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NEW

MMA707

1 Watt InGaP HBT Amplifier

AEROFLEX
A passion for performance.

FEATURES

- High Output Power: +31 dBm (Typ)
- High 3rd Order IP: +50 dBm (Typ)
- High Dynamic Range: 97 dB (Typ)
- 3mm square QFN plastic package



3mm x 3mm square

DESCRIPTION

The MMA707-3030 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 QFN style that has eight leads. The backside of the package is DC/RF/Thermal ground.

ELECTRICAL CHARACTISTICS (Ambient Temperature, T_A , = +25°C)

Item	Symbol	Condition	1960 MHz			2140 MHz			Unit
			MIN	TYP	MAX	MIN	TYP	MAX	
Gain	SSG	1, 2	11	12		10.5	11.5	13.5	dB
Output Power	P-1dB	1, 2	+29.5	+31		+29.5	+31		dBm
3rd Order IP	IP3	1, 2, 3	+47	+50		+47	+50		dBm
Input VSWR		1, 2			2:1			2:1	
Noise Figure	NF	1, 2		5.8	6.5		6.0	7.0	dB
Spur Free Dynamic Range	SFDR		95	97		95	97		dB
Thermal Resistance	θ_{JC}	2						25	°C/W

NOTES:
1) All measurements from device evaluation boards.
2) Vsupply = 7.00 V, Icc=350 mA.
3) IP3: Power output per tone = +15 dBm, sepertation =1.2288 MHz

ABSOLUTE MAXIMUM RATINGS

Item	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	Icc		576	mA
Operating Junction Temperature	T_J		150	°C

CONTACT THE FACTORY WHEN USING OTHER THAN 7 VOLTS.

AEROFLEX
METELICS

Revision Date: 03/01/04

MMA 707-3030, PCS Band Data

Figure 1.

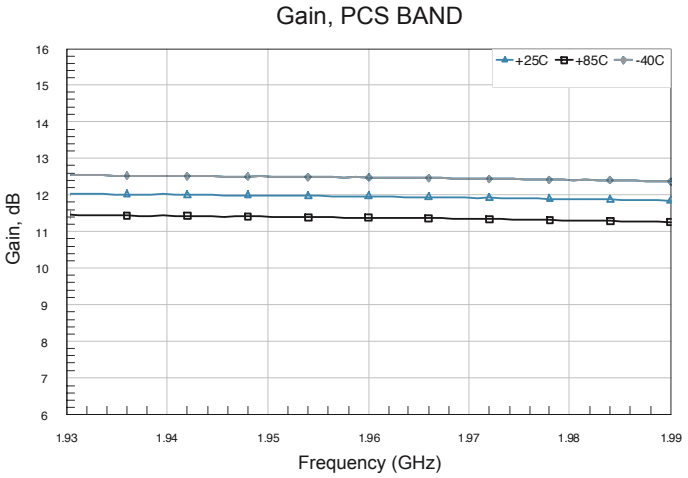


Figure 2.

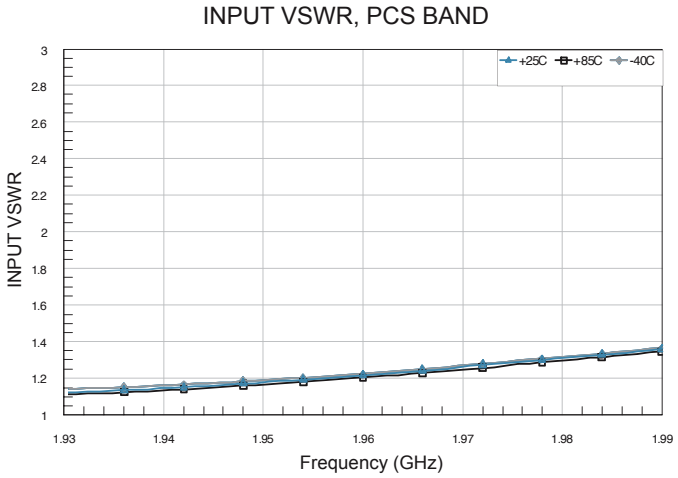


Figure 3.

