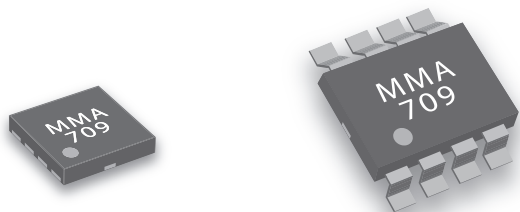


PRELIMINARY

MMA709

2 Watt InGaP HBT Amplifier



3030 OUTLINE

SOIC8 OUTLINE

Description:

The MMA709-3030 is a Power InGaP HBT device that is designed to provide moderate power levels from 100 MHz to 2.5 GHz. Best operation is obtained across narrow bandwidths, typically 10%. The device is characterized in Class A operation. The device is assembled in a low profile plastic package that is a 3mm square DFN style that has eight leads. The backside of the packages are DC/RF/Thermal ground. The device is also available in SOIC8 Package.

Features:

- High Output Power: +34 dBm (Typ)
- High 3rd Order OIP3: +54 dBm (Typ)
- High Dynamic Range: 97 dB (Typ)
- 3mm square DFN plastic package

RF Specifications:

| Parameter | Symbol | Condition | 1960 MHz | | | 2140 MHz | | | Units |
|--------------------------|------------------|-----------|----------|-----|-----|----------|-----|------|-------|
| | | | MIN | TYP | MAX | MIN | TYP | MAX | |
| Gain | SSG | 1, 2 | 10 | 11 | | 9 | 9.5 | 13.5 | dB |
| Output Power | P _{1dB} | 1, 2 | +33 | +34 | | +33 | +34 | | dBm |
| 3 rd Order IP | OIP3 | 1, 2, 3 | +52 | +55 | | +50 | +53 | | dBm |
| Input VSWR | | 1, 2 | | | 2:1 | | | 2:1 | |
| Noise Figure | NF | 1, 2 | | 6.5 | 6.5 | | 6.5 | 7.0 | dB |
| Spur Free Dynamic Range | SFDR | | 95 | 102 | | 95 | 102 | | dB |
| Thermal Resistance | θ_{JC} | 2 | | | | | | 12 | °C/W |

- NOTES:
1. All measurements from device evaluation boards.
 2. $V_S = 7.00$ V, $I_{CC} = 700$ mA.
 3. IP3: Power output per tone = +15dBm, separation = 1.22 MHz

Absolute Maximum Ratings:

| Parameters | Symbol | Minimum | Maximum | Unit |
|---|-------------------|---------|---------|------|
| Operating temperature Range | T _{OP} | -40 | +85 | °C |
| Storage Temperature Range | T _{STOR} | -54 | +125 | °C |
| Breakdown Voltage, Collector to Emitter | BV _{CEO} | 14.5 | | V |
| DC Collector Current | I _{CC} | | 900 | mA |
| Operating Junction Temperature | T _J | | 150 | °C |

Contact the factory when using other than 7 volts.



Typical PCS Band Performance, 3030 Package:

Figure 1.

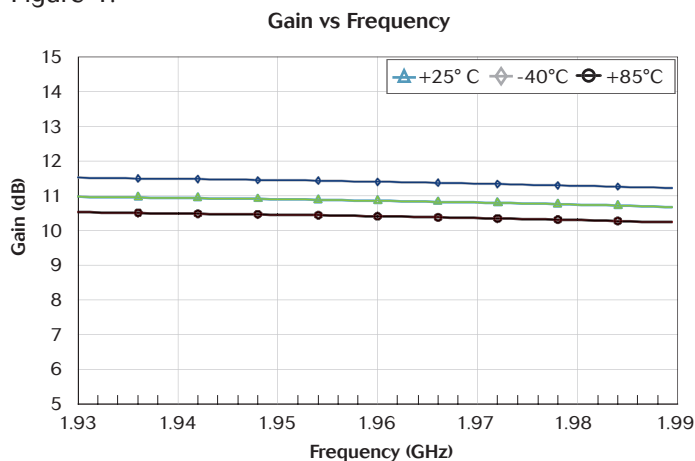


Figure 2.

