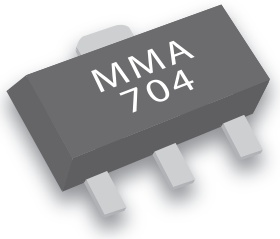
MMA704
DC to 3.7 GHz Amplifier



SOT89 OUTLINE

Description:

The MMA704 is a fully matched amplifier fabricated in Aeroflex / Metelics reliable InGap HBT technology. The economical SOT89 package provides excellent wide-band performance.

Features:

- DC - 3.7 GHz Broadband Gain Block
- ± 0.5 dB Typical Gain Flatness
- 50 Ohms Input/Output Impedances

RF Specifications:

Parameter	Term	Minimum	Typical	Maximum	Units
3dB Bandwidth	BW	DC	- - -	3.7	GHz
Frequency Range	f_O	DC	- - -	1.5	GHz
Gain	G_P	16	17	- - -	dB
Output Power	P_{1dB}	+16	+17	- - -	dBm
Standing Wave Ratio	VSWR	- - -	1.5:1	2.0:1	- - -
3rd Order Intercept Point	IP3	+23	+25	- - -	dBm
Noise Figure	NF	- - -	4	4.5	dB
Device Current	I_C	42	48	55	mA

NOTES:
1. T_A = +25 °C.
2. V_S = 6.0 Vdc, R_{BIAS} = 22 Ω
3. IP3 measured with two tones offset 10 MHz at 0 dBm per tone.

Absolute Maximum Ratings:

Parameters	Rating
Device Current (I_C)	80 mA
RF Input Power, continuous	+10 dBm
Operating Temperature	-40 to +85 °C
Storage Temperature	-55 to +125 °C
Thermal Resistance (θ_{JC})	125 °C/W

METELICS

Revision Date: 09/16/04

Typical RF Performance:

Figure 1.

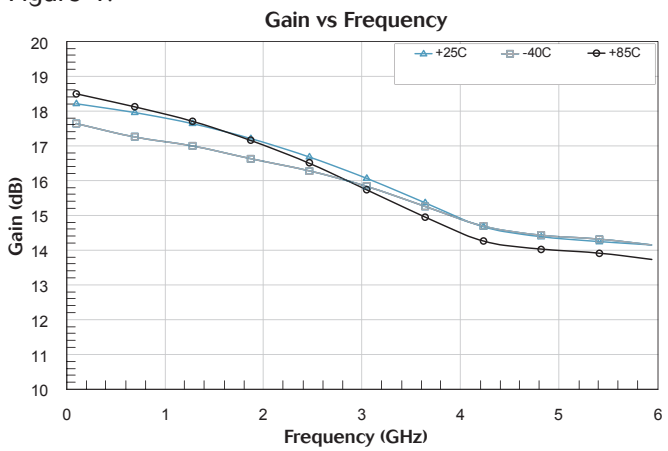


Figure 2.

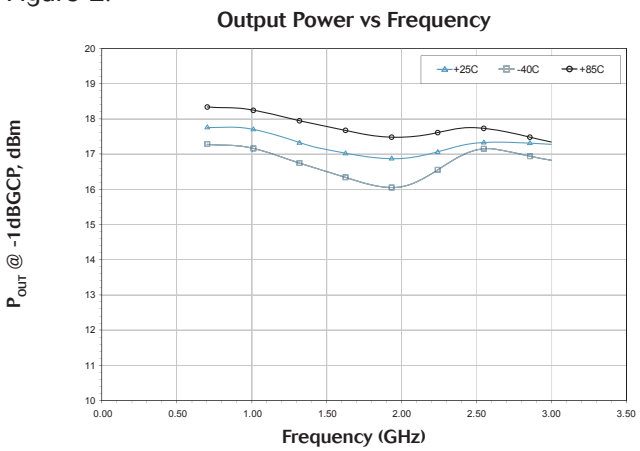


Figure 3.

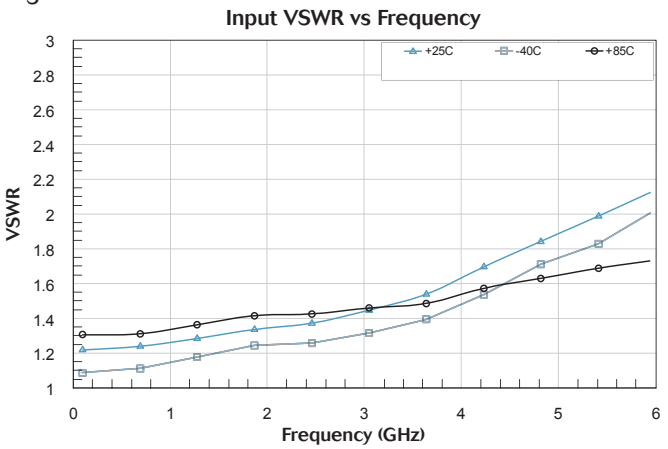


Figure 4.