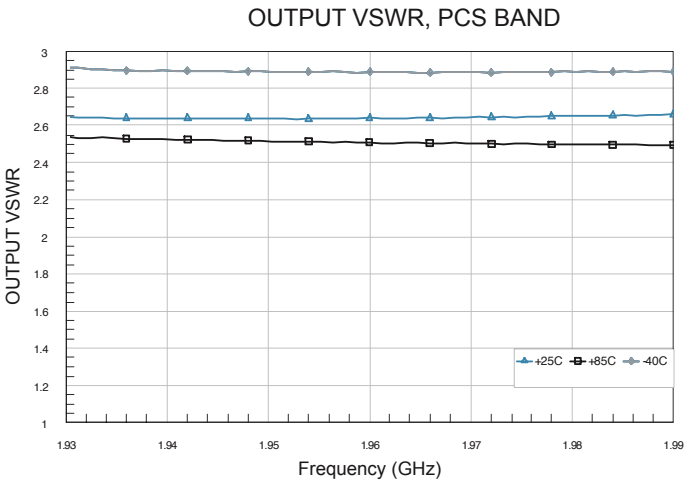
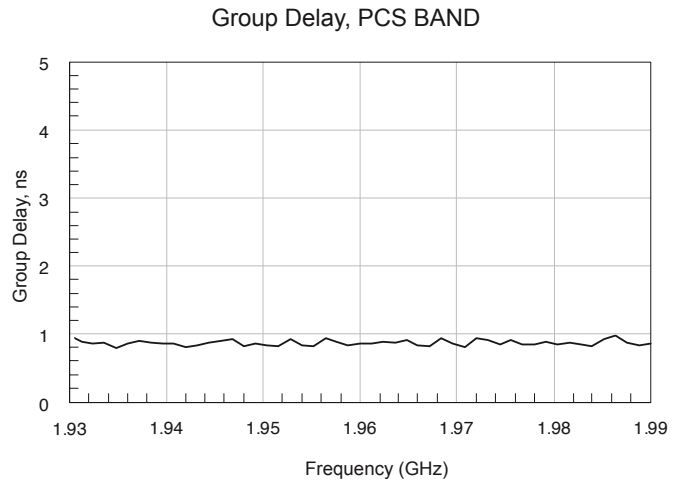


Figure 4.



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MMA 707-3030, PCS Band Data

Figure 5.

Pout, PCS BAND

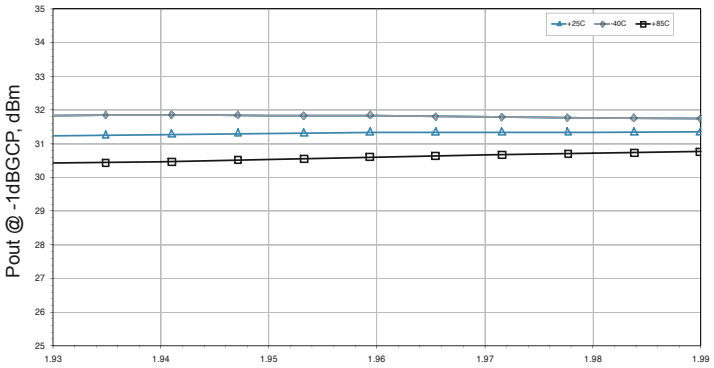


Figure 6.

IP3, PCS BAND

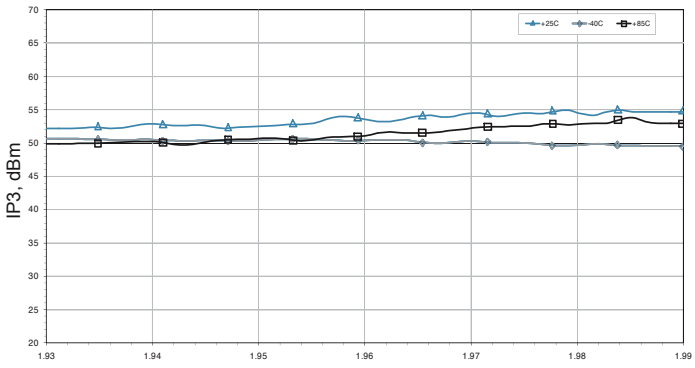


Figure 7.

