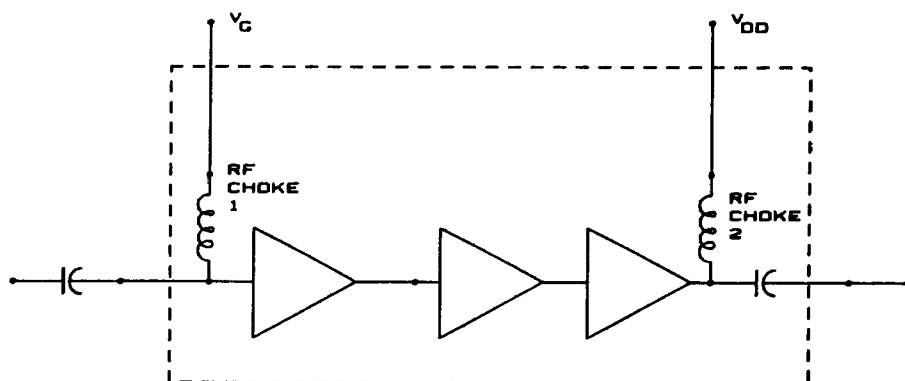


MODEL PM-AM1802

6-18 GHz MMIC CHIP AMPLIFIERS

FEATURES

9 dB GAIN
CASCADABLE GAIN STAGE
GAIN CONTROL
BUILT-IN BIAS
LOW CURRENT



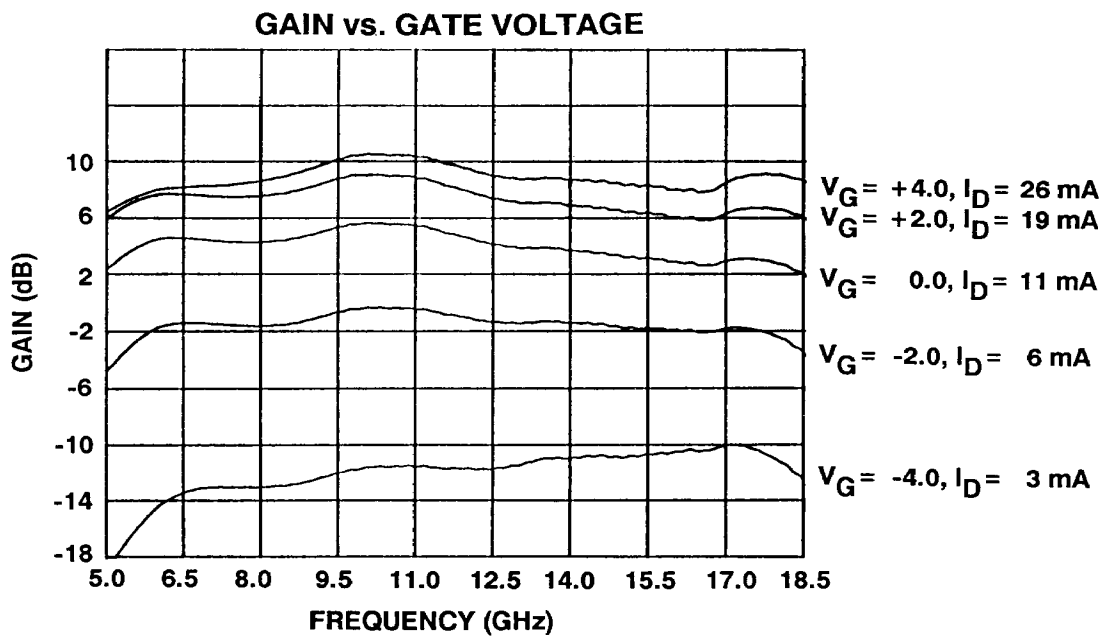
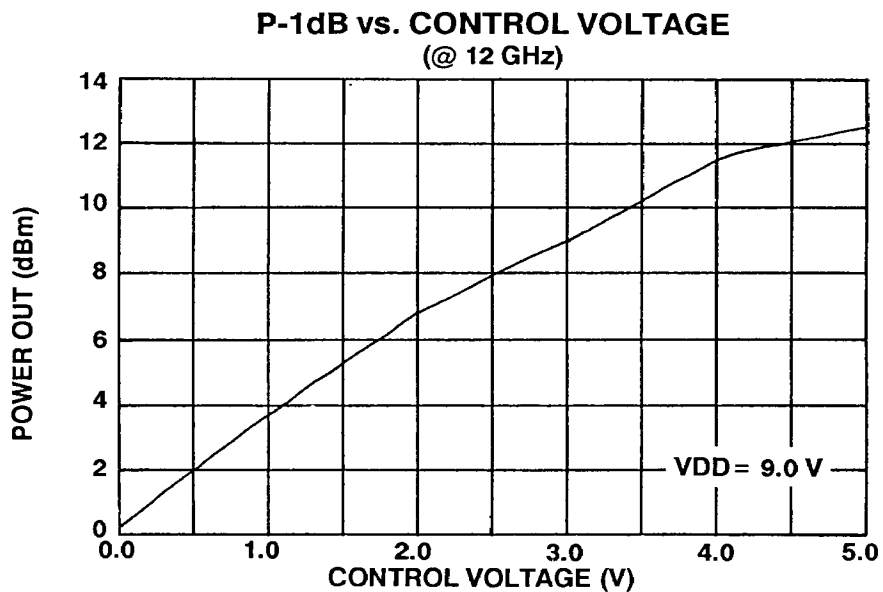
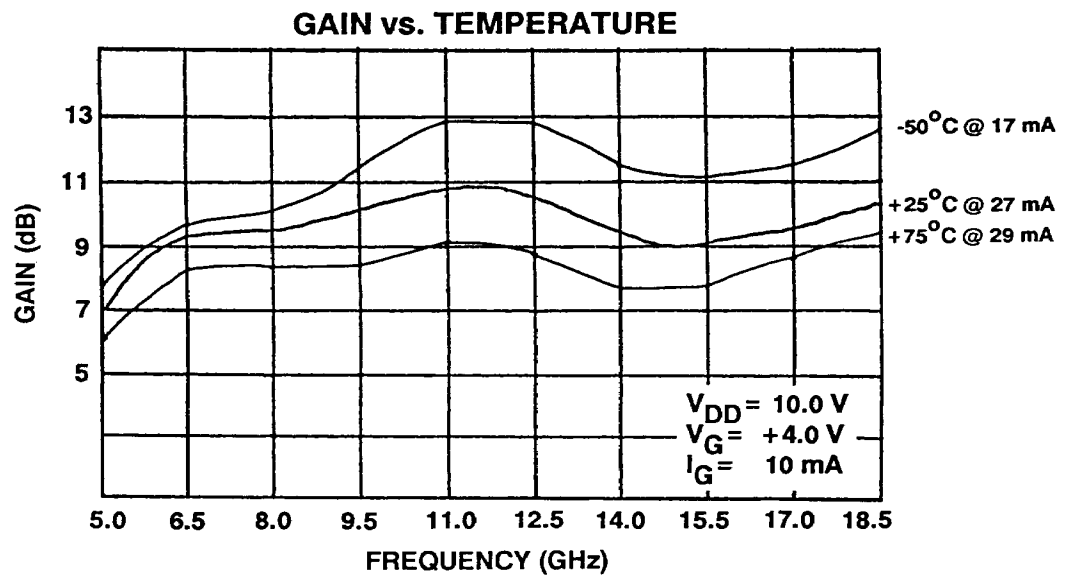
The Pacific Monolithics 6-18 GHz chip amplifier has three stages of amplification, with built-in biasing and bypassing circuits. This chip will operate over a bias range of 8 to 12 Volts V_{DD} and 0 to 5 Volts V_G . It requires only an external decoupling capacitor to comprise a complete 6-18 GHz amplifier. The chip also features 10 dB of gain control. These high-gain amplifiers may be used as stand-alone stages or may be directly cascaded for higher gains.

