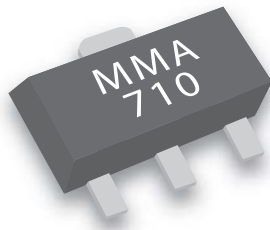


MMA710

DC to 4 GHz Amplifier



SOT89 OUTLINE

Description:

The MMA710 is a fully matched amplifier fabricated in Aeroflex / Metelics reliable InGaP HBT technology. The economical SOT89 package provides excellent wide-band performance.

Features:

- DC - 4 GHz Broadband Gain Block
- ± 0.5 dB Typical Gain Flatness
- 50 Ohms Input/Output Impedances

RF Specifications:

| Parameter | Term | Minimum | Typical | Maximum | Units |
|---------------------------------------|-----------|---------|---------|---------|-------|
| 3dB Bandwidth | BW | DC | --- | 4 | GHz |
| Frequency Range | f_o | DC | --- | 4 | GHz |
| Gain | G_p | 12 | 13 | --- | dB |
| Output Power | P_{1dB} | +18 | +20 | --- | dBm |
| Input Standing Wave Ratio | VSWR | --- | 1.5:1 | 2.0:1 | --- |
| Output Standing Wave Ratio | VSWR | --- | 2.0:1 | 3.6:1 | --- |
| 3 rd Order Intercept Point | IP3 | +34 | +37 | --- | dBm |
| Noise Figure | NF | --- | 5.0 | 6.0 | dB |
| Device Current | I_c | 85 | 95 | 110 | mA |

- NOTES:
1. $T_A = +25$ °C.
 2. $V_S = 8.0$ Vdc, $R_{BIAS} = 11$ Ω
 3. IP3 measured with two tones offset 10 MHz at 0 dBm per tone.

Absolute Maximum Ratings:

| Parameters | Rating |
|--------------------------------------|----------------|
| Device Current (I_c) | 150 mA |
| RF Input Power, continuous | +13 dBm |
| Operating Temperature | -40 to +85 °C |
| Storage Temperature | -55 to +125 °C |
| Thermal Resistance (θ_{JC}) | 70 °C/W |

Typical RF Performance:

Figure 1.

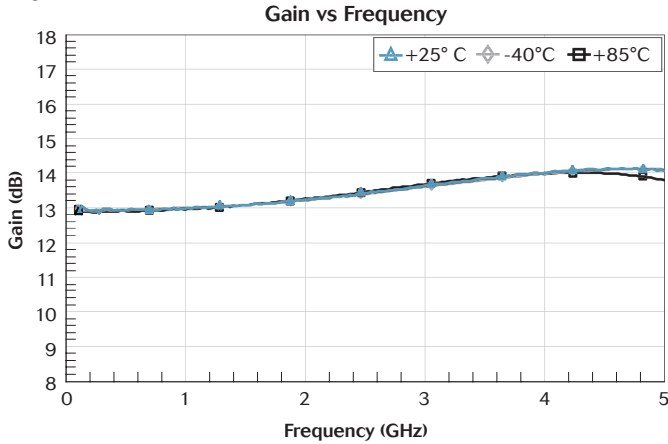


Figure 2.

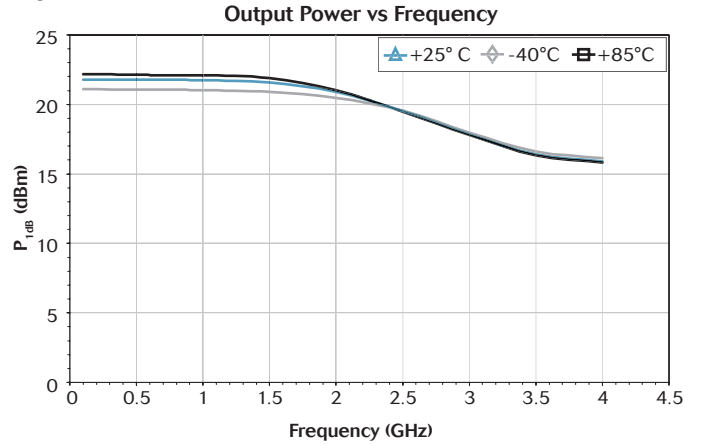


Figure 3.

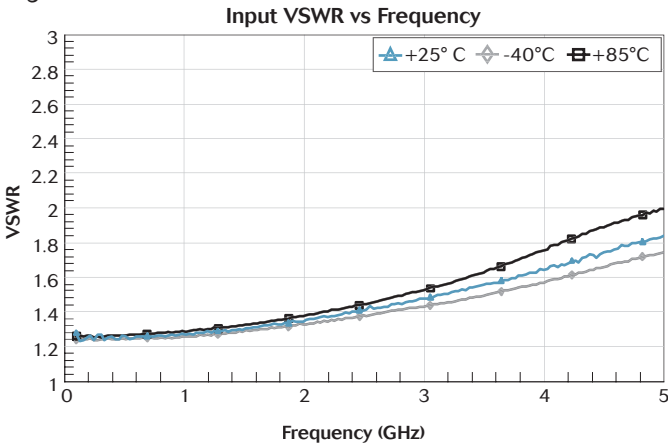


Figure 4.