Noise Figure, PCS BAND

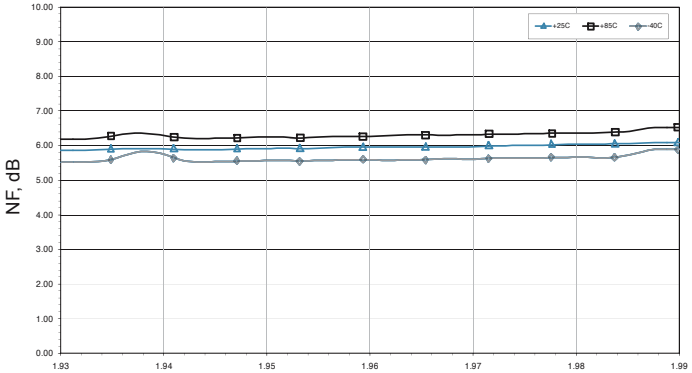
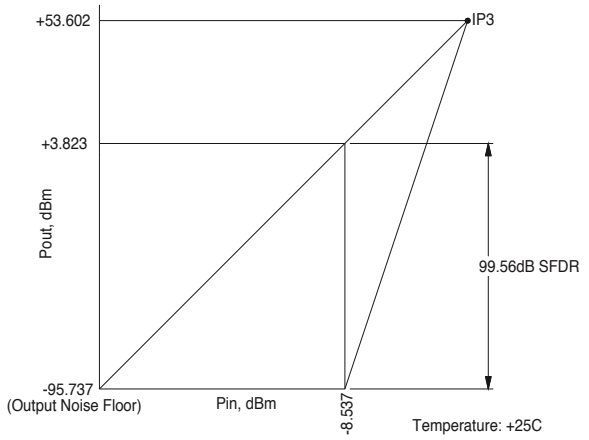


Figure 8.

SFDR, PCS BAND



MMA 707-3030, UMTS Band Data

Figure 9.

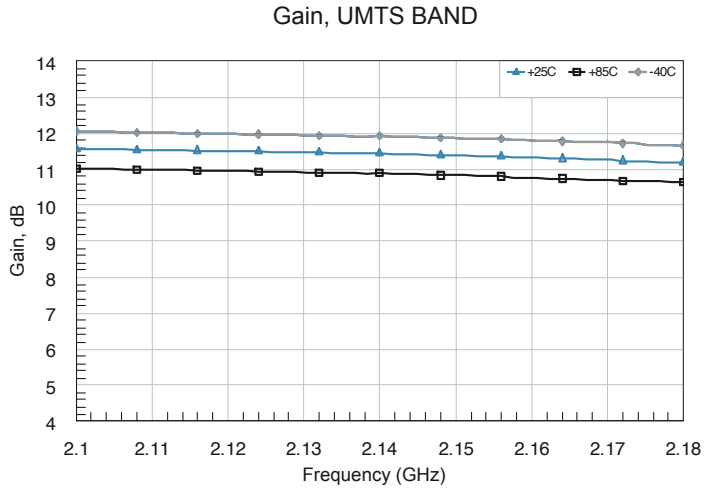


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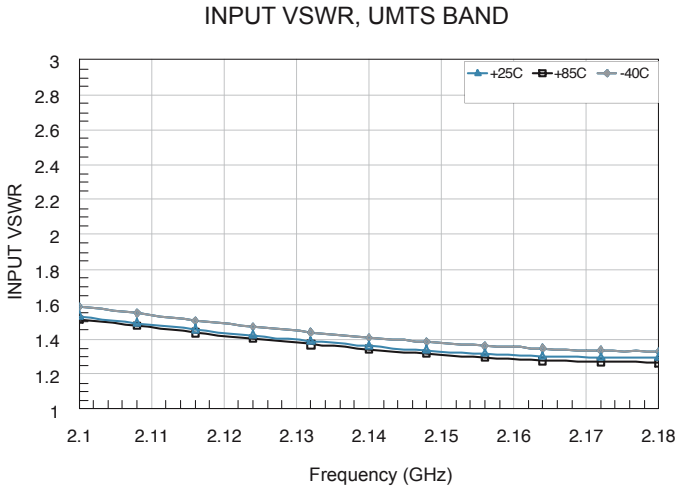


Figure 11.