MIL-STD 883 screening available

PERFORMANCE SPECIFICATIONS

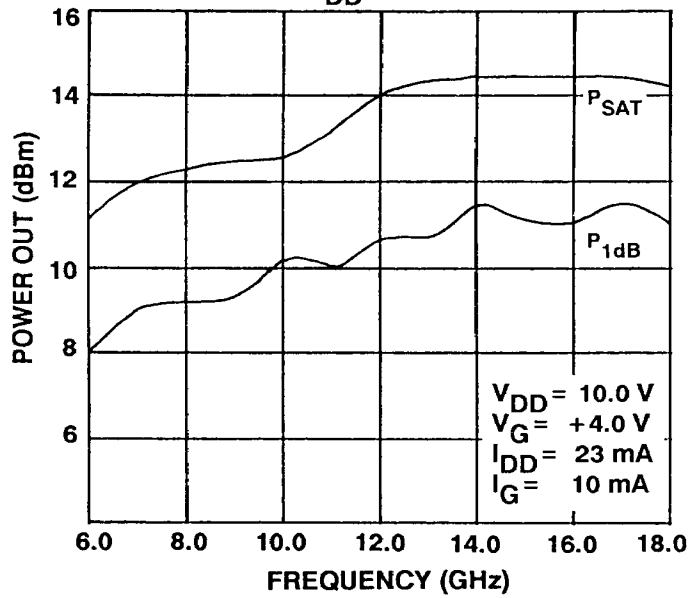
PARAMETER	MIN	TYP	MAX	UNITS
Small-Signal Gain	8	9		dB
Gain Control Range		10		dB
Gain Flatness		± 1.0	± 1.5	dB
Input VSWR		2.5:1		
Output VSWR		2.0:1		
Isolation	30			dB
Power Output (1 dB compression, $V_{DD}=10\text{ V}$, $V_G=4\text{ V}$)	8	10		dBm
Noise Figure		10	12	dB
Bias Current ($V_{DD}=10\text{ V}$, $V_G=4\text{ V}$)		35	40	mA

All specifications measured at 25°C.



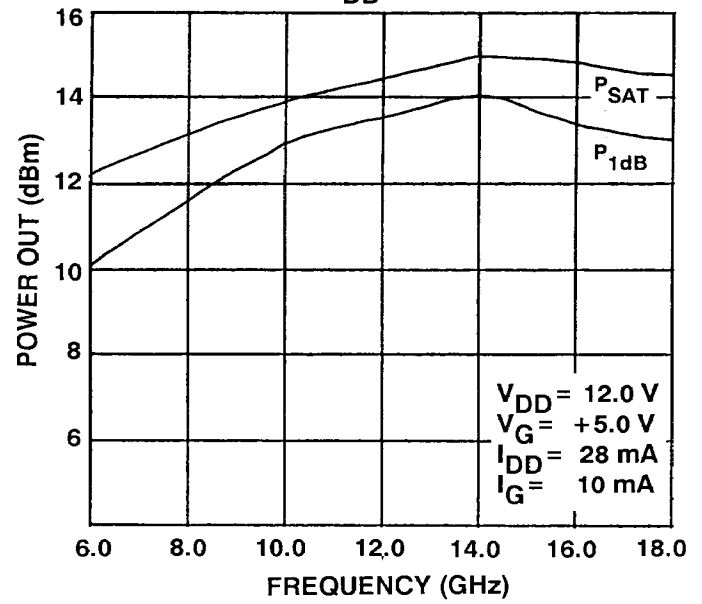
OUTPUT POWER

($V_{DD} = 10\text{ V}$)

