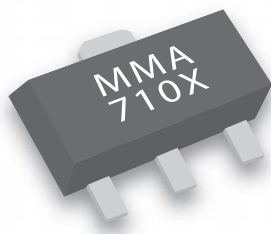


# MMA710X

## DC to 3 GHz Amplifier



SOT89 OUTLINE



### Description:

The MMA710X is a fully matched amplifier fabricated in Aeroflex / Metelics reliable InGaP HBT technology. The economical SOT89 package provides excellent wide-band performance.

### Features:

- DC - 3 GHz Broadband Gain Block
- $\pm 0.5$  dB Typical Gain Flatness
- 50 Ohms Input/Output Impedances

### RF Specifications:

Parameter	Term	Minimum	Typical	Maximum	Units
3dB Bandwidth	BW	DC	---	3	GHz
Frequency Range	$f_o$	DC	---	3	GHz
Gain	$G_p$	11	12	---	dB
Output Power	$P_{1dB}$	+16	+18	---	dBm
Input Standing Wave Ratio	VSWR	---	1.5:1	2.0:1	---
Output Standing Wave Ratio	VSWR	---	2.0:1	2.5:1	---
3 <sup>rd</sup> Order Intercept Point	IP3	+30	+34	---	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,  $R_{BIAS} = 11$   $\Omega$
  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 ( $\theta_{JC}$ )	70 °C/W



## Typical RF Performance:

Figure 1.

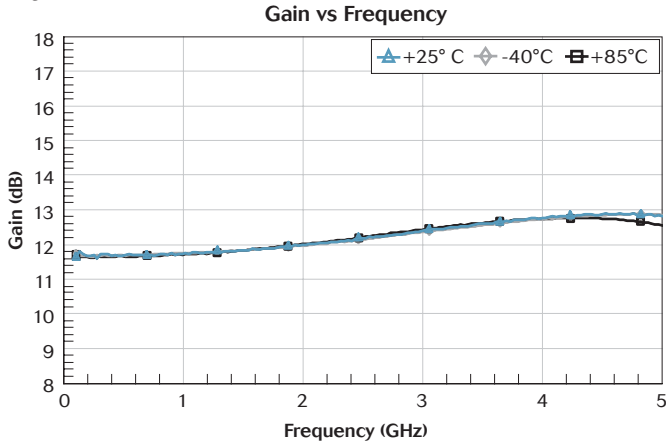


Figure 2.

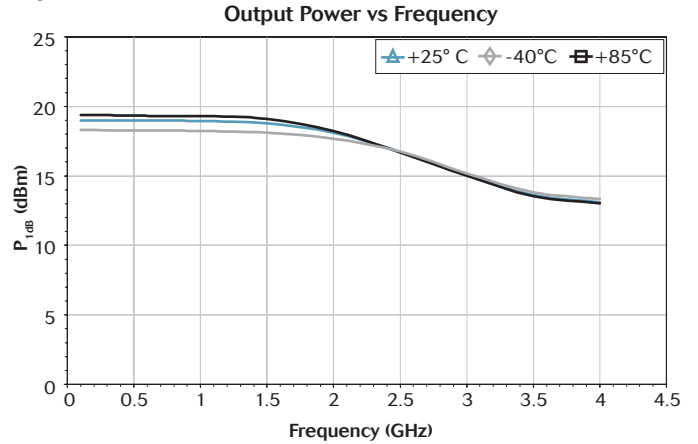


Figure 3.

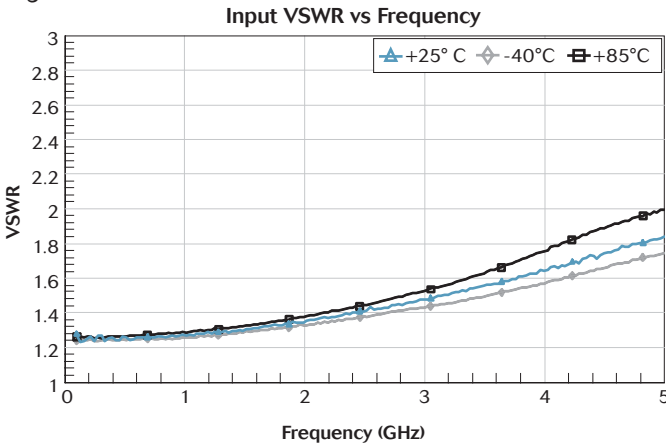


Figure 4.