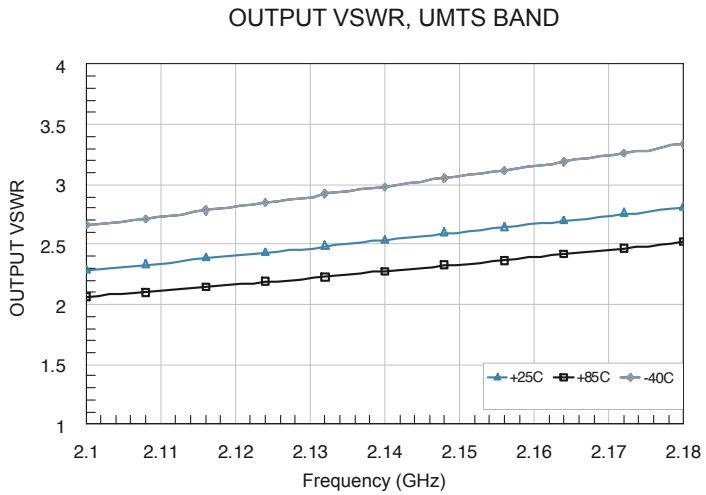
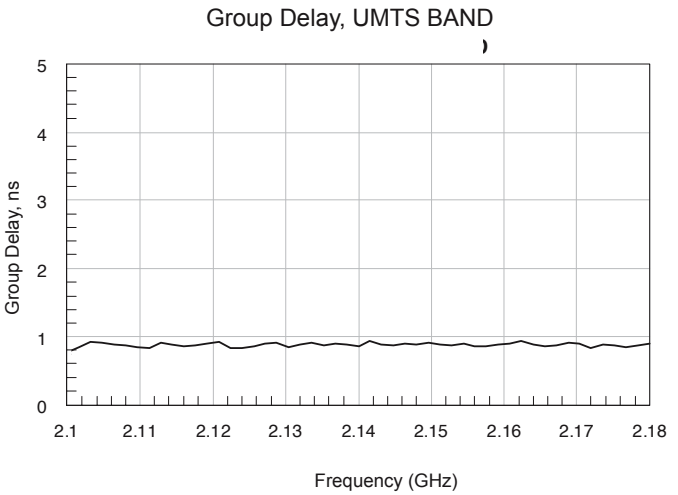


Figure 12.



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MMA 707-3030, UMTS Band Data

Figure 13.

Pout, UMTS BAND

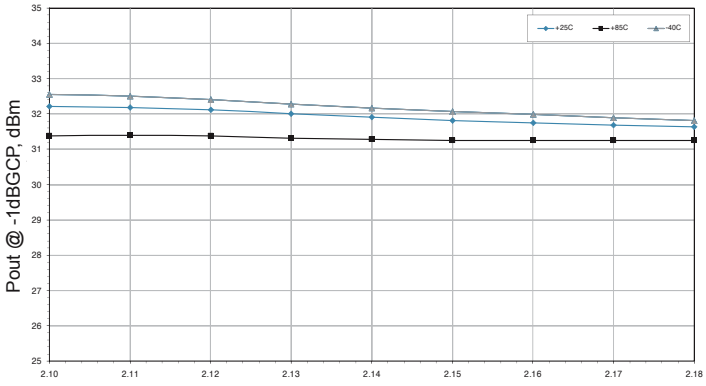


Figure 14.

