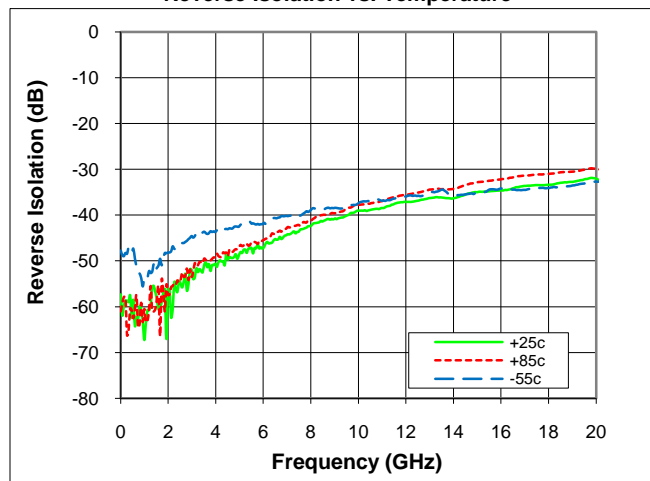
Output IP3 vs. Temperature



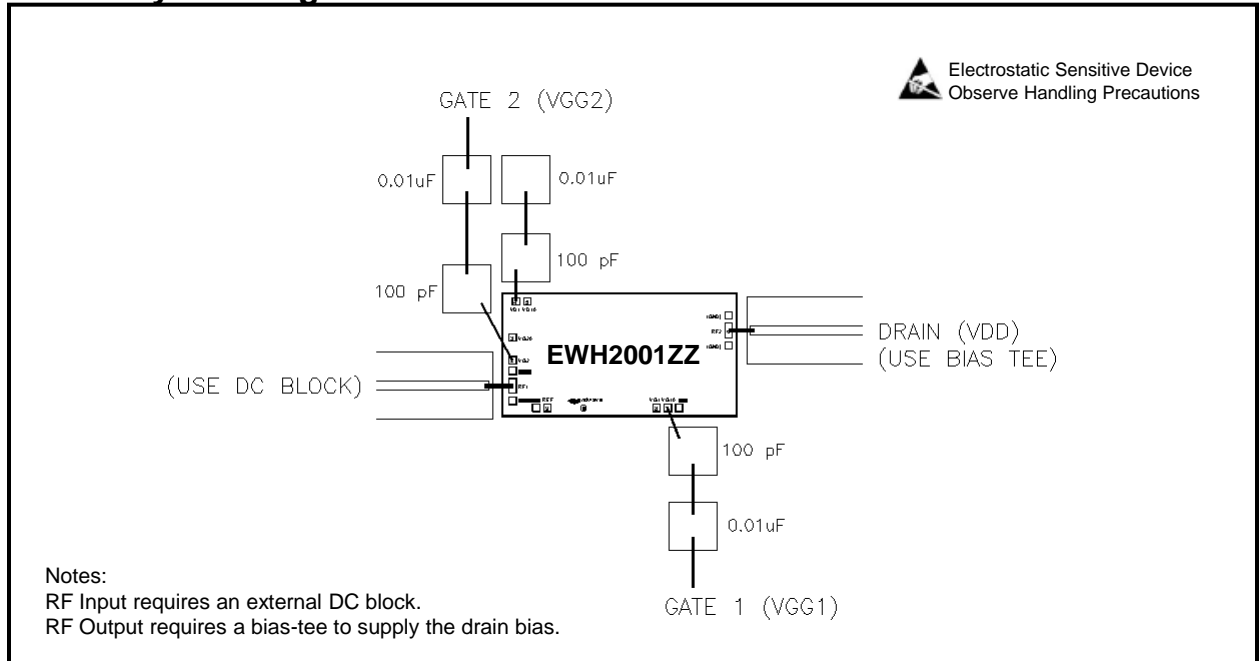
Gain, Power & Output IP3 vs. Vdd @ 8GHz



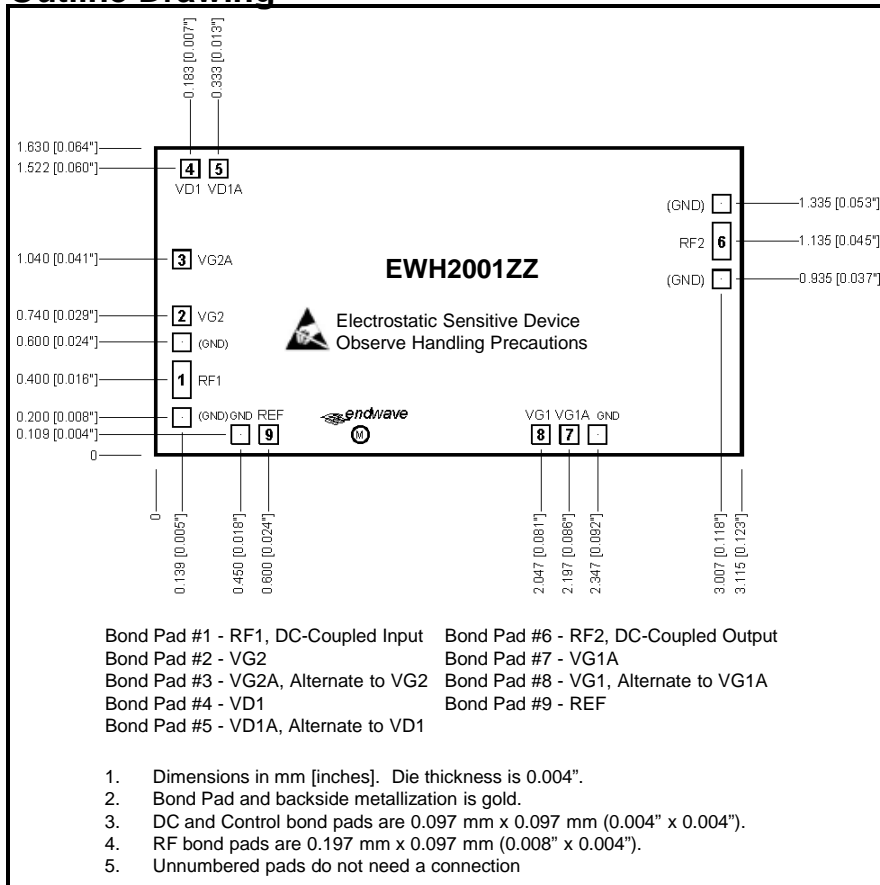
Reverse Isolation vs. Temperature



Assembly Drawing



Outline Drawing



Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+9 Vdc
Gate Bias Voltage (Vgg1)	-2 to 0 Vdc
Gate Bias Voltage (Vgg2)	(Vdd-8) Vdc to Vdd
RF Input Power (RFIN)(Vdd = +8 Vdc)	+23 dBm
Channel Temperature	175°C
Continuous Pdiss(T = 85°C) (derate 56.7 m/W °C above 85°C)	4.71 W
Thermal Resistance (channel to die bottom)	17.65 °C/W
Storage Temperature	-65 to 150°C
Operating Temperature	-55 to 85°C

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
<i>EWH2001ZZ</i>	RoHS compliant bare die in wafer or gel packs
<i>EWH2001ZZ-EV</i>	<i>EWH2001ZZ</i> in a Connectorized Test Fixture

Distributed Amplifier – Bare Die