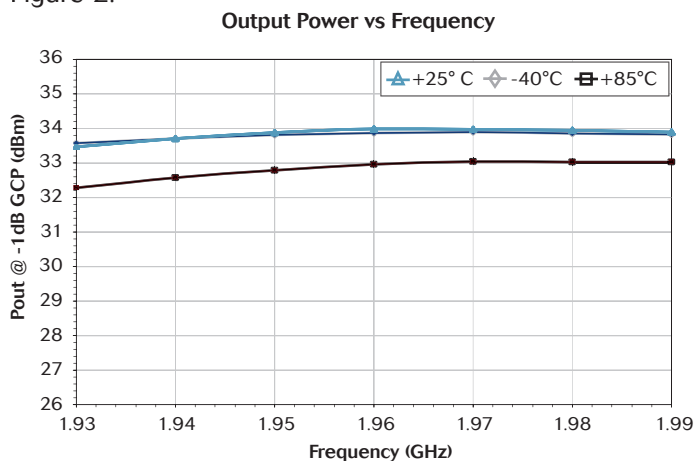


Figure 3.

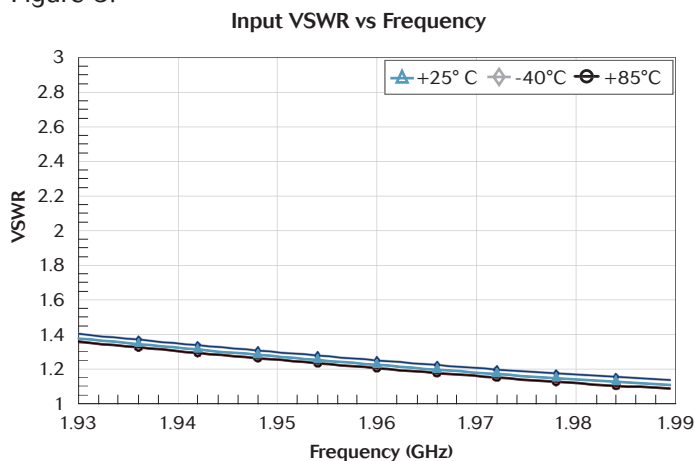


Figure 4.

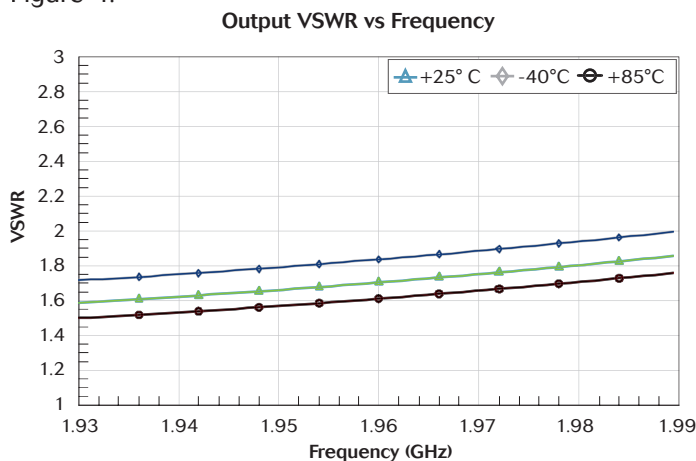


Figure 5.

