







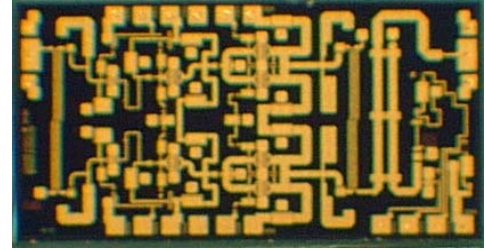


## EWP2702ZZ

### Features

-  Broadband Performance: 21 to 26.6 GHz
-  Gain: 26 dB, typical
-  Output IP3: +31 dBm, typical
-  Output P1dB: +22 dBm, typical
-  Psat: +25 dBm, typical
-  100% DC and RF tested
-  Die size: 3.4 x 1.78 x 0.1 mm
-  RoHS Compliant

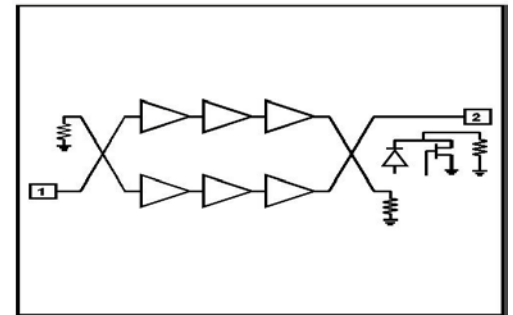
### Device Photo



### Description

The Endwave *EWP2702ZZ* is a GaAs pHEMT broadband medium power amplifier MMIC. The high linearity medium power amplifier with +31 dBm typical output IP3 and +22 dBm output P1dB is optimal as a PA itself or as a driver to higher power applications. This 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.

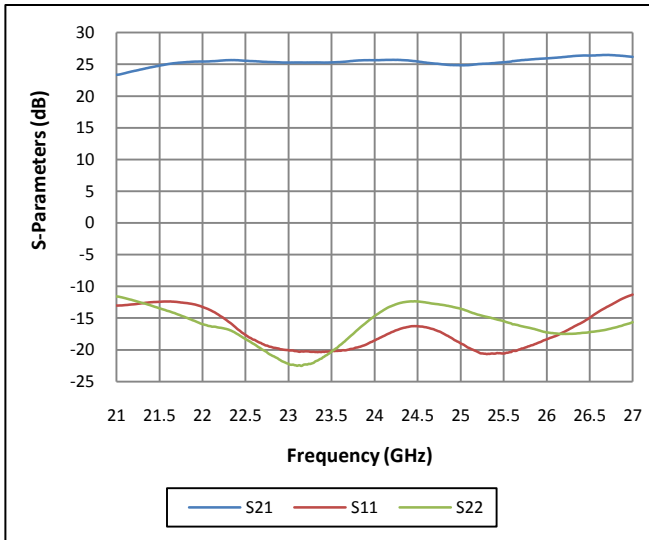
### Block Diagram



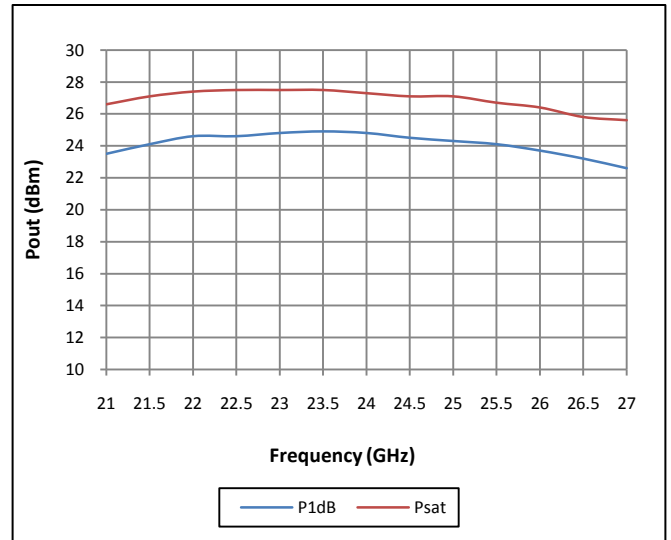
### Electrical Characteristics (Temperature = +25 °C)

