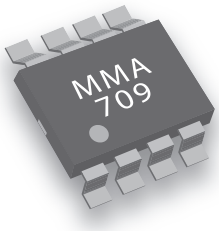
PRELIMINARY

MMA709
2 Watt InGaP HBT Amplifier

AEROFLEX
A passion for performance.





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
3rd 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.

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METELICS

Revision Date: 11/29/04

Typical PCS Band Performance, 3030 Package:

Figure 1.

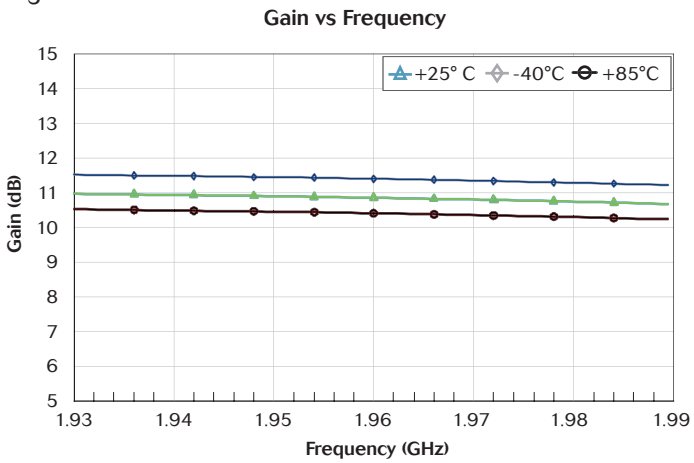


Figure 2.

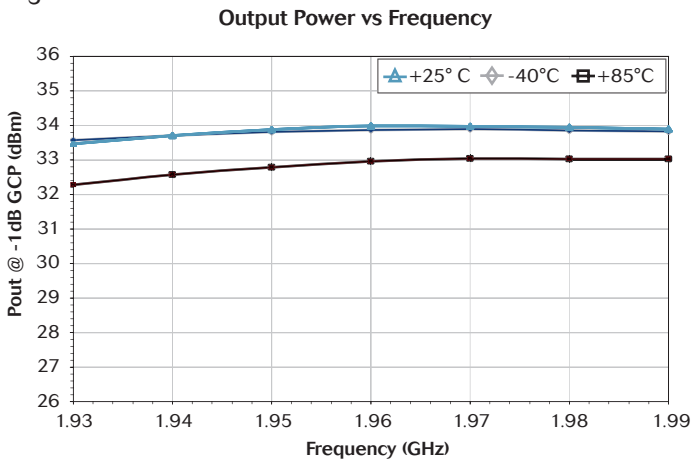


Figure 3.

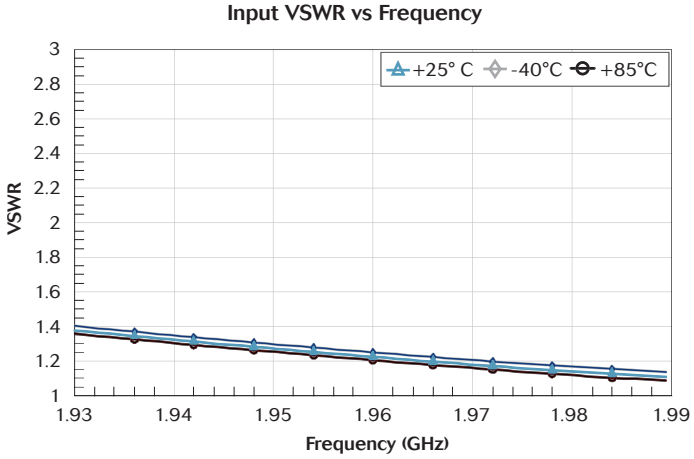
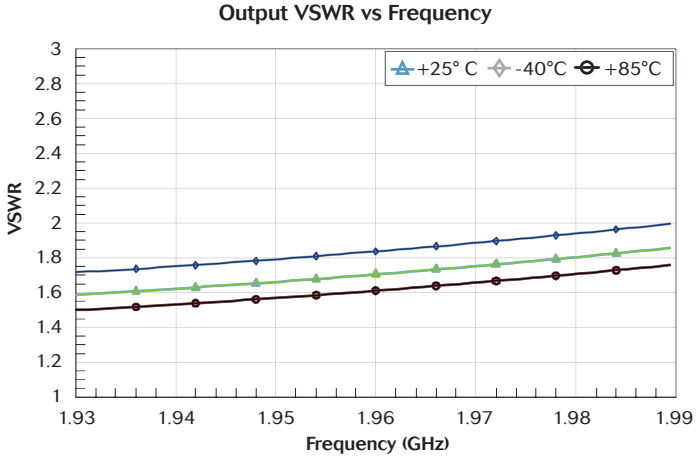


Figure 4.