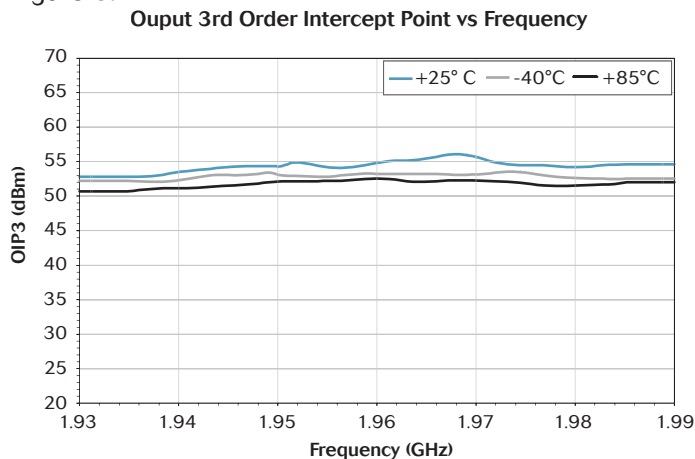
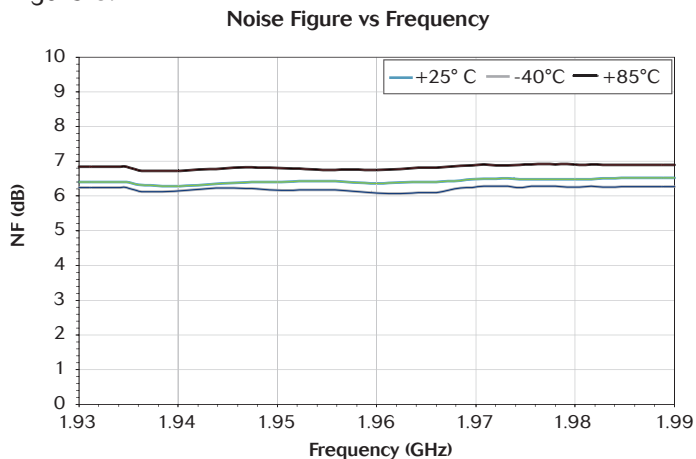


Figure 6.



MMA709

2 Watt InGaP HBT Amplifier



Typical UMTS Band Performance, 3030 Package:

Figure 7.

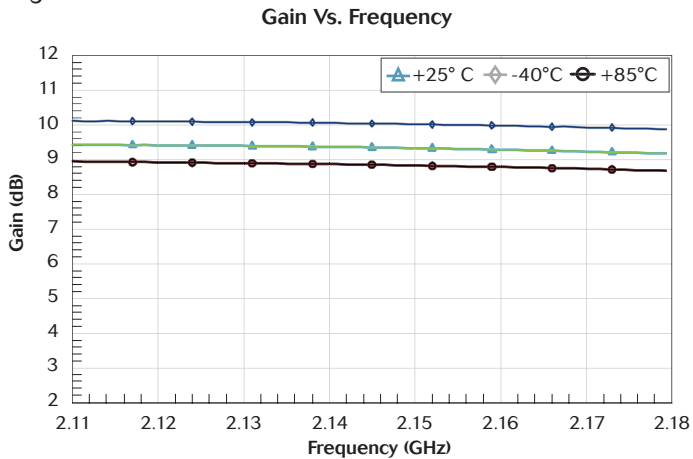


Figure 8.

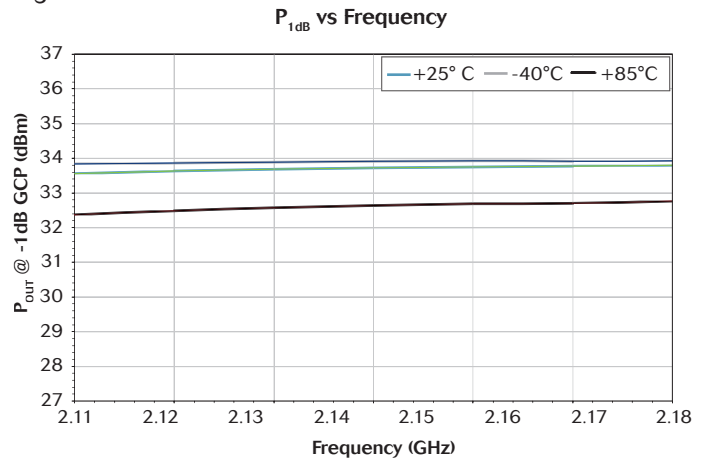


Figure 9.

