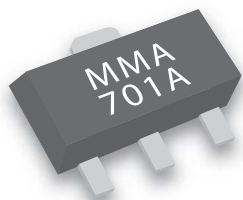


MMA701A

+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.

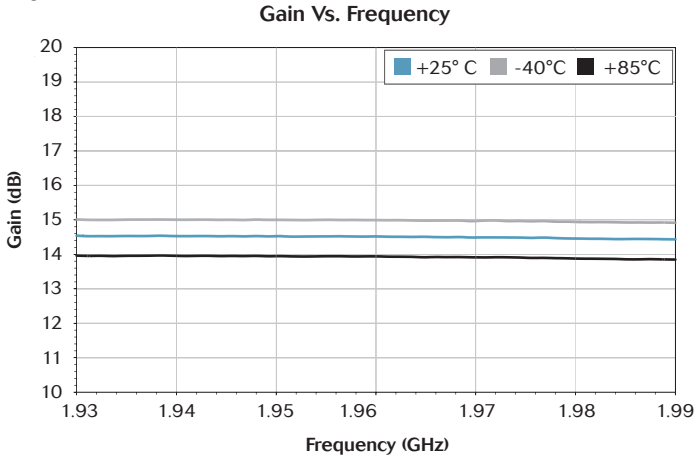


Figure 2.

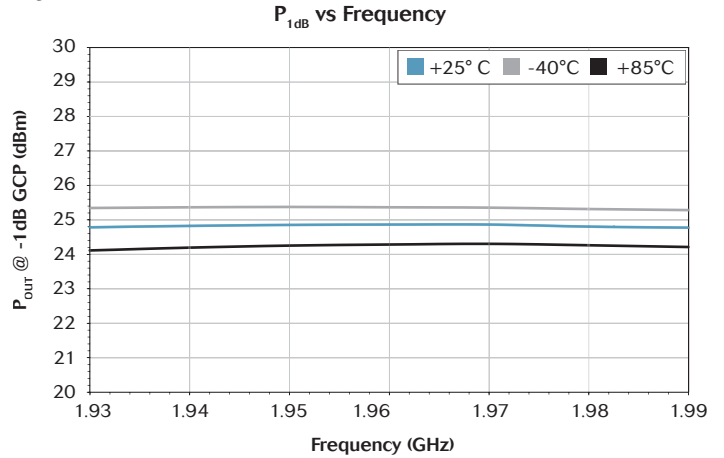


Figure 3.

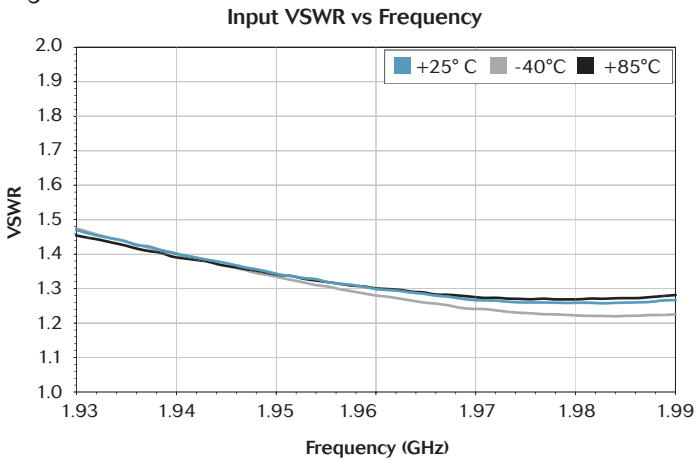


Figure 4.

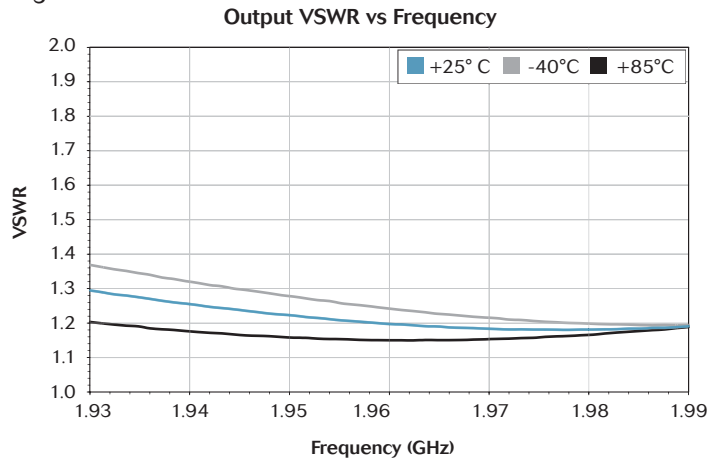


Figure 5.

