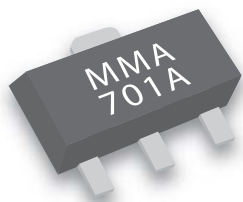


MMA701A

+24 dBm InGaP HBT Amplifier



SOT89 OUTLINE

Description:

The MMA701A is designed for common emitter, class A amplifier applications from 100 MHz to 2.5 GHz. Best performance is obtained over bandwidths not exceeding 10%.

Features:

- Lead Free and RoHS Compliant
- 92 dB Dynamic Range
- Operates Up to 7.0 V Vce
- Industry Standard SOT89 Package

RF / DC Specifications:

Parameter	Symbol	Condition	1960 MHz			2140 MHz			Units
			MIN	TYP	MAX	MIN	TYP	MAX	
Gain	SSG	1, 2	13.0	14.5		13.0	14.0		dB
Output Power	P_{1dB}	1, 2	+24	+25		+24	+25		dBm
3 rd Order IP	OIP3	1, 2, 3	+39	+42		+39	+42		dBm
Input Standing Wave Ratio	VSWR	1, 2		1.3	2.0		1.5	2.0	
Output Standing Wave Ratio	VSWR	1, 2		1.3	2.0		1.6	2.0	
Noise Figure	NF	1, 2		3.5	5.0		4.0	5.0	dB
Current Transfer Ratio	h_{FE}	2	60 Min			80 Typ			

- NOTES:
1. All measurements performed in evaluation boards.
 2. $V_{CE} = 5.0$ V, $I_C = 130$ mA.
 3. IP3: Power output per tone = +12dBm, separation = 1.22 MHz

Absolute Maximum Ratings:

Parameters	Symbol	Limit	Unit
Collector to Emitter Voltage	V_{CE}	+12.0	V
Collector Current	I_C	300	mA
Thermal Resistance	θ_{JC}	70	°C / W
Junction Temperature	T_J	+150	°C
Storage Temperature Range	T_{STG}	-54 to +150	°C

Contact factory for 7 volt performance data.



Typical PCS Band Performance at 5 Volts

Figure 1.

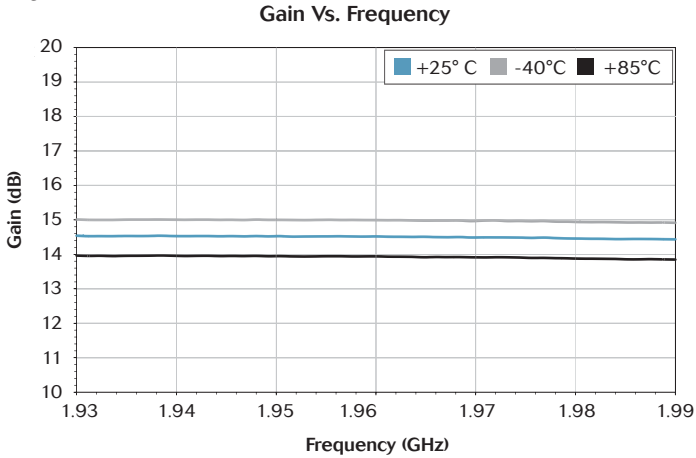


Figure 2.

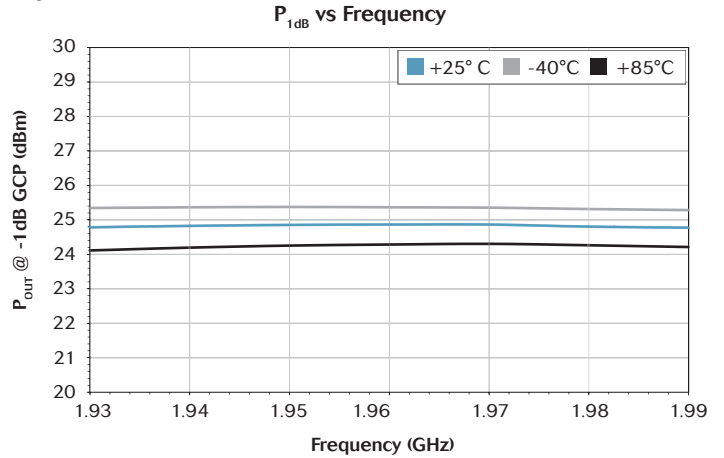


Figure 3.