IP3, UMTS BAND

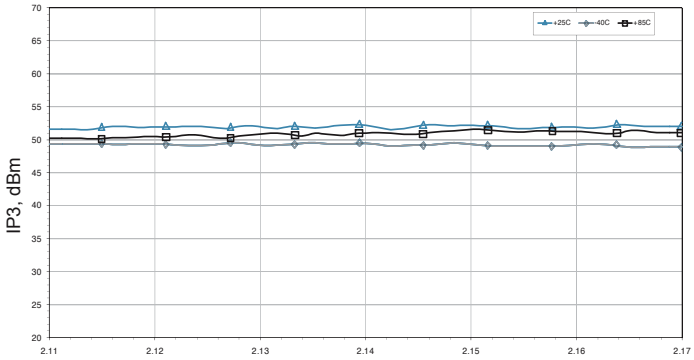


Figure 15.

Noise Figure, UMTS BAND

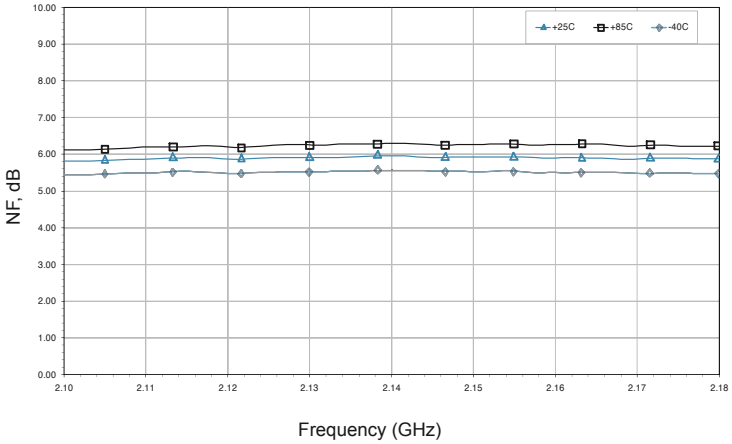
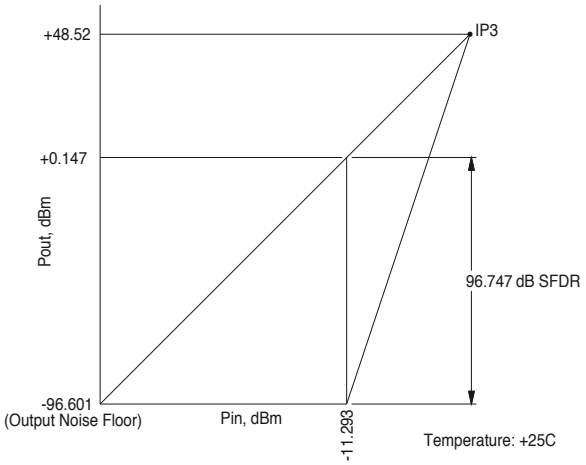


Figure 16.