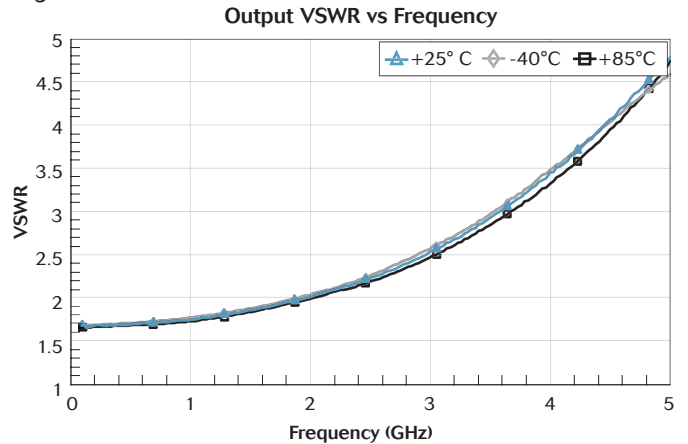


Figure 5.

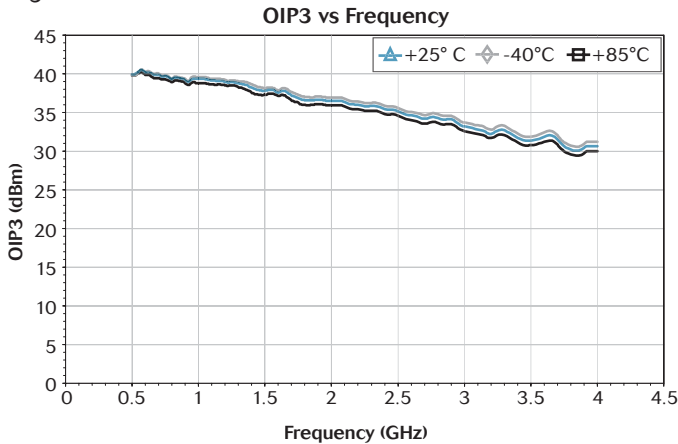
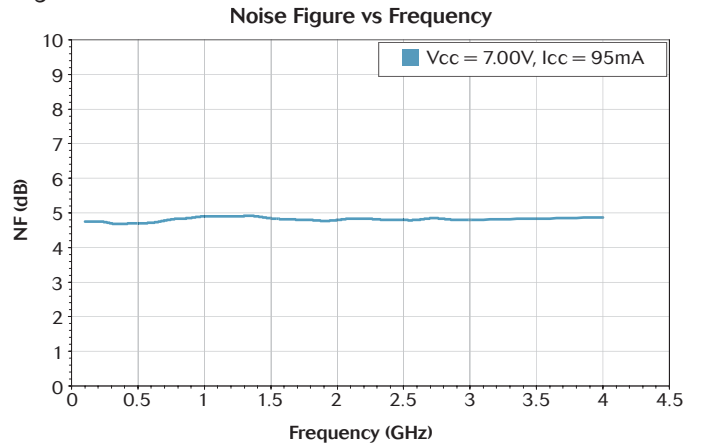


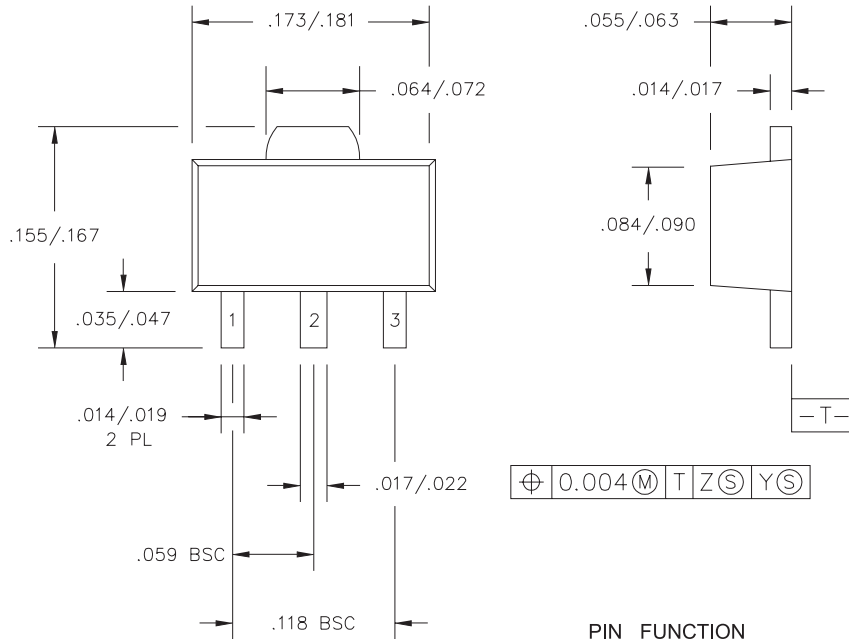
Figure 6.