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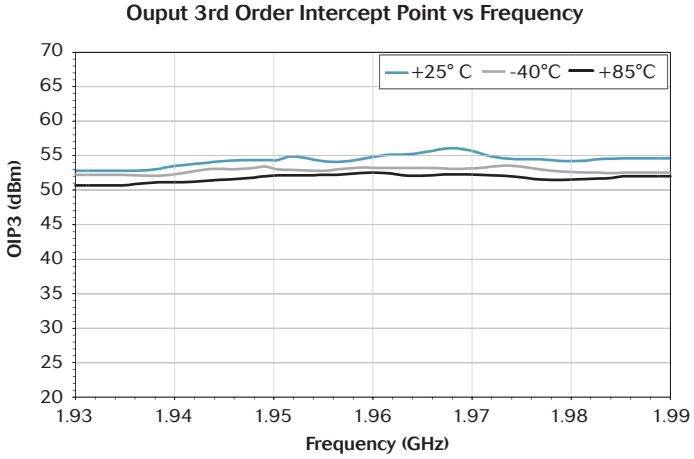

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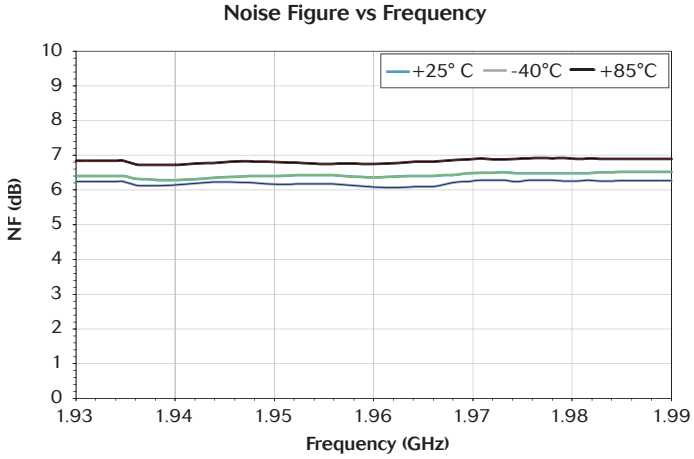
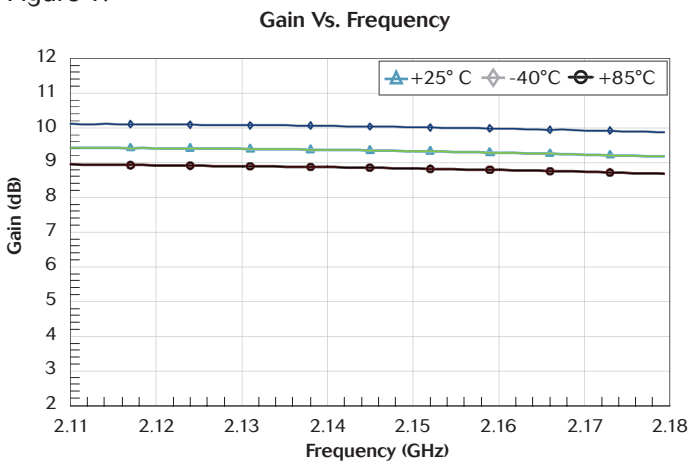


Typical UMTS Band Performance, 3030 Package:

Figure 7.



