Stanford Microdevices

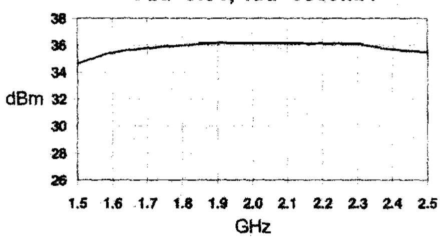
Product Description

Stanford Microdevices' SMM-280-4 is a gallium arsenide monolithic-microwave-integrated circuit (MMIC) amplifier housed in a copper-tungsten package for efficient heat transfer.

Designed for operation in wireless systems operating in the 1.5-2.7 GHz frequency range, this amplifier has 24dB of gain and +36dBm of output power at P1dB.

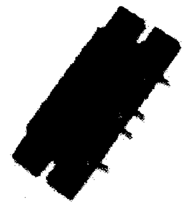
This 3-stage amplifier's output third-order intercept point is typically +46dBm when biased at 9 volts and 3 amps.

Output Power vs. Frequency
Vdd=9.0V, Idd=3000mA



SMM-280-4

1.5-2.7 GHz, 4 Watt GaAs MMIC Amplifier



Product Features

- 24dB Gain and +36dBm Output Power
- High Third Order Intercept, +46dBm Typ.
- High Power Added Efficiency
- Low VSWR, 1.7:1 Typ.
- Copper/Tungsten Package

Applications

- Power Amplifier for Wireless Systems

High Power MMICs

Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions		Unit	Min.	Typ.	Max.
P_{1dB}	Output Power at 1dB Compression: Vdd = 9.0V, Idd = 3000mA	f = 1.8-2.4 GHz f = 1.5-2.7 GHz	dBm	36	36.5 35	
G_{1dB}	Gain at P1dB Compression: Vdd = 9.0V, Idd = 3000mA	f = 1.8-2.4 GHz f = 1.5-2.7 GHz	dB	21 18	24	
P_{SAT}	Saturated Power Output: Vdd = 9.0V, Idd = 3000mA	f = 1.8-2.4 GHz f = 1.5-2.7 GHz	dBm		37 35.5	
VSWR	Input and Output		-		2.0:1	
IP_3	Output 3rd Order Intermodulation Point: Vdd = 9.0V, Idd = 3000mA	f = 1.5-2.7 GHz	dBm		46	
PAE	Power Added Efficiency: Vdd = 9.0V, Idd = 3000mA	f = 1.5-2.7 GHz	%	15	20	

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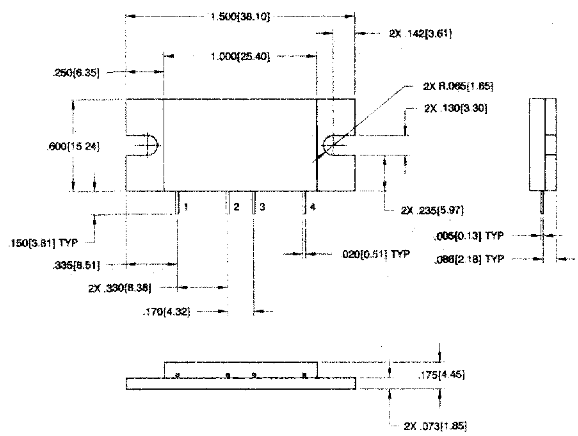
SMM-280-4 1.5-2.7 GHz 4 Watt GaAs MMIC Amplifier

Absolute Maximum Ratings

Parameter	Absolute Maximum
Positive Supply Voltage (V+)	+12V
Positive Supply Current (I+)	3600mA
Negative Supply Voltage (V-)	-10V
RF Input Power (Pin)	1000mW
Operating Temperature	-45C to +85C
Storage Temperature	-65C to +150C

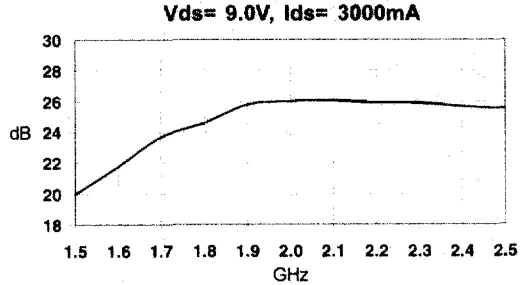
Notes:

1. Operation of this device above any one of these parameters may cause permanent damage.
2. Mounting Surface Temperature = 25° C



Pin Designation	
1	RF out
2	Vd = +9V
3	Vg = -5V
4	RF in

Gain vs. Frequency
Vds= 9.0V, Ids= 3000mA



Output Third Order Intercept vs. Frequency
Vds=9.0V, Ids= 3000mA