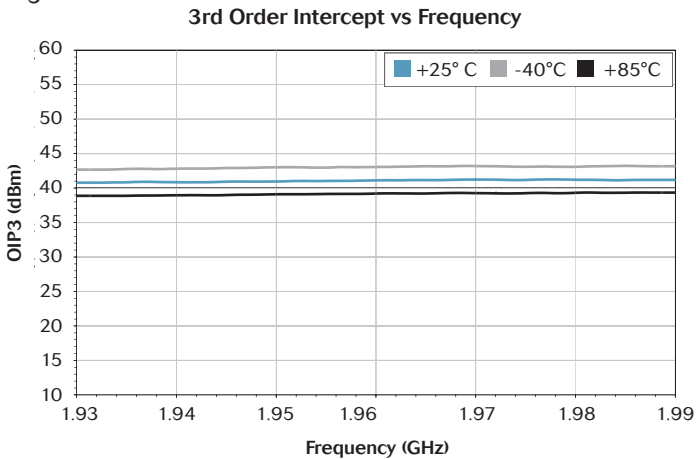
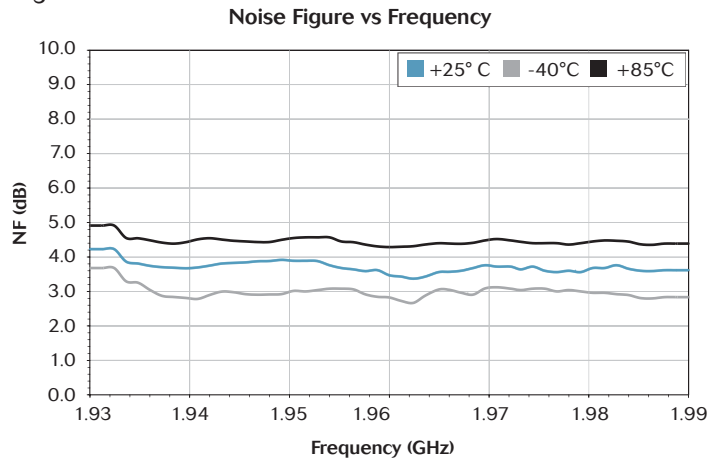


Figure 6.



MMA701A +24 dBm InGaP HBT Amplifier



Typical UMTS Band Performance at 5 Volts:

Figure 7.

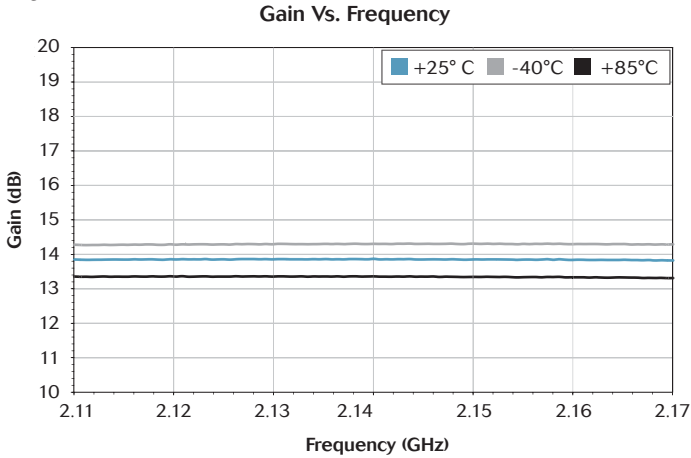


Figure 8.

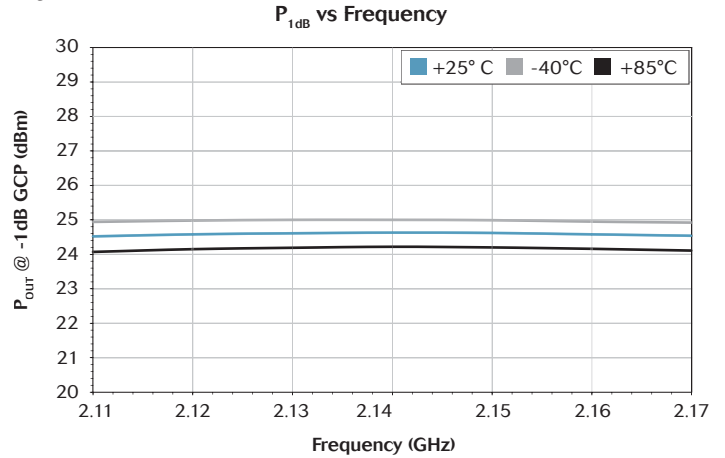


Figure 9.

