



www.mwtinc.com

MPS-003001-84

20 to 3000 MHz Variable Gain Amplifier

Email: info@mwtinc.com

Features

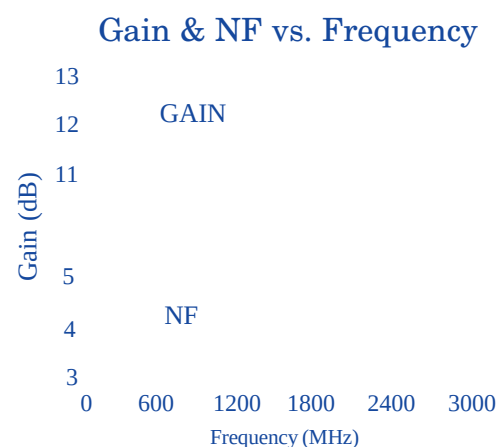
- High IP3 +34 dBm Typical
- High P1dB +21 dBm Typical
- +5 Volt Bias
- Variable Gain
- 30% High Power Added Efficiency

The MPS-003001-84 is an internally matched GaAs FET amplifier in a surface mount ceramic package. It is ideal for digital communications applications where excellent gain linearity and high efficiency at 5 Volt bias is required. The device may be directly soldered to a 50 ohm microstrip circuit without additional matching elements. Independent biasing of the gate allows external gain control or the amplifier may be operated with no gate bias.

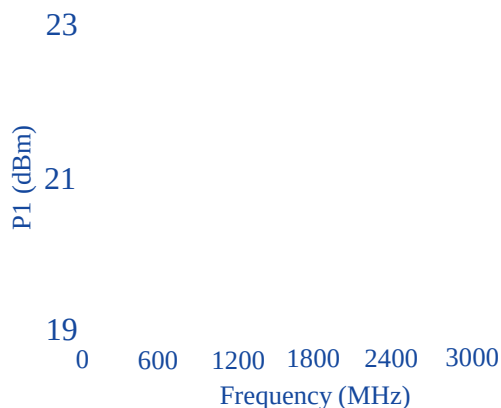
Specifications

- Electrical at 25°C, Vdd= 5.0 V, Zo= 50 Ω

Symbol	Parameter	Min.	Typical	Max	Unit	Gain & NF vs. Frequency				
Freq	Frequency Range	20		3000	MHz					
SSG	Small Signal Gain	10.5	11.5		dB					
P1dB	P out at 1 dB Compression	19.0	21.0		dBm					
IP3	Third-order Intercept		34.0		dBm					
VSWR	Input VSWR		1.6:1	2.5:1						
ΔGOF	Gain Variation over Freq.		+/- 0.8	+/- 1.2	dB					
ΔGOT	Gain Variation over Temp.		-0.008		dB/°C					
I _{dd}	DC Current		90	160	mA					
PAE	Power Added Efficiency		30		%					
NF	Noise Figure	20 to 300 MHz	7.0		dB					
		300 to 3,000 MHz	4.0		dB					



Power Output at P1dB



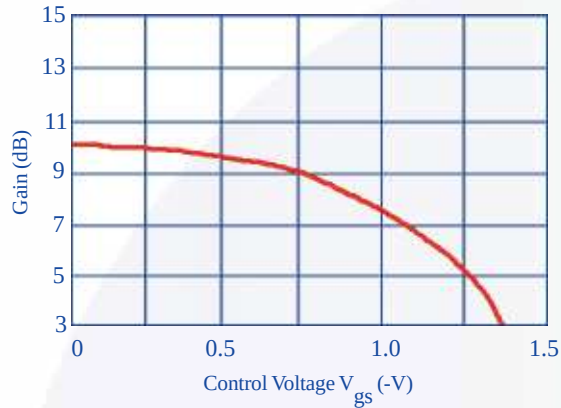
Absolute Maximum Ratings

Maximum Bias Voltage	6.0 V
Maximum Continuous RF Input Power	200 mW
Maximum Peak Input Power	300mW
Maximum Case Operating Temperature	+85°C
Maximum Storage Temperature	-65°C to +150°C

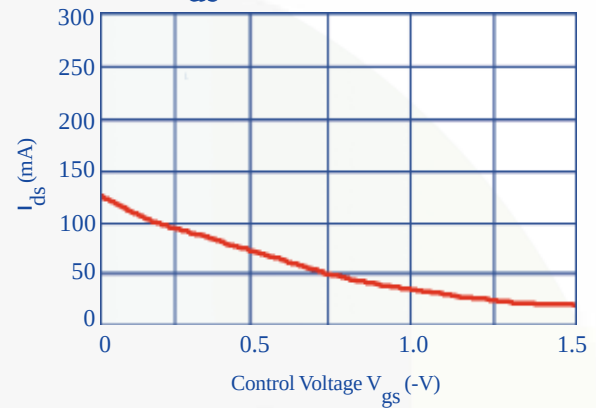
4268 Solar Way · Fremont · California 94538 · Phone: (510) 651-6700 · Fax: (510) 651-2208

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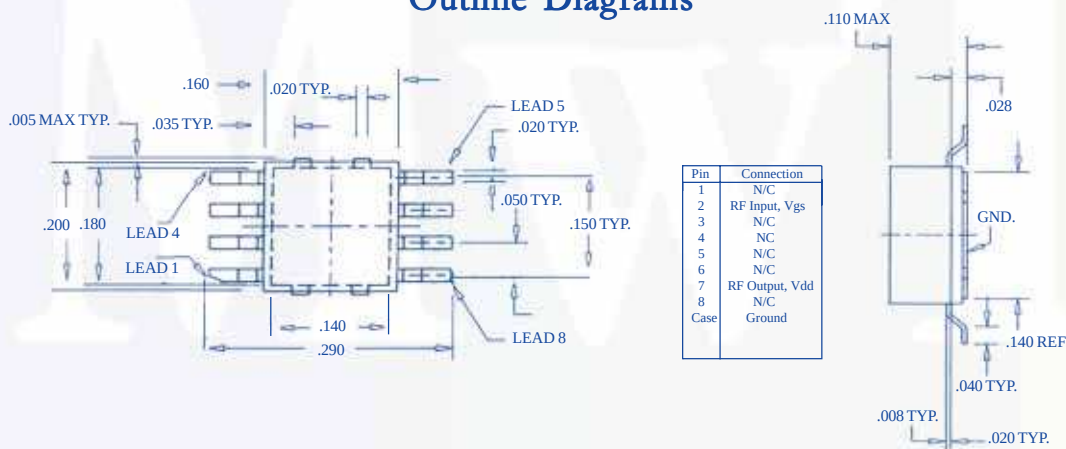
Gain vs. Control Voltage



I_{ds} vs. Control Voltage



Outline Diagrams



Application Circuit

