







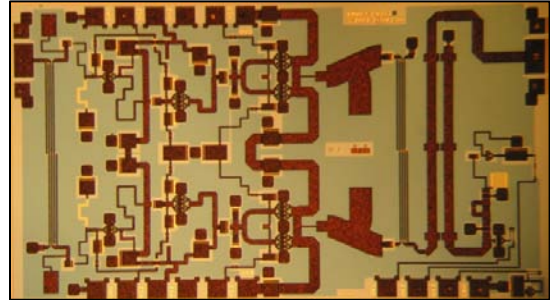


Features

-  Broadband Performance: 17.5 to 20 GHz
-  Gain: 30 dB, typical
-  Output IP3: +32 dBm, typical
-  Output P1dB: +24 dBm, typical
-  Psat: +27 dBm, typical
-  100% DC and RF tested
-  Die size: 3.6 x 2.08 x 0.1 mm
-  RoHS Compliant

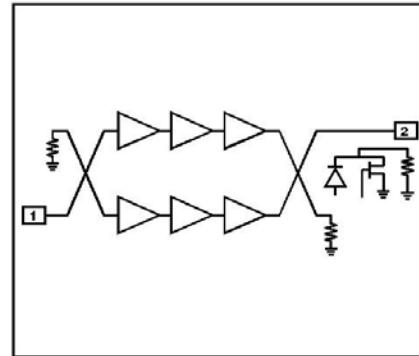
Chip Device Photo



Description

The Endwave *EWP1801ZZ* is a GaAs pHEMT medium power amplifier with integrated power detector MMIC. The high linearity medium power amplifier with +32 dBm typical output IP3 and +24 dBm output P1dB is optimal as a PA itself or as a driver to higher power applications. 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)

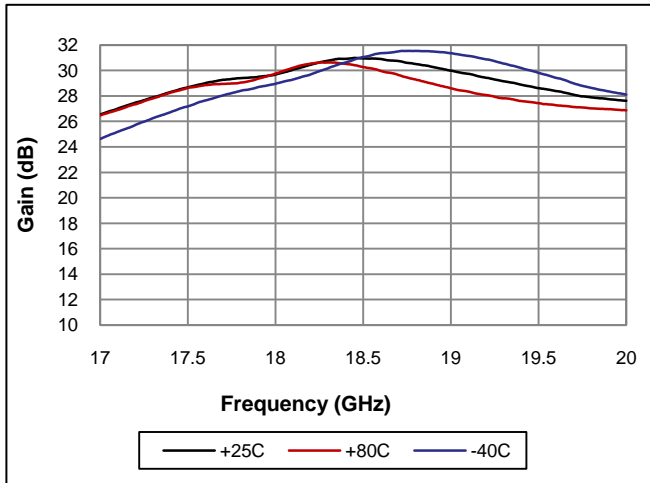
Parameter	Min.	Typ.	Max.	Units
Frequency Range	17.5		20	GHz
Gain		30		dB
Input Return Loss		12		dB
Output Return Loss		12		dB
Output IP3		32		dBm
Output P1dB		24		dBm
Saturated Power Out		27		dBm
Drain Bias Voltages (Vd1,2,3)	3.9	4	4.5	V
Drain Bias Currents (Id1+Id2+Id3)		500		mA
Gain Bias Voltages (Vg1)		-0.67		V

EWP1801ZZ

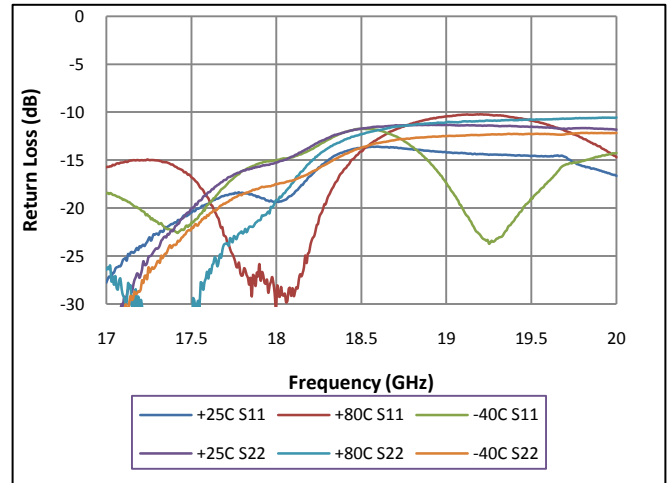
September 2009 – Rev 3

Production

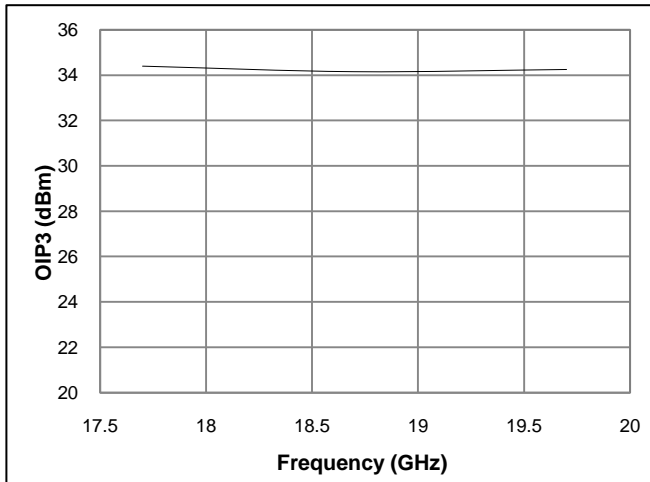
Small Signal Gain vs. Frequency
(Vd = +4V and Id = 480 mA)