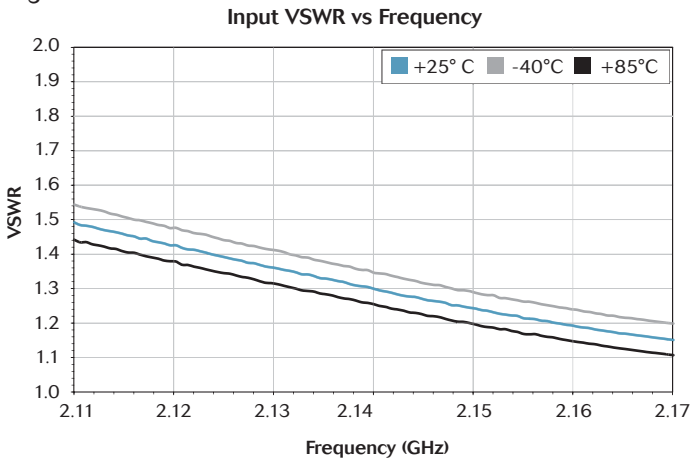


Figure 10.

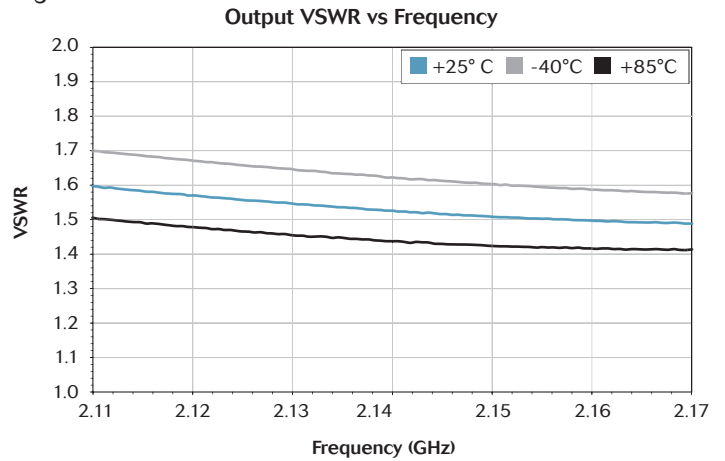


Figure 11.

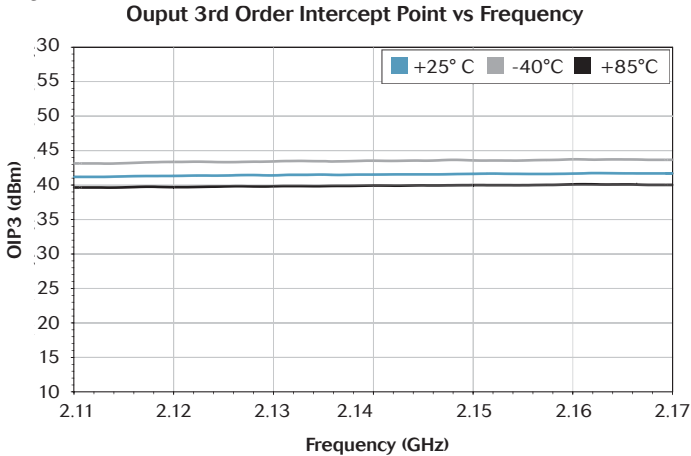
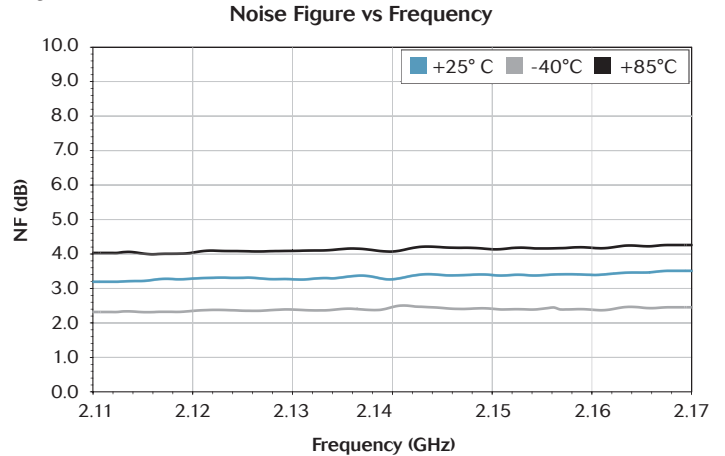