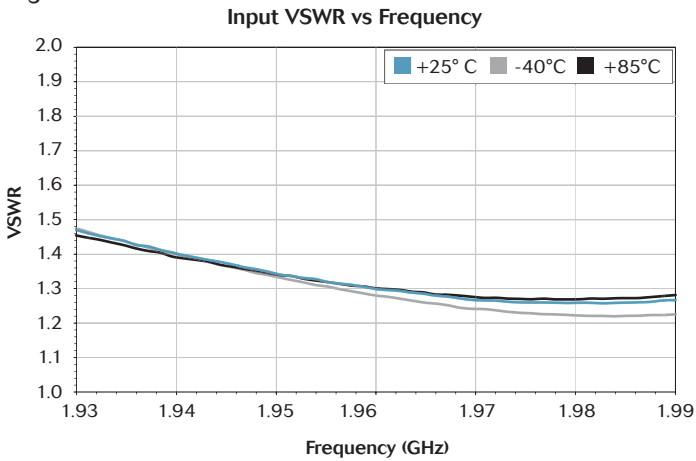


Figure 4.

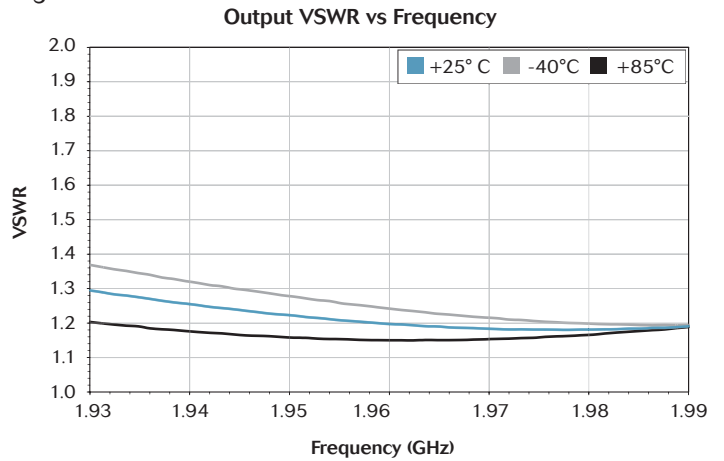


Figure 5.

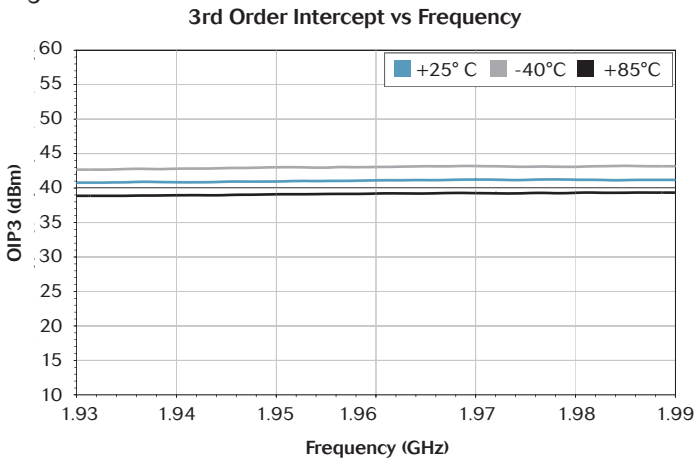
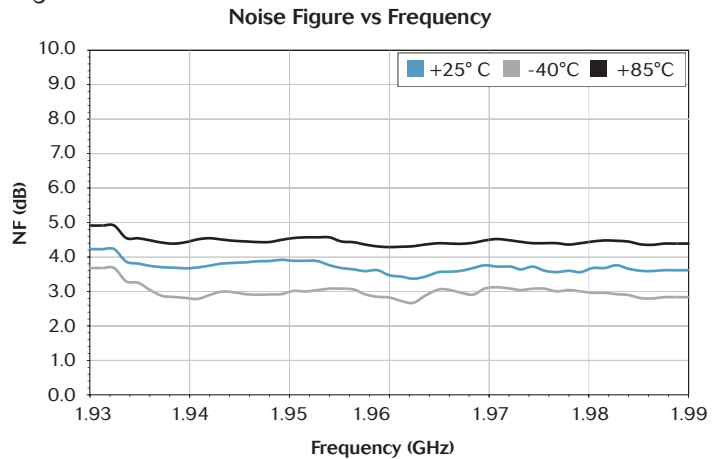


Figure 6.



MMA701A +24 dBm InGaP HBT Amplifier



Typical UMTS Band Performance at 5 Volts:

Figure 7.

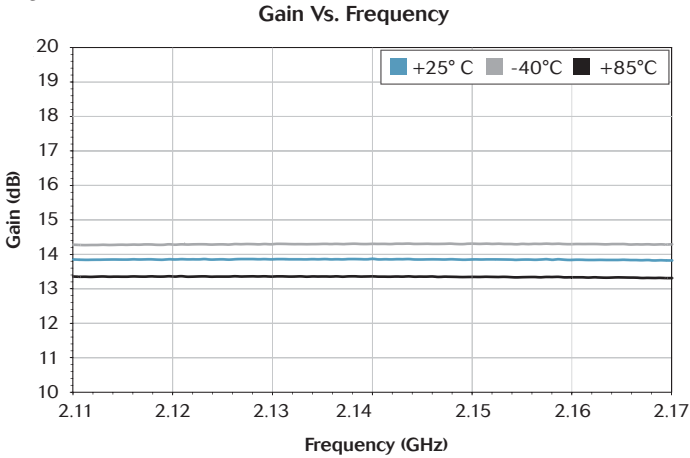


Figure 8.