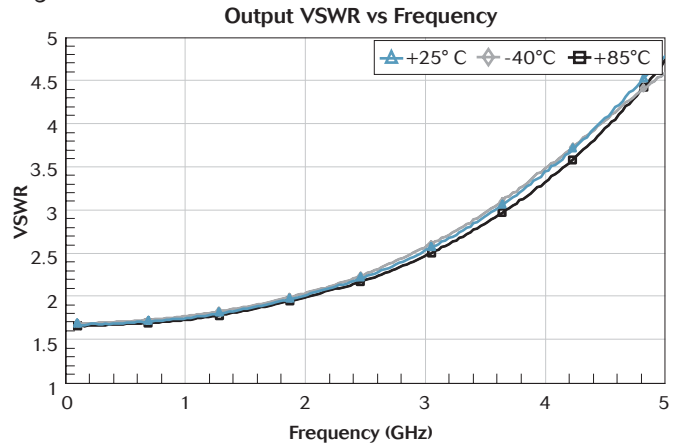


Figure 5.

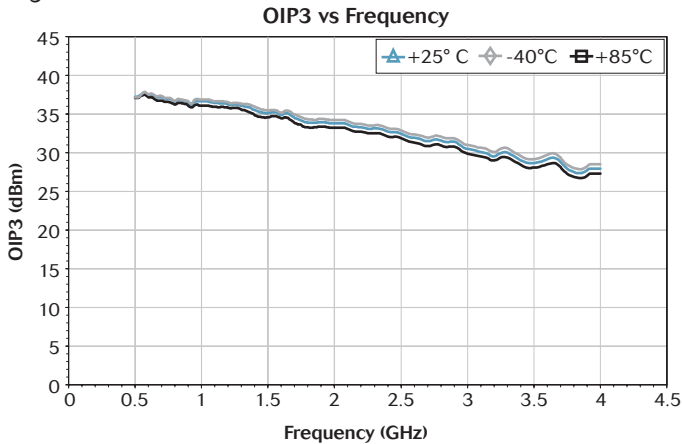
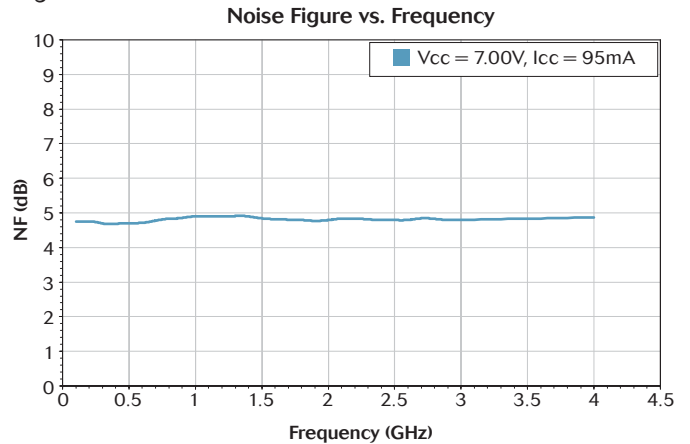


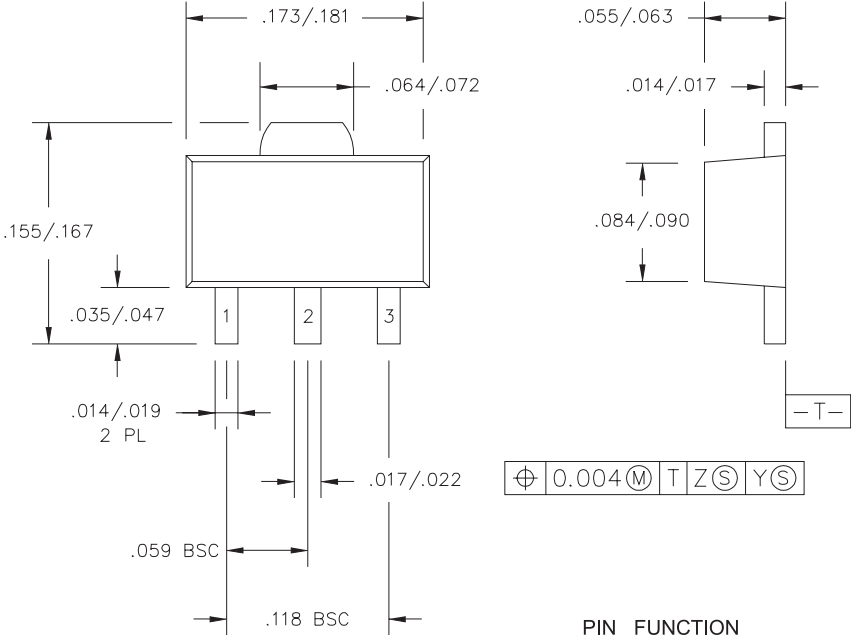
Figure 6.