| Parameter                         | Min. | Typ.  | Max. | Units |
|-----------------------------------|------|-------|------|-------|
| Frequency Range                   | 21   |       | 26.6 | GHz   |
| Gain                              |      | 26    |      | dB    |
| Input Return Loss                 |      | 12    |      | dB    |
| Output Return Loss                |      | 12    |      | dB    |
| Output IP3                        |      | 31    |      | dBm   |
| Output P1dB                       |      | 22    |      | dBm   |
| Saturated Power Out               |      | 25    |      | dBm   |
| Drain Bias Voltages (Vd1,2,3)     | 3.9  | 4.2   | 4.5  | V     |
| Drain Bias Currents (Id1+Id2+Id3) |      | 530   |      | mA    |
| Gain Bias Voltages (Vg1)          |      | -0.67 |      | V     |

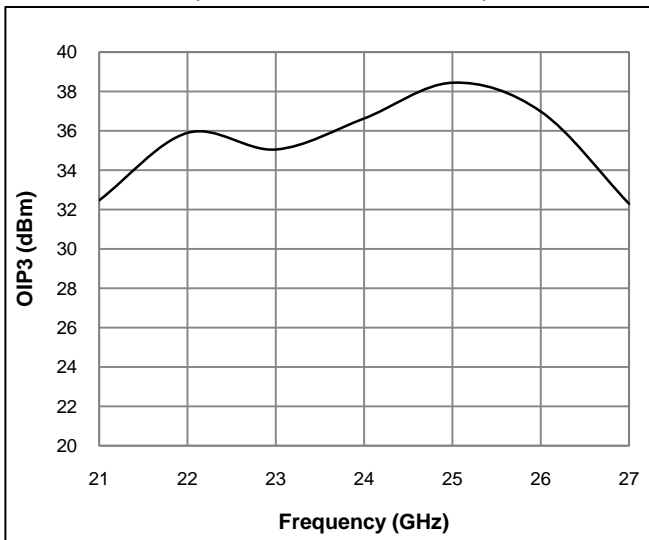
**Small Signal Response vs. Frequency**  
(Vd = +4.2V and Id = 490 mA)



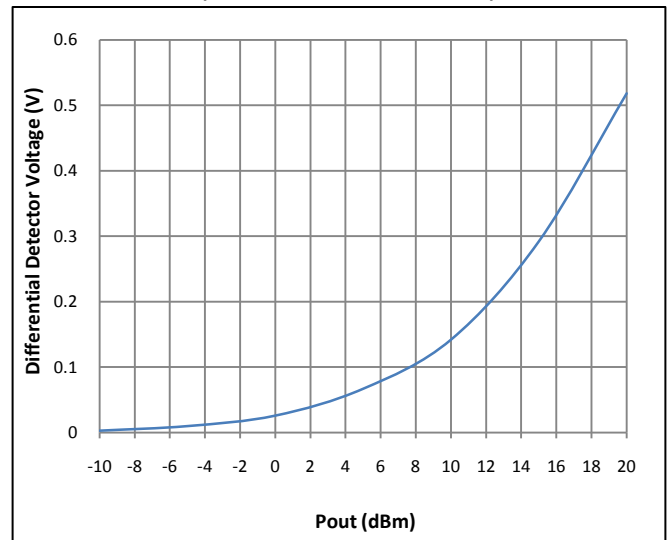
**P1dB and Psat vs. Frequency**  
(Vd = +4.2V and Id = 490 mA)