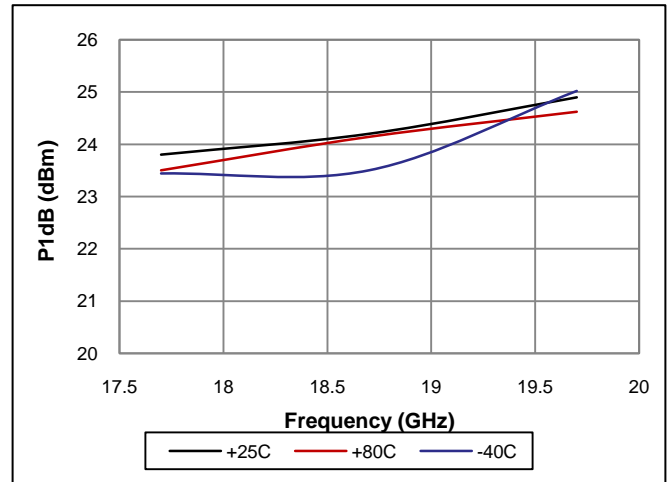
Small Signal Return Loss vs. Frequency
(Vd = +4V and Id = 480mA)



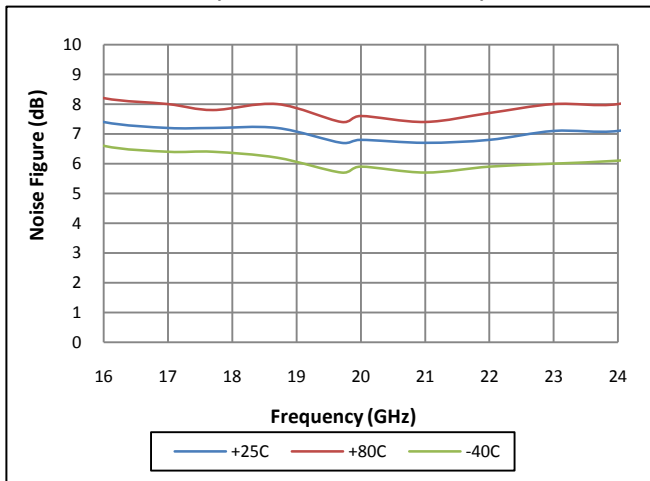
OIP3 vs. Frequency
(Vd = +4V and Id = 480 mA)



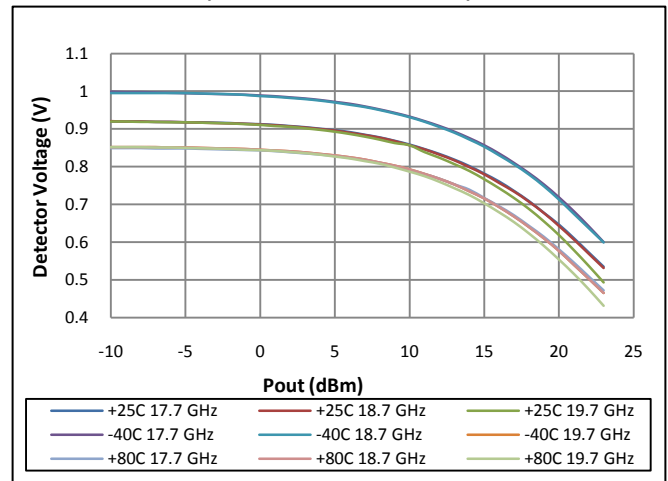
Output P1dB vs. Frequency
(VD = +4V and Id = 480 mA)



Noise Figure vs. Frequency
(Vd = +4V and Id = 340 mA)



Detector Voltage vs. Frequency
(VD = +4V and Id = 480 mA)

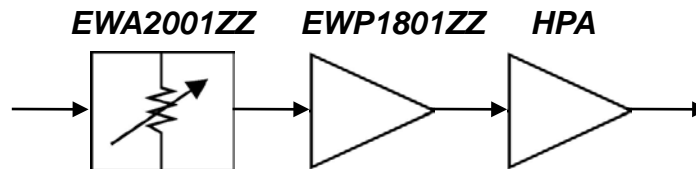


Medium Power Amplifier – Bare Die

Absolute Maximum Ratings

RF Input Power (max gain)	+10 dBm
Supply Voltage (Vd1, 2, 3)	+6.0 V
Supply Current (Id1+ Id2+ Id3)	800 mA
Supply Voltage (Vg1)	-2.5V
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
<i>EWP1801ZZ</i>	RoHS compliant bare die in waffle or gel packs
<i>EWP1801ZZ-EV</i>	<i>EWP1801ZZ</i> in a connectorized test fixture
<i>EWP1801YF</i>	RoHS compliant 5 x 5mm, 32 lead QFN "F" Package
<i>EWP1801YF-EV</i>	<i>EWP1801YF</i> on an Evaluation Board