# MMA710X DC to 3 GHz Amplifier



## SOT89 Outline Dimensions:

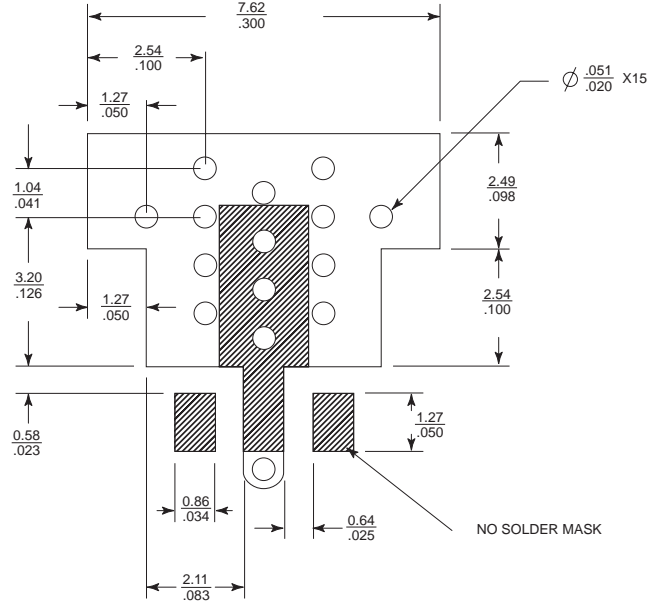


**PIN FUNCTION**

- 1 INPUT
- 2 GROUND
- 3 OUTPUT

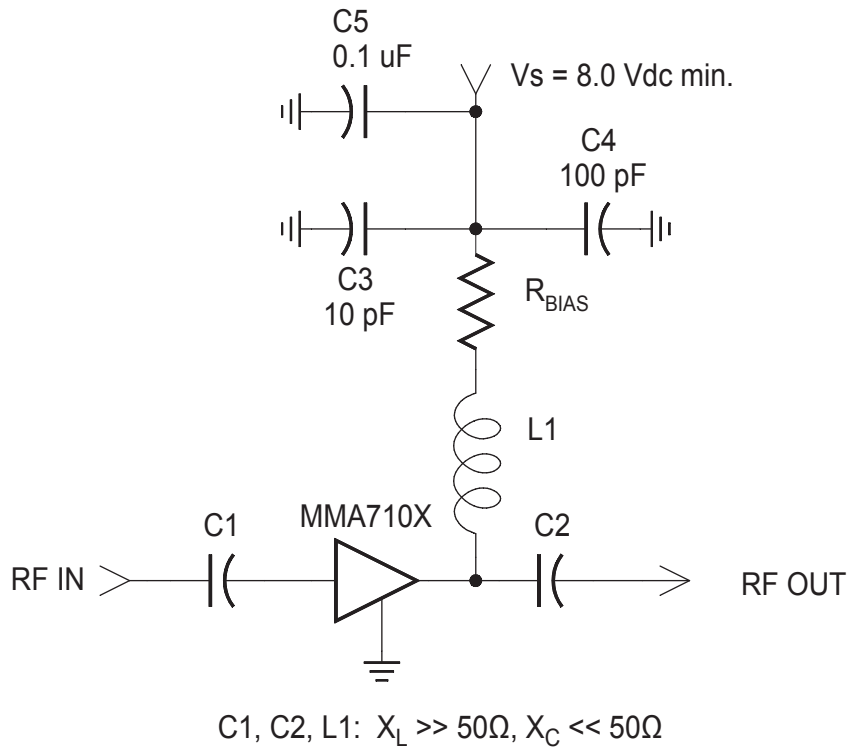
ALL DIMENSIONS  $\pm 0.003$  INCH  
0.07 MM

## Recommended PCB Layout:



ALL DIMENSIONS  $\pm 0.001$  INCH  
0.02 MM

### Application Circuit:



$R_{BIAS}$  vs.  $V_S$

$V_S$ (V)	8.0	10.0	12.0	15.0
$R_{BIAS}$ ( $\Omega$ )	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.