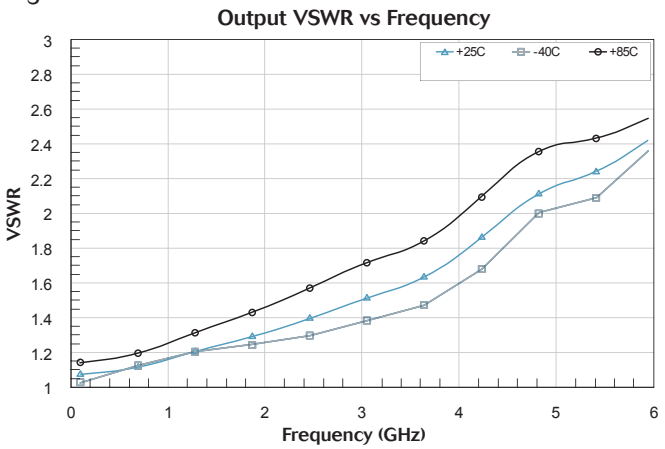


Figure 5.

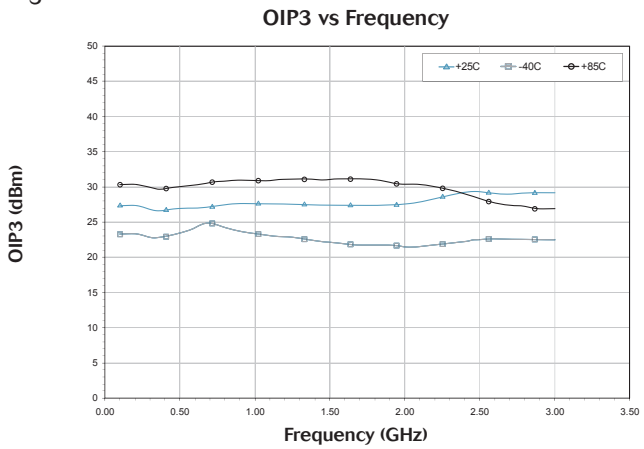
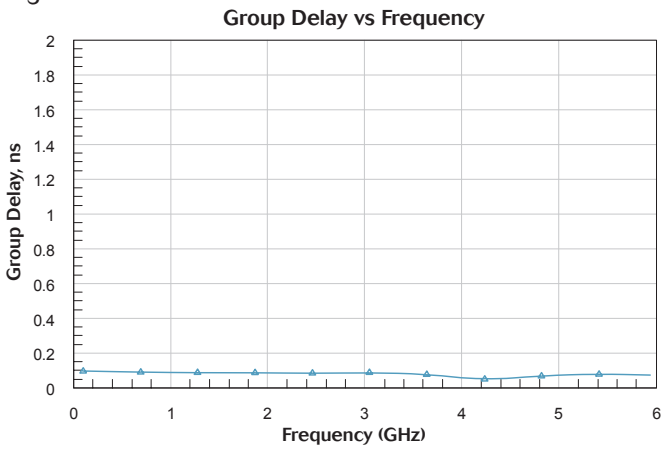
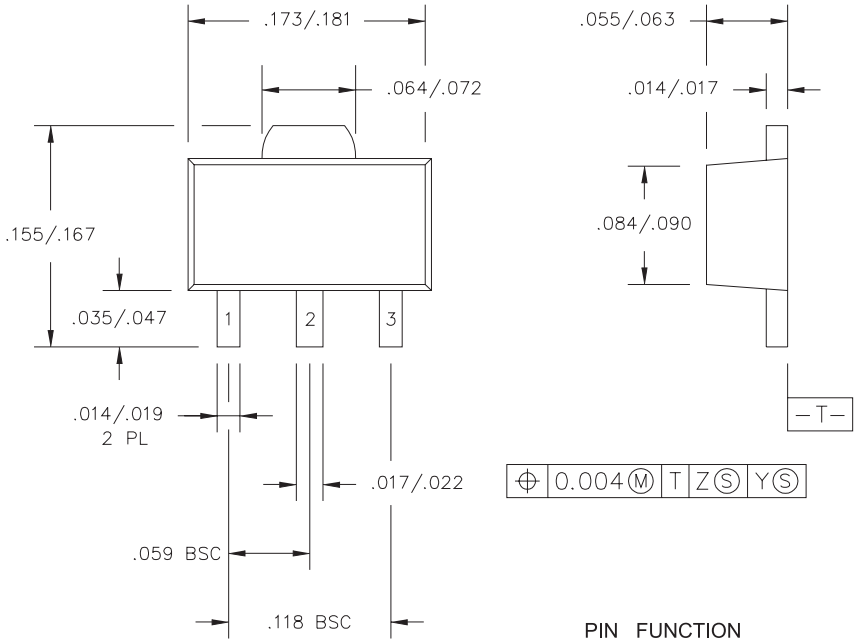


Figure 6.