**OIP3 @ 15 dBm/tone Pout vs. Frequency**  
(Vd = +4.2 V and Id = 490 mA)

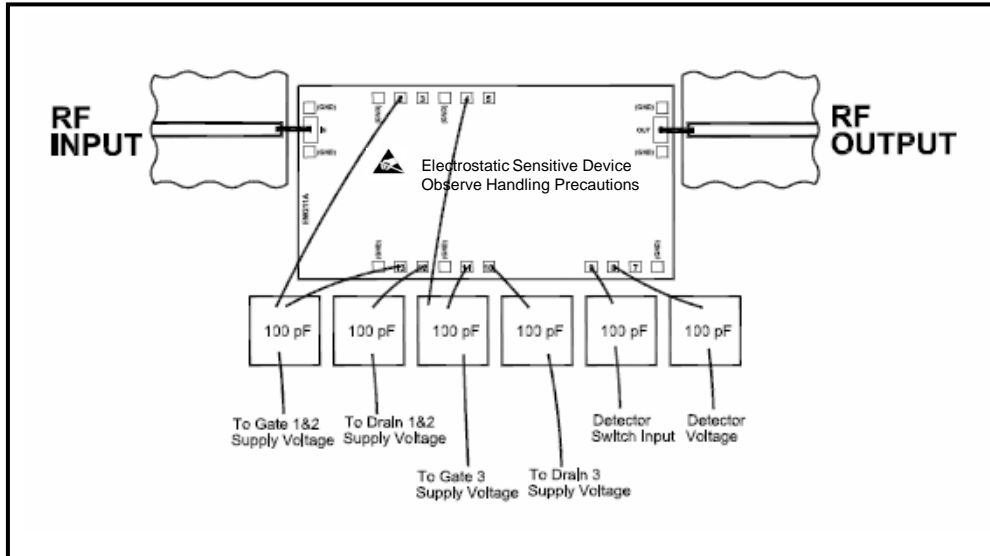


**Differential Detector Voltage @ 24 GHz vs. Pout**  
(Vd = +4.2 V and Id = 490 mA)

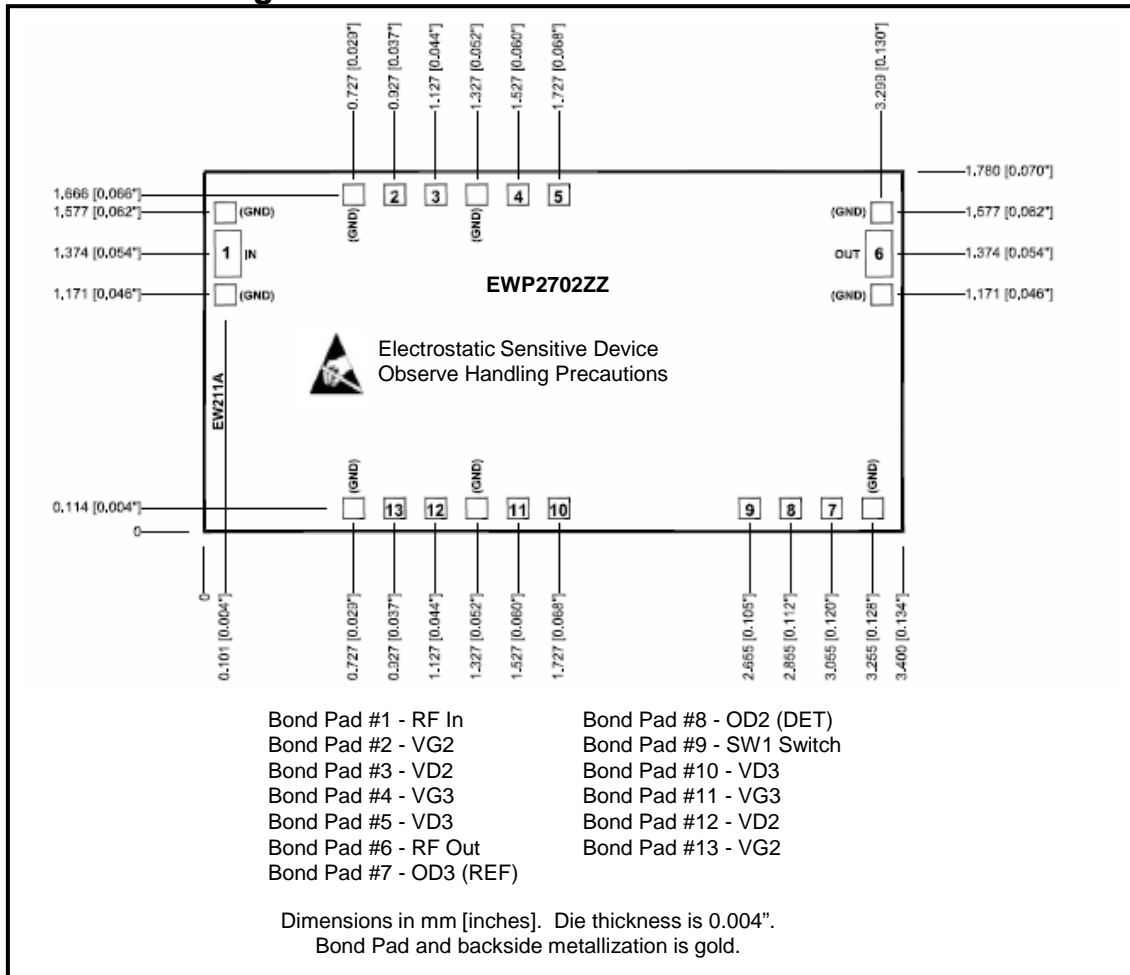


Medium Power Amplifier – Bare Die

### Assembly Drawing



### Outline Drawing

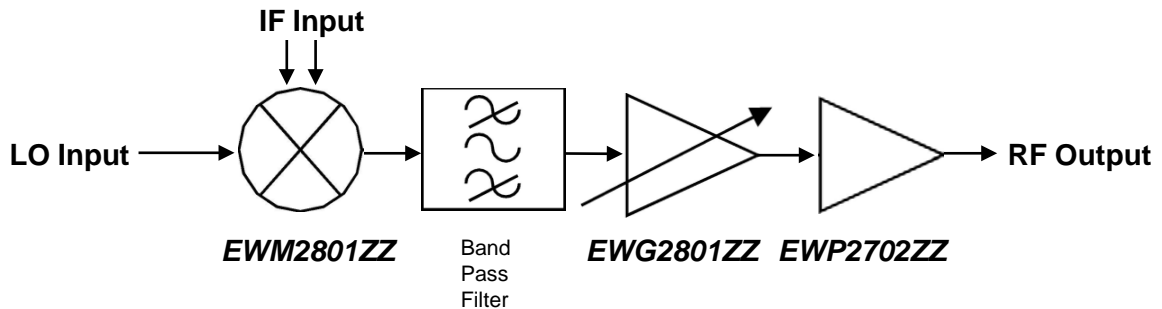


Medium Power Amplifier - Bare Die

**Absolute Maximum Ratings**

|                                |               |
|--------------------------------|---------------|
| RF Input Power (max gain)      | +10 dBm       |
| Supply Voltage (Vd1, 2, 3)     | +5.5 V        |
| Supply Current (Id1+ Id2+ Id3) | 800 mA        |
| Supply Voltage (Vg1)           | -2.5 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](http://www.endwave.com).

**Ordering Information**

| <b>Part Number</b>  | <b>Description</b>                               |
|---------------------|--|
| <i>EWP2702ZZ</i>    | RoHS compliant bare die in waffle or gel packs   |
| <i>EWP2702ZZ-EV</i> | <i>EWP2702ZZ</i> in a connectorized test fixture |

Medium Power Amplifier – Bare Die