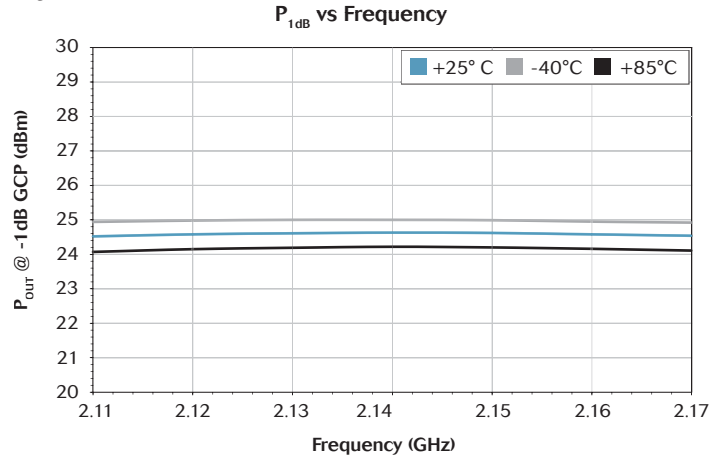


Figure 9.

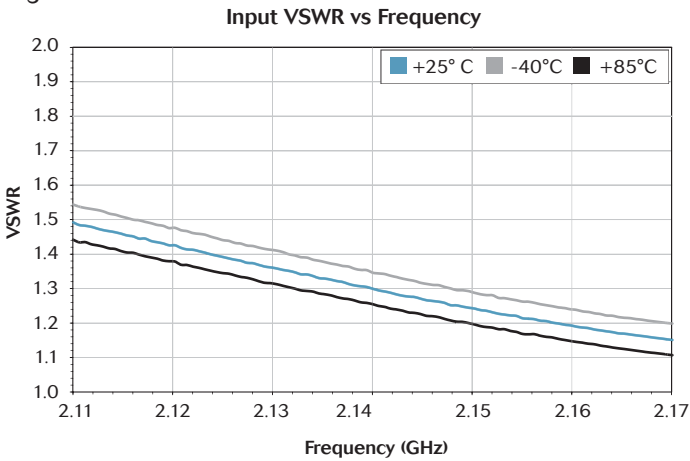


Figure 10.

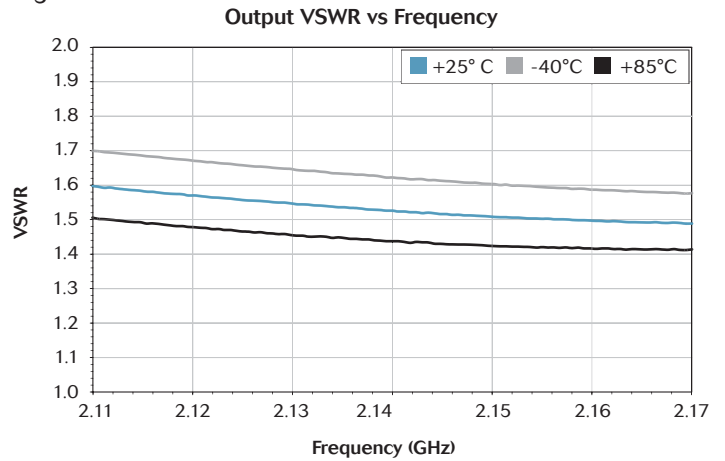


Figure 11.