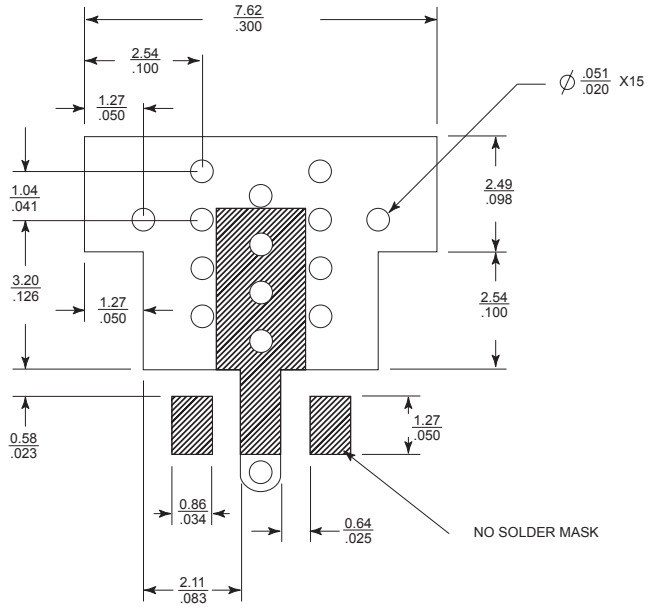
SOT89 Outline Dimensions:



ALL DIMENSIONS ±0.003 INCH / 0.07 MM

PIN	FUNCTION
1	INPUT
2	OUTPUT
3	GROUND

Recommended PCB Layout:



ALL DIMENSIONS ±0.001 INCH / 0.02 MM

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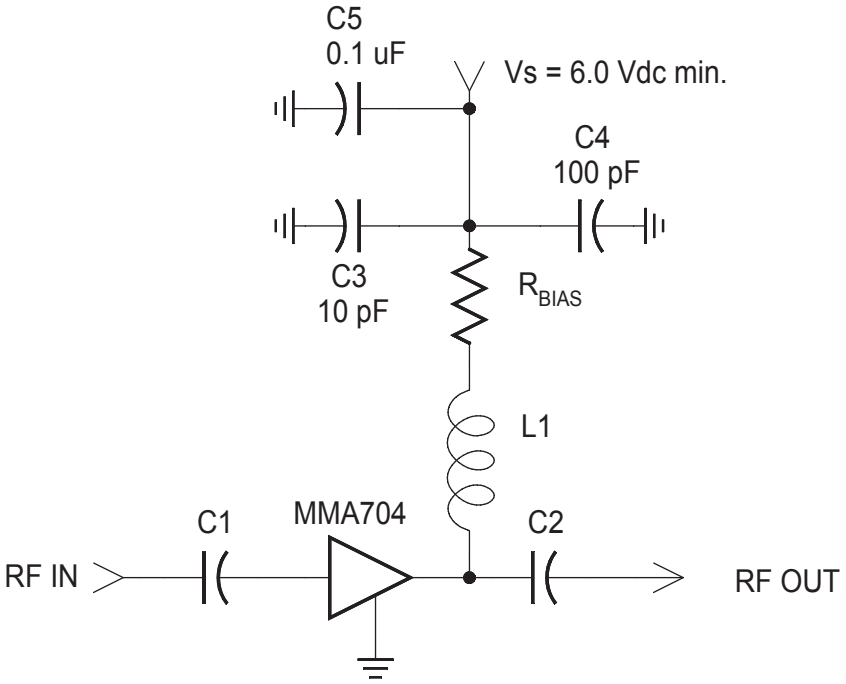
Application Circuit:



C1, C2, L1: $X_L >> 50\Omega$, $X_C << 50\Omega$

R_{BIAS} vs. V_S

V_S (V)	6.0	8.0	10.0	12.0	15.0
R_{BIAS} (Ω)	22	43	86	130	200
Power Dissipation (W)	0.10	0.2	0.5	1	2

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