



### Features

- +45 dBm Typical IP3
- +30 dBm Typical P1dB
- 16 dB Typical Gain
- Single Positive Bias
- Surface Mount Package

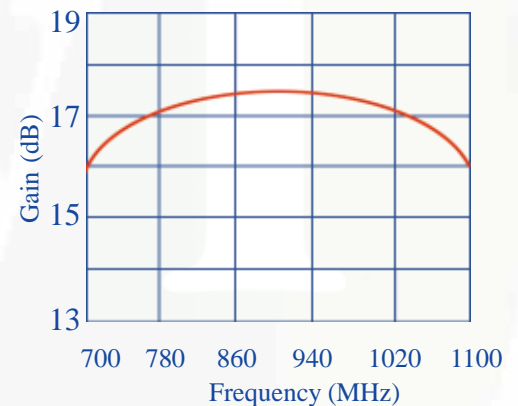
The MPS093011 is a modular amplifier designed to meet the ultralinear transmitter output requirements for many of the commercially available wireless systems. The amplifier is a class A, single stage amplifier based on a GaAs MESFET transistor. The amplifier exhibits an extremely high IP3 (+45dBm) relative to the DC power consumed (3 W). The device is self contained with all matching and bias circuitry included.

### Specifications

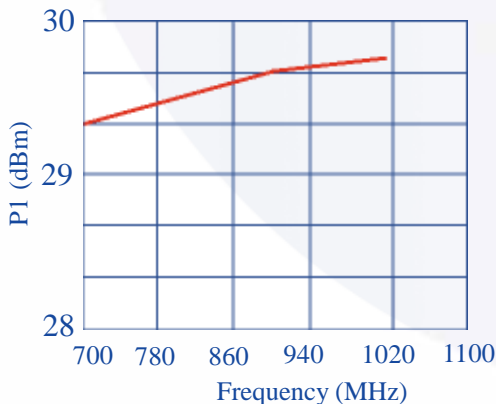
- Electrical at 25°C, V<sub>dd</sub>= 7.5 V, Z<sub>o</sub>= 50 Ω

| Symbol          | Parameter                 | Min.  | Typical     | Max      | Unit  |
|-----------------|---------------------------|-------|-------------|----------|-------|
| Freq            | Frequency Range           | 800   |             | 1000     | MHz   |
| SSG             | Small Signal Gain         | 14    | 16          |          | dB    |
| P1dB            | P out at 1 dB Compression |       | +30.0       |          | dBm   |
| IP3             | Third-order Intercept     | +43.0 | +45.0       |          | dBm   |
| VSWR            | Input VSWR                |       | 1.5:1/2.2:1 |          |       |
| ΔGOF            | Gain Variation over Freq. |       | +/- 0.25    | +/- 0.50 | dB    |
| ΔGOT            | Gain Variation over Temp. |       | - 0.01      |          | dB/°C |
| I <sub>dd</sub> | DC Current                |       | 350         | 420      | mA    |

Gain vs. Frequency



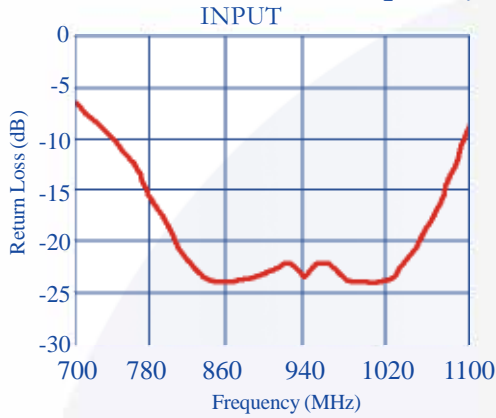
Output Power at P1dB



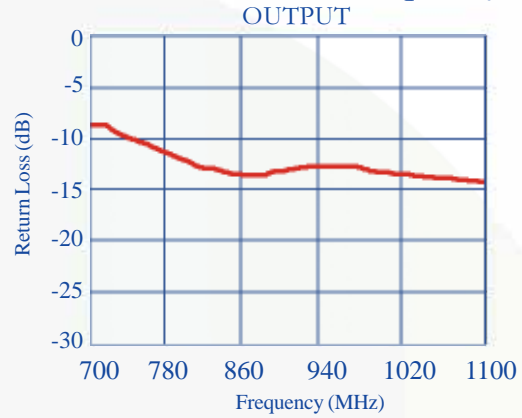
### Absolute Maximum Ratings

|                                    |                 |
|------------------------------------|-----------------|
| Maximum Bias Voltage               | 8.0 V           |
| Maximum Continuous RF Input Power  | 950 mW          |
| Maximum Peak Input Power           | 1400mW          |
| Maximum Case Operating Temperature | +85°C           |
| Maximum Storage Temperature        | -65°C to +150°C |

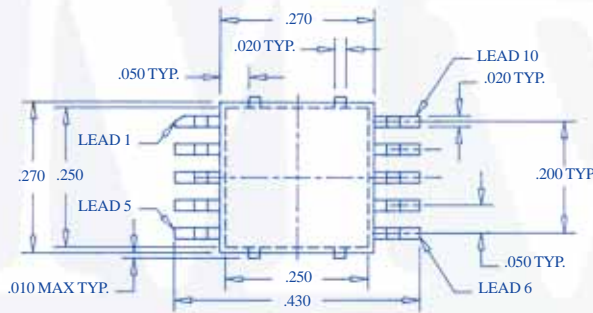
### Return Loss vs. Frequency



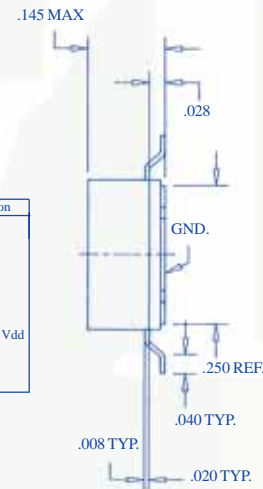
### Return Loss vs. Frequency



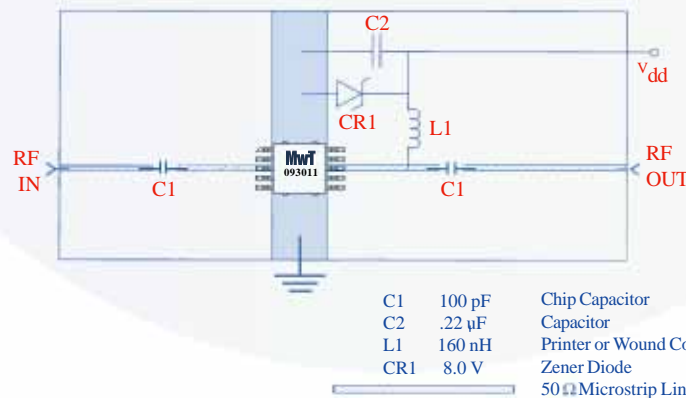
### Outline Diagrams



| Pin  | Connection     |
|------|----------------|
| 1    | N/C            |
| 2    | N/C            |
| 3    | RF Input       |
| 4    | NC             |
| 5    | N/C            |
| 6    | N/C            |
| 7    | N/C            |
| 8    | RF Output, Vdd |
| 9    | N/C            |
| 10   | N/C            |
| Case | Ground         |



### Application Circuit



- C1 100 pF Chip Capacitor
- C2 .22  $\mu$ F Capacitor
- L1 160 nH Printer or Wound Coil
- CR1 8.0 V Zener Diode
- 50  $\Omega$  Microstrip Line