MMA710 DC to 4 GHz Amplifier



SOT89 Outline Dimensions:

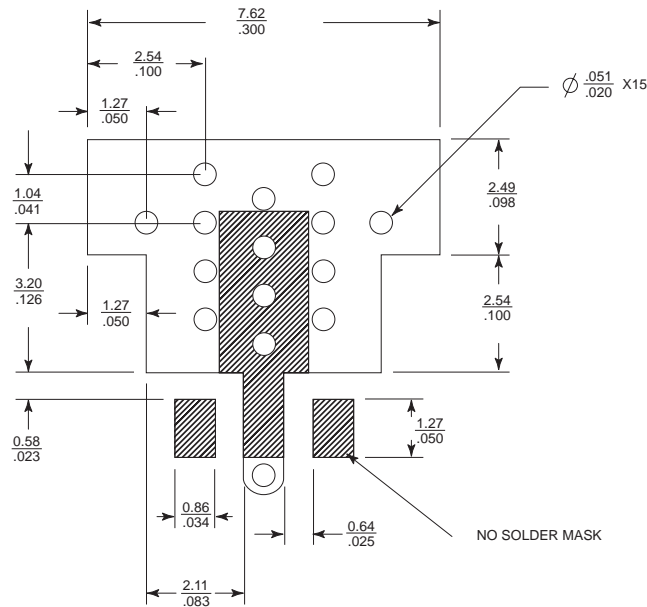


ALL DIMENSIONS ± 0.003 INCH
 0.07 MM

PIN FUNCTION

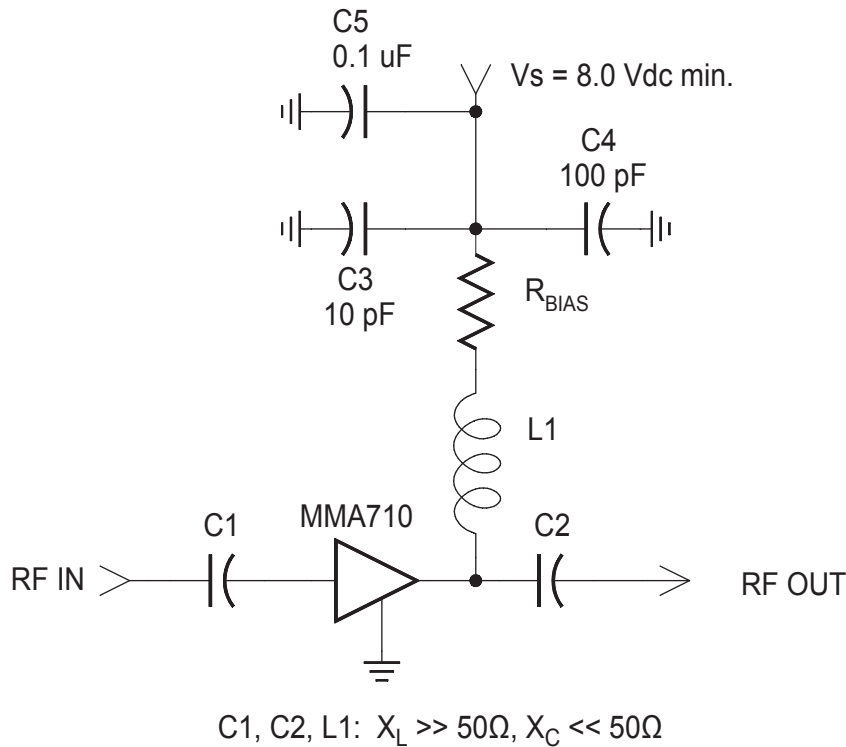
- 1 INPUT
- 2 GROUND
- 3 OUTPUT

Recommended PCB Layout:



ALL DIMENSIONS ± 0.001 INCH
 0.02 MM

Application Circuit:



R_{BIAS} vs. V_S

| | | | | |
|-------------------------|-----|------|------|------|
| V_S (V) | 8.0 | 10.0 | 12.0 | 15.0 |
| R_{BIAS} (Ω) | 11 | 30 | 51 | 86 |
| Power Dissipation (W) | 0.1 | 0.3 | 0.5 | 0.8 |

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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.