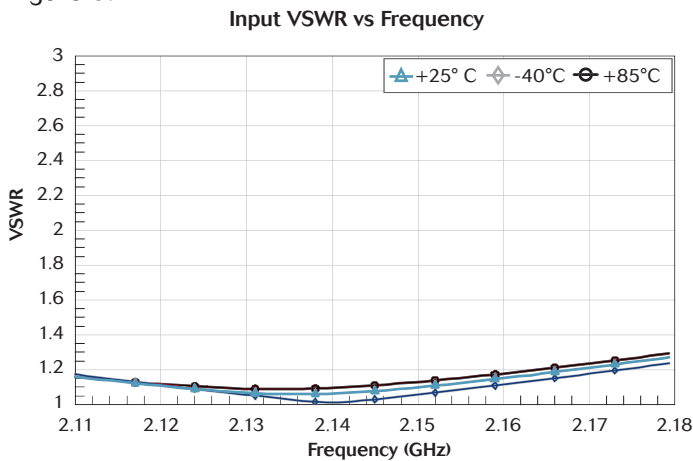


Figure 10.

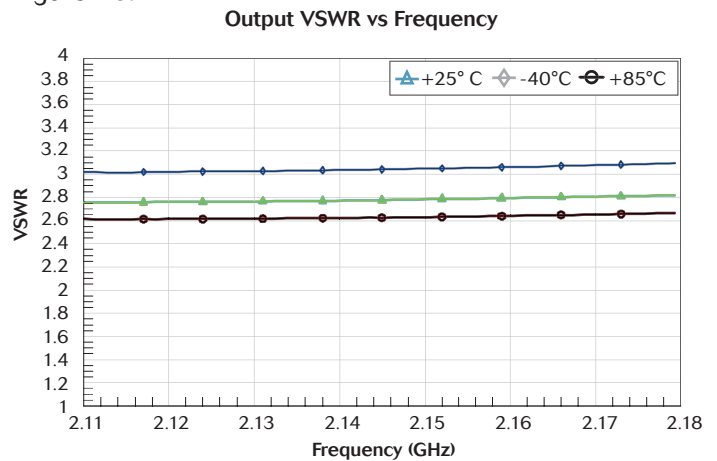


Figure 11.

