



Features

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

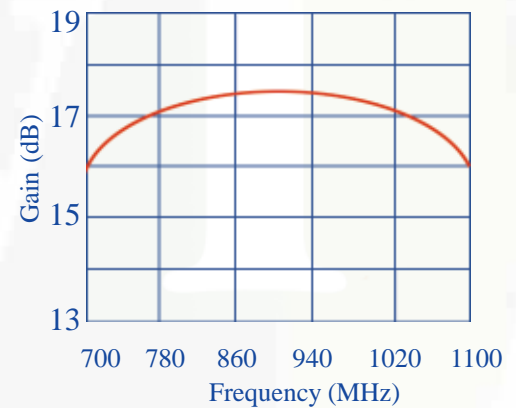
The MPS093011 is a modular amplifier designed to meet the ultralinear transmitter output requirements for many of the commercially available wireless systems. The amplifier is a class A, single stage amplifier based on a GaAs MESFET transistor. The amplifier exhibits an extremely high IP3 (+45dBm) relative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

Specifications

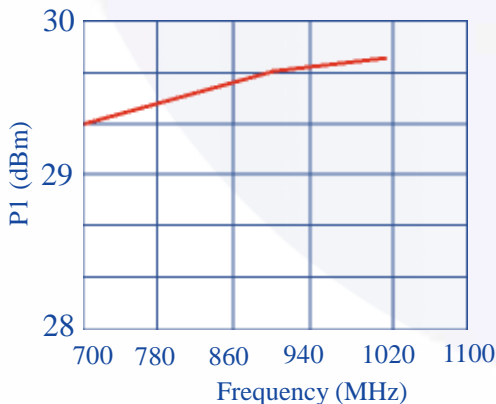
- Electrical at 25°C, V_{dd}= 7.5 V, Z_o= 50 Ω

| 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 _{dd} | DC Current | | 350 | 420 | mA |

Gain vs. Frequency



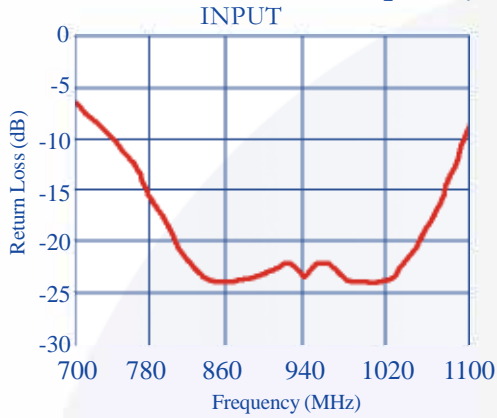
Output Power at P1dB



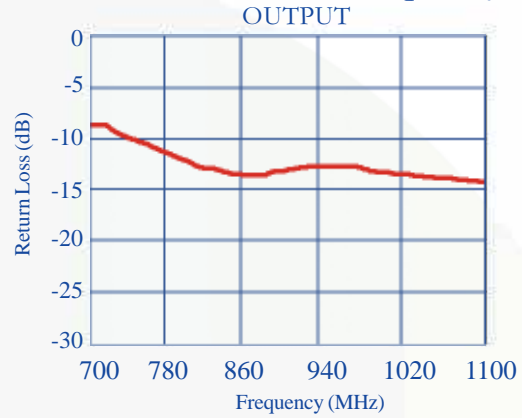
Absolute Maximum Ratings

| | |
|------------------------------------|-----------------|
| 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 |

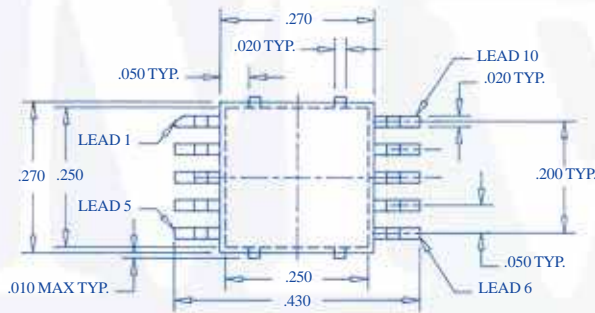
Return Loss vs. Frequency



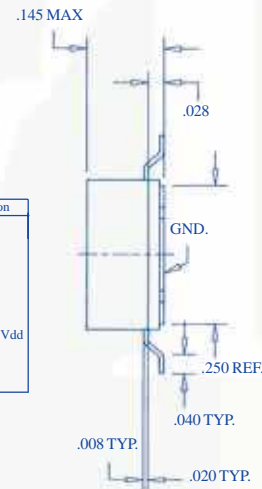
Return Loss vs. Frequency



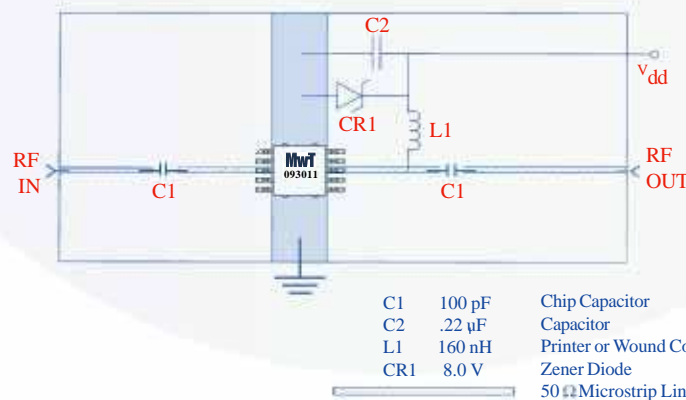
Outline Diagrams



| 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 μ F Capacitor
- L1 160 nH Printer or Wound Coil
- CR1 8.0 V Zener Diode
- 50 μ m Microstrip Line