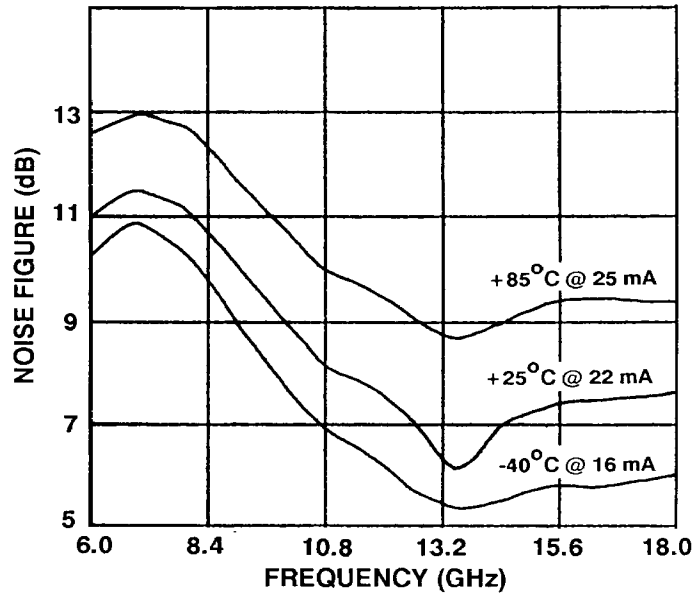


OUTPUT POWER

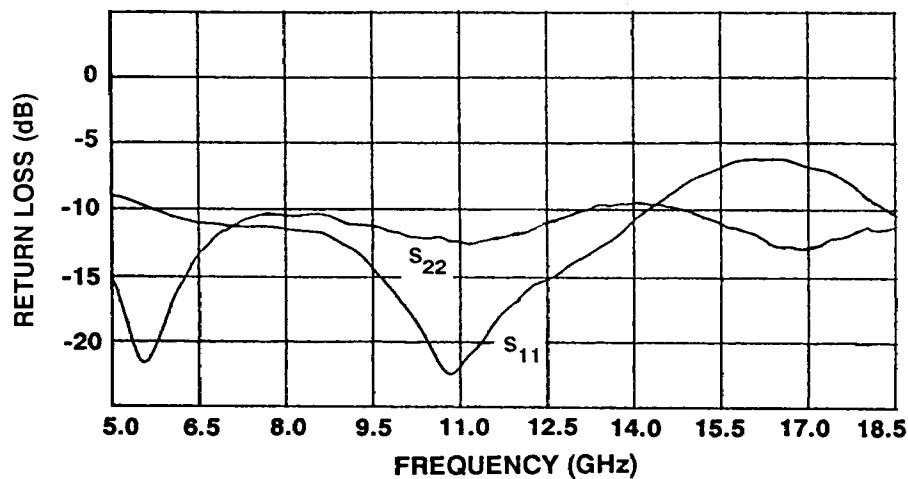
($V_{DD} = 12\text{ V}$)