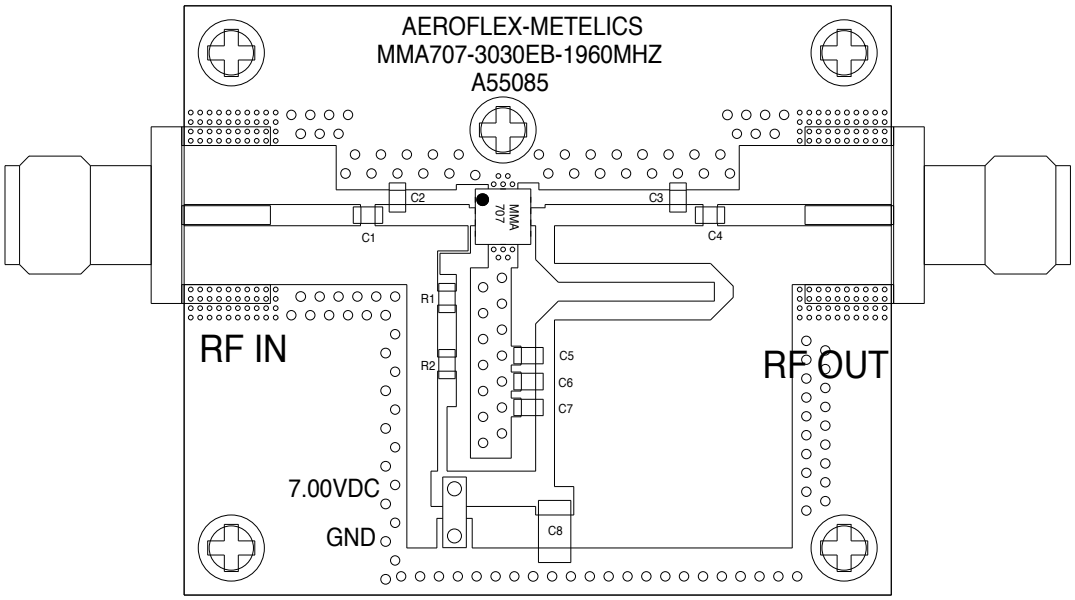
SFDR, UMTS BAND



PCS, UMTS Evaluation Board

Figure 17.

Evaluation Board



Reference	Units	1960MHz PCS	2140MHz UMTS	Manufacturer/Series
C1	pF	3.3	1.5	ATC 600S
C2	pF	2.2	1.5	ATC 600S
C3	pF	0.6	1.0	ATC 600S
C4	pF	1.8	1.8	American Technical Ceramics / ATC600S1R8AT250*T
C5	pF	33	33	American Technical Ceramics / ATC600S330KT250*T
C6	pF	220	220	MuRata / GRM39COG221J050AD
C7	uF	0.1	0.1	MuRata / GRM39Y5V104025AD
C8	uF	4.7	4.7	MuRata / GRM230Y5V475016AL
R1	Ohm	1.1k	1.1k	KOA / RM73B1J112J
R2	Ohm	390	390	KOA / RM73B1J391J

Board Material:

Rogers Corporation RO4003

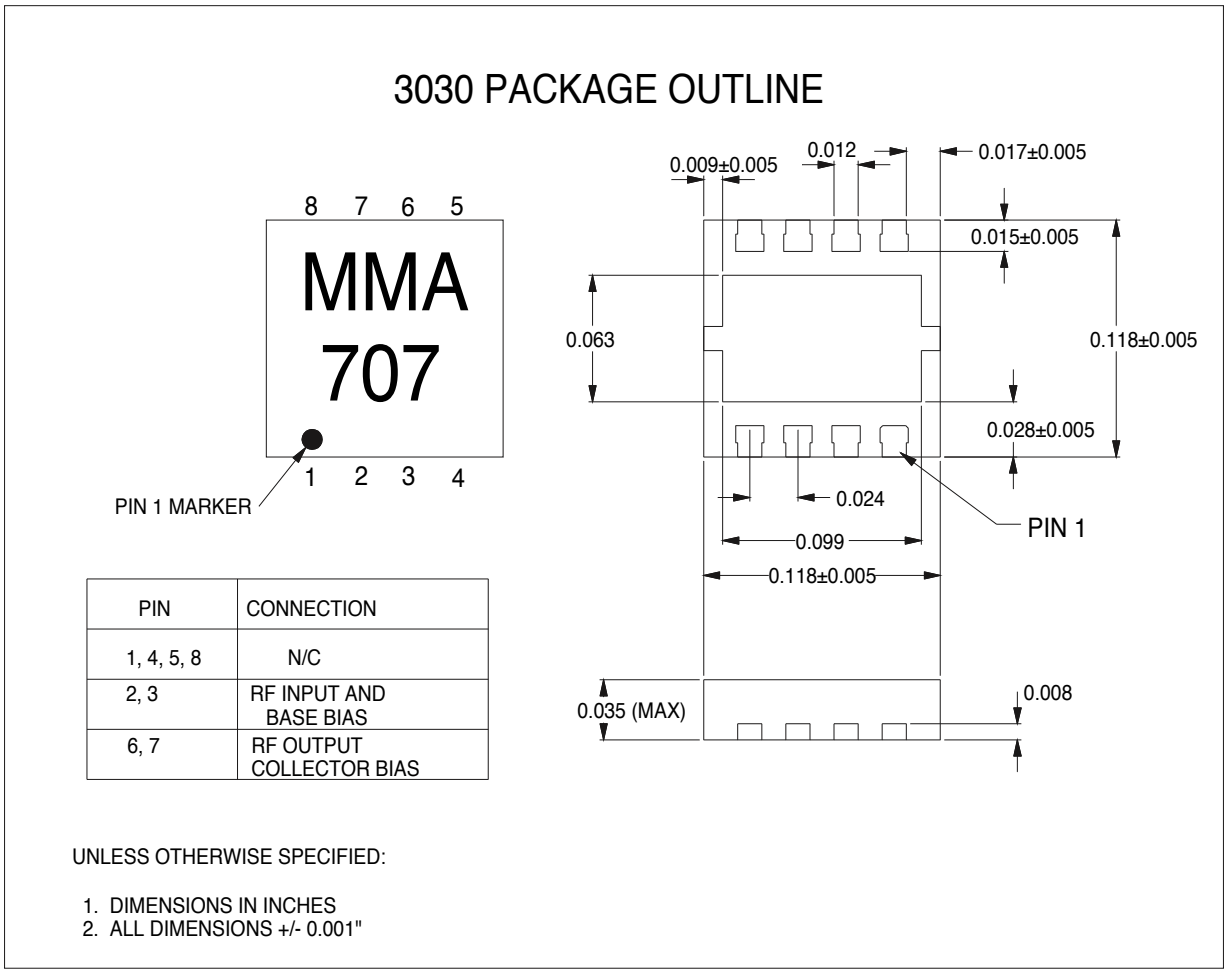
0.020” thick, 1oz Copper both sides.