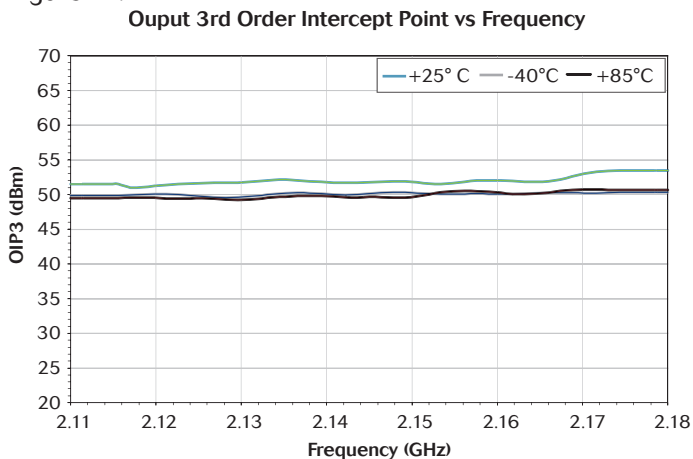
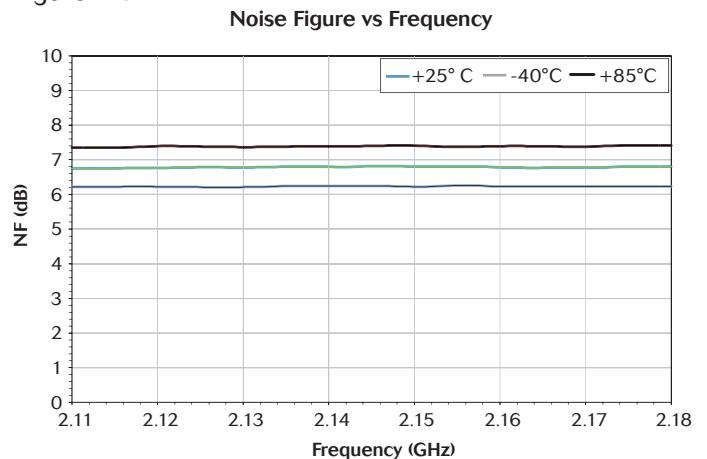
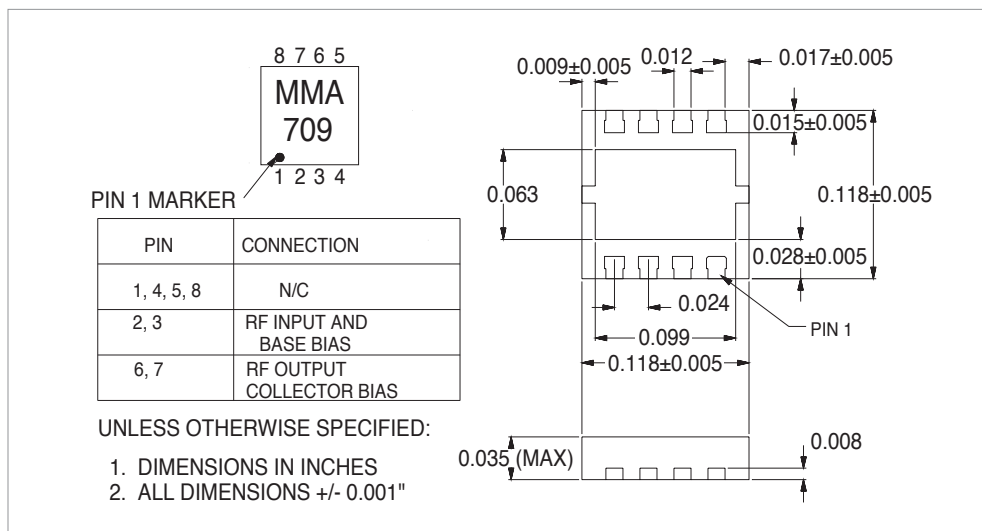


Figure 12.



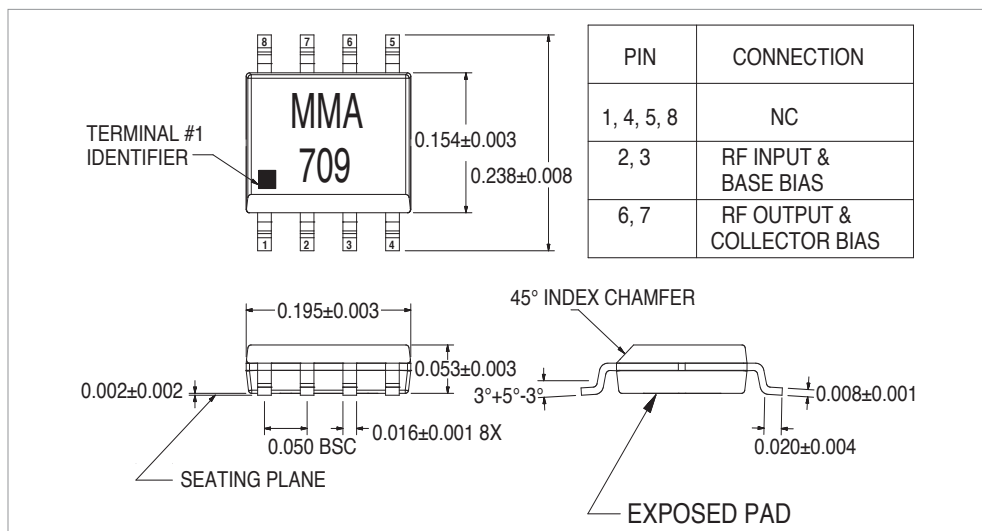
3030 Package Outline:

Figure 13.



SOIC8 Package Outline:

Figure 14.



Aeroflex / Metelics

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.