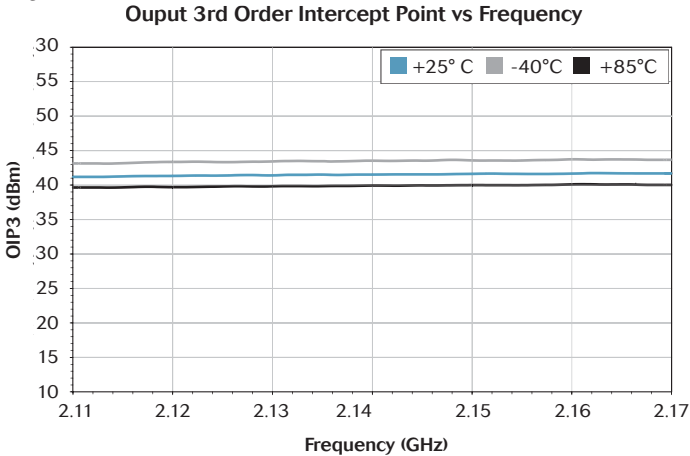
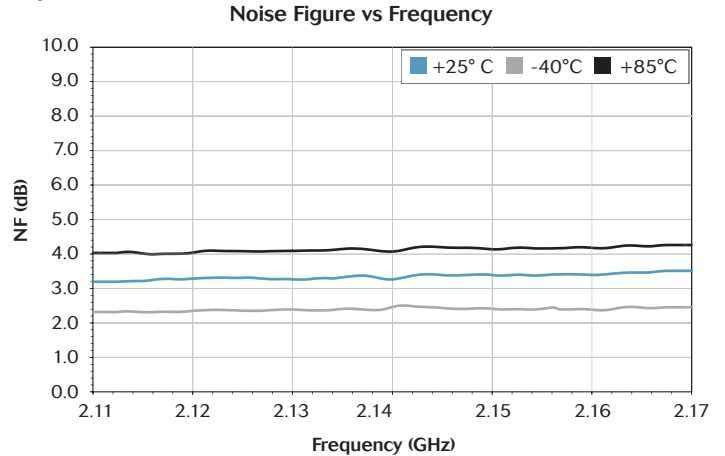


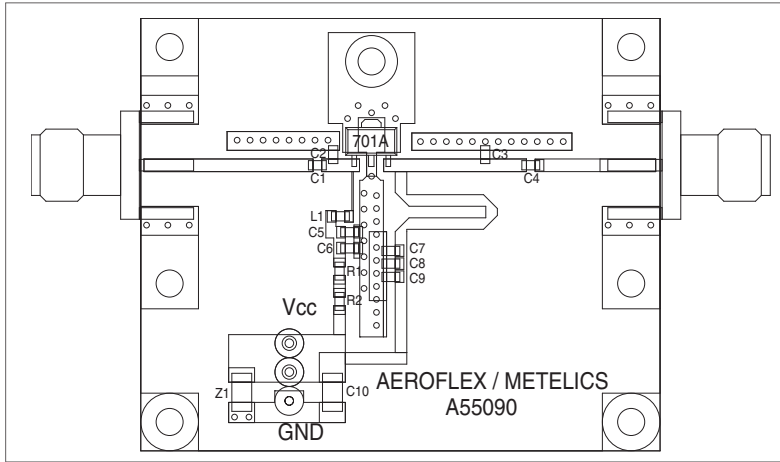
Figure 12.



MMA701A +24 dBm InGaP HBT Amplifier

Evaluation Board:

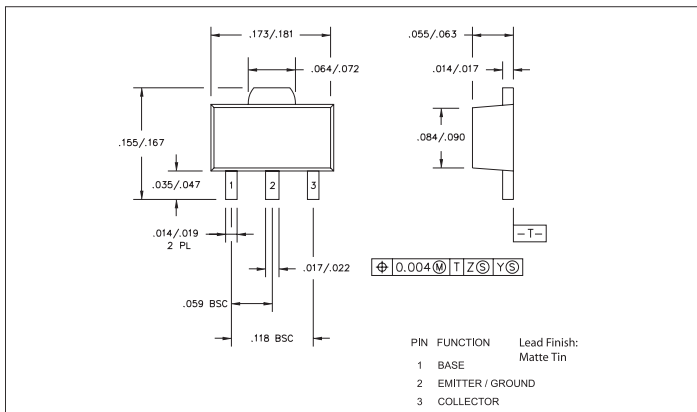
Figure 13.



	PCS	UMTS
C1	1.0 pF	
C2	1.3 pF	0.8 pF
C3	0.5 pF	0.3 pF
C4	12 pF	
C5 C7	33 pF	
C6 C9	0.1 μ F	
C8	220 pF	
C10	4.7 μ F	
L1	RFC	
R1	2.0K Ω	
R2	130 Ω	

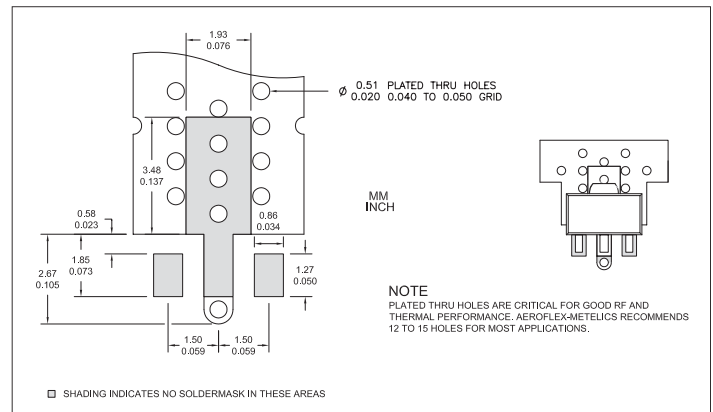
SOT89 Package Outline:

Figure 14.



SOT89 Land Pattern:

Figure 15.



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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.