NOISE FIGURE vs. TEMPERATURE

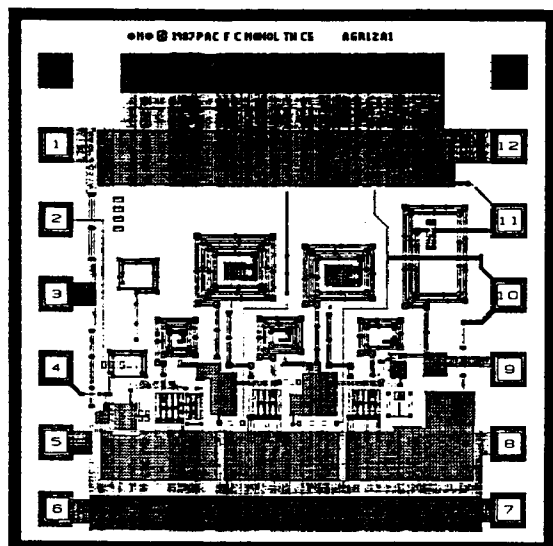
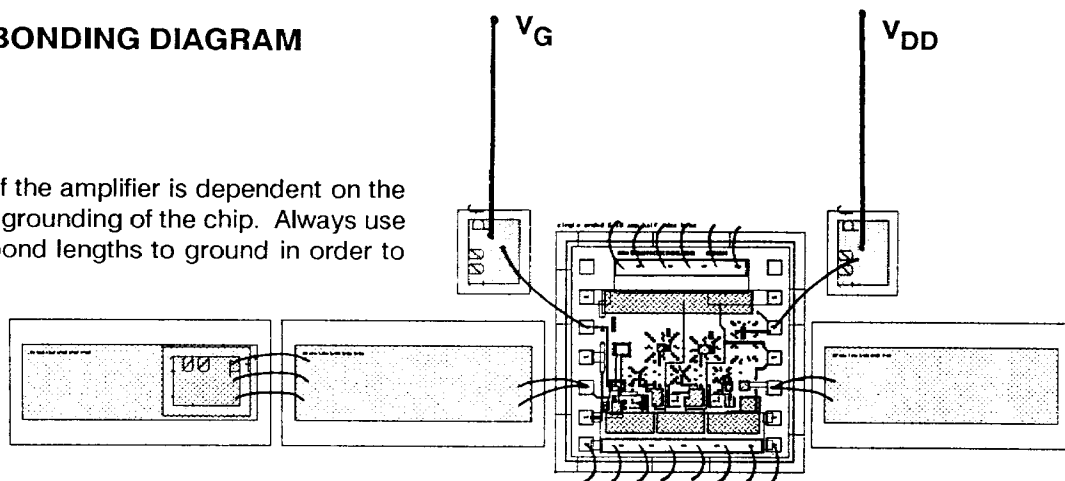


RETURN LOSS



TYPICAL BONDING DIAGRAM

NOTE: Performance of the amplifier is dependent on the achievement of proper grounding of the chip. Always use the shortest possible bond lengths to ground in order to minimize inductance.



CHIP SIZE: 48 X 48 MILS

- | | | |
|-----------|-----------|--------------|
| 1. GROUND | 5. GROUND | 9. RF OUT |
| 2. V_G | 6. GROUND | 10. GROUND |
| 3. GROUND | 7. GROUND | 11. V_{DD} |
| 4. RF IN | 8. GROUND | 12. GROUND |

NOTE: Input impedance at pin 2 (V_G) is approximately 400 Ohms.

S-PARAMETERS

($V_{DD} = 10\text{ V}$, $V_G = 4\text{ V}$, $I_{DD} = 25\text{ mA}$, $I_G = 8\text{ mA}$)

FREQUENCY (GHz)	S_{11}		S_{21}		S_{12}		S_{22}	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	0.334	-171	2.561	167	0.003	-128	0.121	-111
6.0	0.302	163	3.102	111	0.002	-177	0.092	19
7.0	0.242	140	3.198	63	0.003	139	0.192	5
8.0	0.152	107	3.221	24	0.002	115	0.240	-1
9.0	0.086	39	3.354	-13	0.007	132	0.230	-6
10.0	0.159	-46	3.397	-51	0.004	112	0.254	-13
11.0	0.264	-83	3.318	-86	0.003	109	0.294	-6
12.0	0.358	-107	3.204	-120	0.003	117	0.298	-13
13.0	0.418	-127	3.030	-153	0.005	103	0.356	-23
14.0	0.438	-150	2.923	177	0.007	36	0.412	-18
15.0	0.410	-162	2.963	148	0.005	171	0.488	-25
16.0	0.345	174	2.967	118	0.014	51	0.521	-30
17.0	0.287	141	3.074	89	0.009	-78	0.550	-32
18.0	0.190	84	3.156	53	0.021	-25	0.505	-41
19.0	0.223	-17	3.045	16	0.009	-102	0.439	-63
20.0	0.435	-51	2.929	-25	0.009	-46	0.325	-76

NOTE: The S-parameters given above do not include ground bond-wire inductance (typically 0.04 nH), or input and output bond-wire inductance (typically 0.3 nH).

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PACIFIC MONOLITHICS

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245 Santa Ana Court, Sunnyvale, CA 94086 • TWX 510-600-3726 • (408) 732-8000