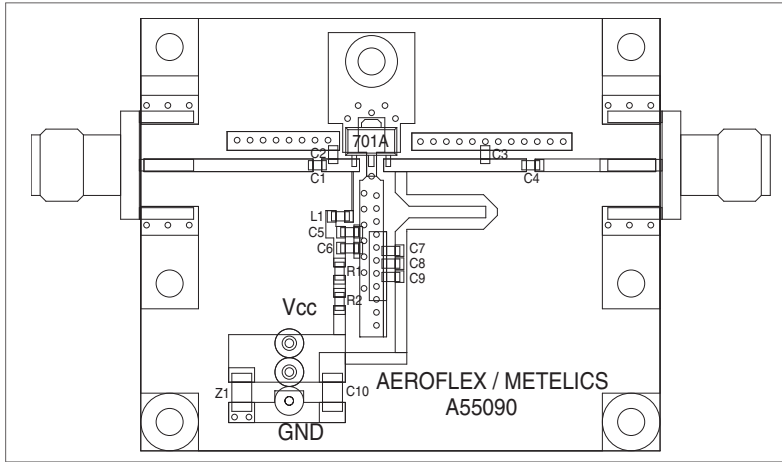
Figure 12.



MMA701A +24 dBm InGaP HBT Amplifier

Evaluation Board:

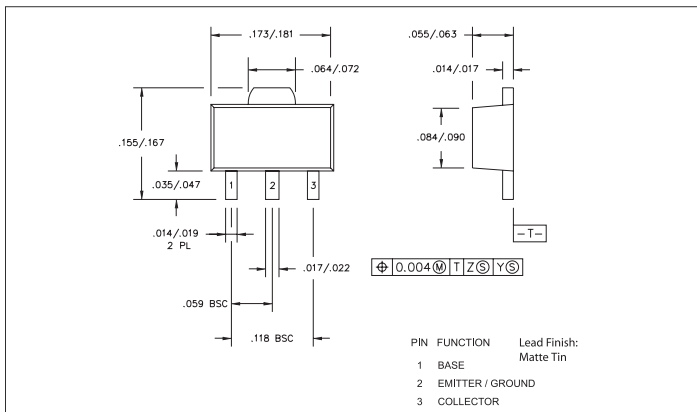
Figure 13.



	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 μF
C8		220 pF
C10		4.7 μF
L1		RFC
R1		2.0K Ω
R2		130 Ω

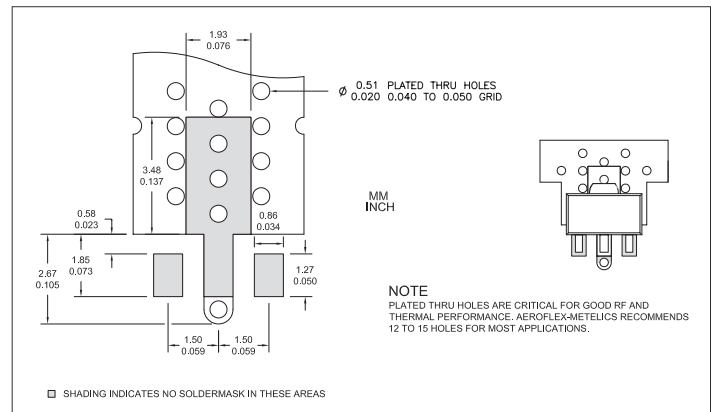
SOT89 Package Outline:

Figure 14.



SOT89 Land Pattern:

Figure 15.



Aeroflex / Metelics
Aeroflex Microelectronic Solutions
975 Stewart Drive, Sunnyvale, CA 94085
TEL: 408-737-8181
Fax: 408-733-7645

www.aeroflex-metelics.com sales@eroflex-metelics.com

Aeroflex / Metelics, Inc. reserves the right to make changes to any products and services herein at any time without notice. Consult Aeroflex or an authorized sales representative to verify that the information in this data sheet is current before using this product. Aeroflex does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by Aeroflex; nor does the purchase, lease, or use of a product or service from Aeroflex convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual rights of Aeroflex or of third parties. Copyright 2003 Aeroflex / Metelics. All rights reserved.



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