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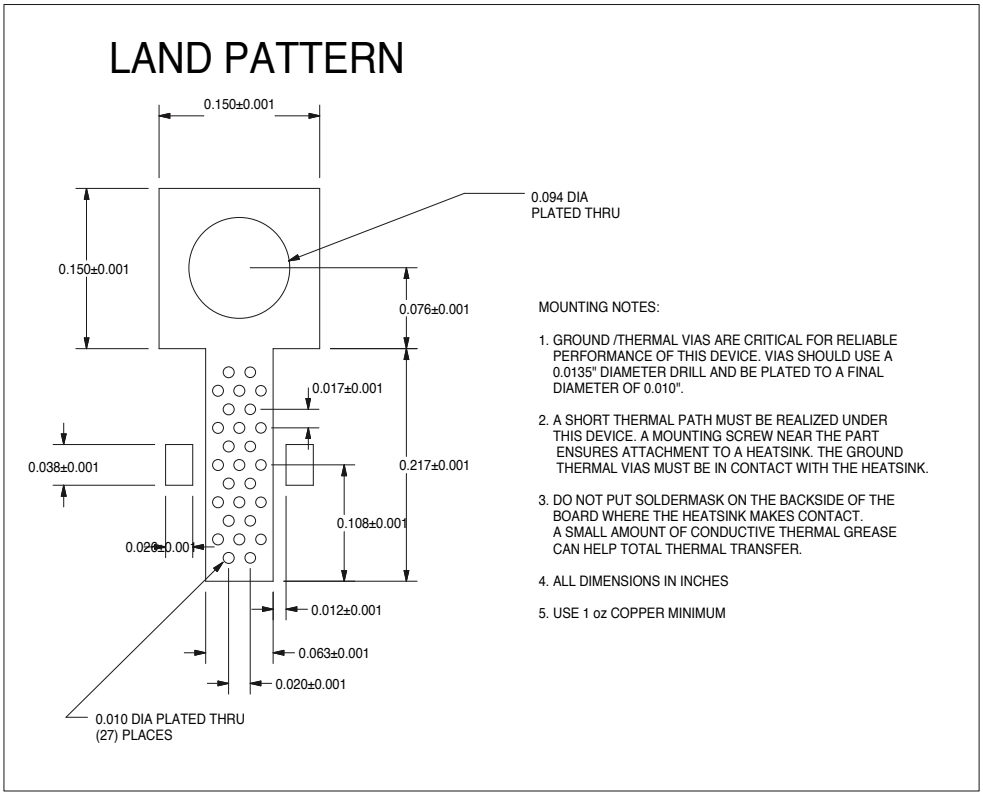
MMA707-3030 Package Outline

Figure 18.



MMA707-3030 Land Pattern

Figure 19.



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