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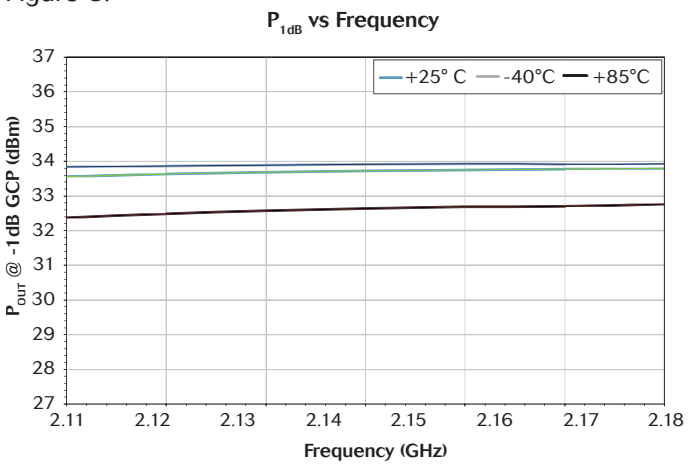

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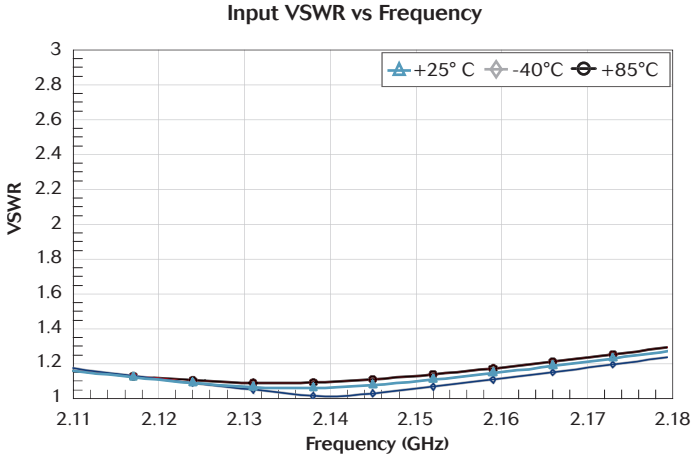

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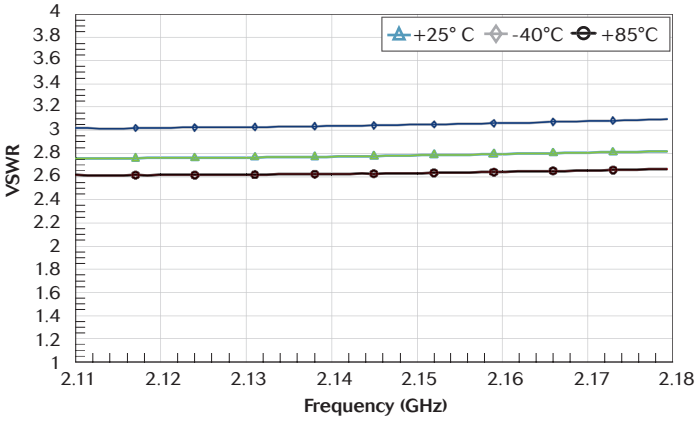
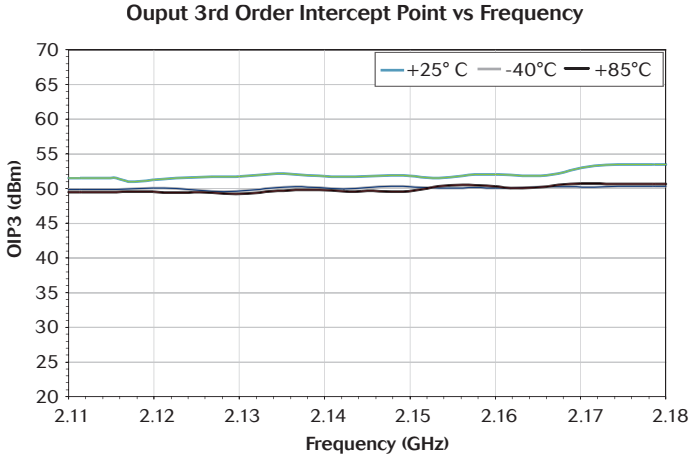


Figure 11.



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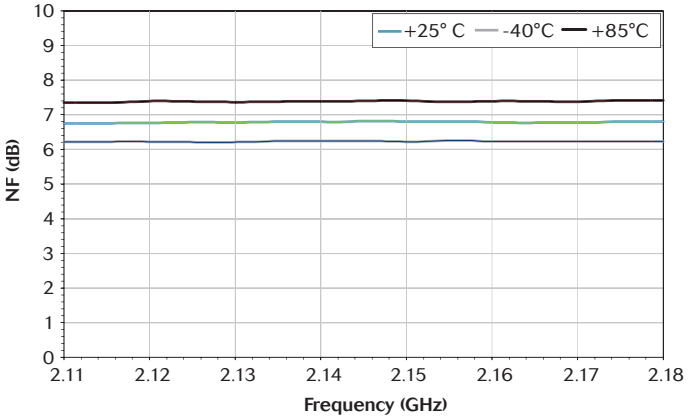

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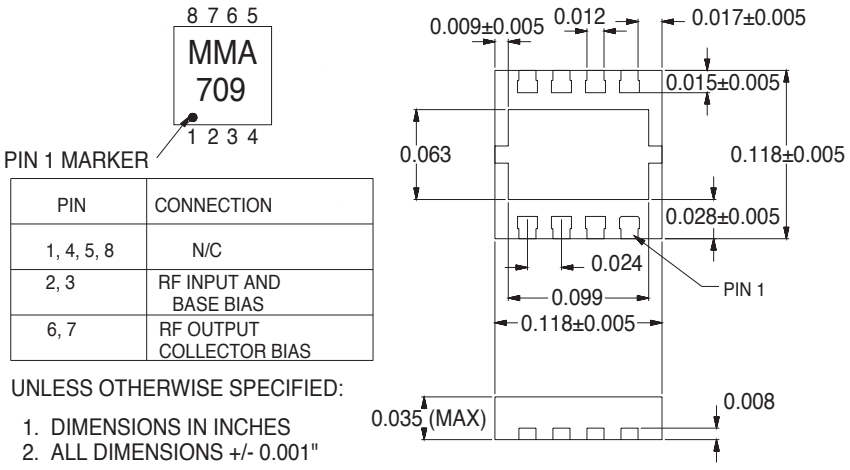
3030 Package Outline:

Figure 13.



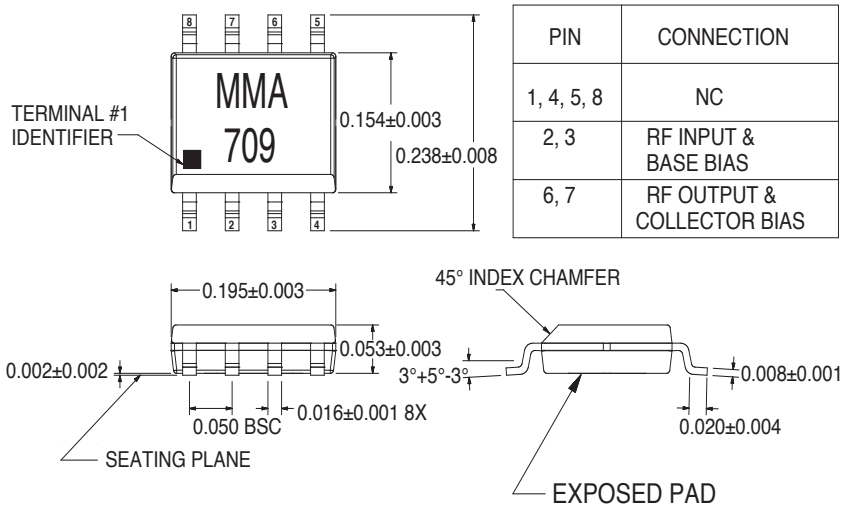
PIN	CONNECTION
1, 4, 5, 8	N/C
2, 3	RF INPUT AND BASE BIAS
6, 7	RF OUTPUT COLLECTOR BIAS

UNLESS OTHERWISE SPECIFIED:

1. DIMENSIONS IN INCHES
2. ALL DIMENSIONS +/- 0.001"

SOIC8 Package Outline:

Figure 14.



PIN	CONNECTION
1, 4, 5, 8	NC
2, 3	RF INPUT & BASE BIAS
6, 7	RF OUTPUT & COLLECTOR BIAS

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