

AFT14014 5.0 TO 14.0 GHz 6 LEADED MICROWAVE AMPLIFIER

Typical Values	AFT14014
Low DC Power Consumption	+5 Vdc
Medium Gain	25.0 dB
Low Noise Figure	2.0 dB
6 Leaded Microwave Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5.0 - 14.0 GHz	5.0 - 14.0 GHz	5.0 - 14.0 GHz
Small Signal Gain (Min.)	25.0 dB	23.0 dB	23.0 dB
Gain Flatness (Max.)	±2.0 dB	±2.5 dB	±2.5 dB
Noise Figure (Max.)	2.0 dB	3.1 dB	3.5 dB
SWR (Max.)	1.7:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+12.0 dBm	+10.0 dBm	+9.8 dBm
Reverse Isolation	55.0 dB	—	—
DC Current (Max.)	160 mA	168 mA	168 mA

* Measured in a 50-ohm system at +5 Vdc @ 160 mA unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 6000 MHz	AFT14014
Second Order Harmonic Intercept Point	+16 dBm
Second Order Two Tone Intercept Point	+10 dBm
Third Order Two Tone Intercept Point	+20 dBm

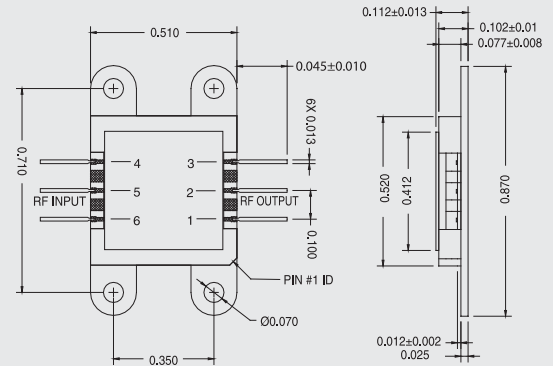
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65° to +150 °C
Maximum Case Temperature	-55° to 85 °C
Maximum DC Voltage	+7.5 Volts
Maximum Continuous RF Input Power	+21 dBm
Maximum Short Term Input Power (1 Minute Max.)	+21 dBm
Maximum Peak Power (3 μsec Max.)	+21 dBm
Thermal Resistance ¹ (θjc)	+36 °C/W
Junction Temperature Rise Above Case (Tjc)	+31 °C

¹ Thermal resistance is based on total power dissipation.

AFT14014

6 Leaded Package for Amplifiers



Biasing Instructions:

1. Make sure that no RF is being applied
2. Set drain voltage equal to zero volts
3. Turn gate voltage to -1.0 volts
4. Turn drain voltage to +5.0 volts
5. At this point, the drain current should be less than 100 mA
6. Adjust gate voltage up (closer to zero) until the current reaches 160 mA
7. RF may now be applied

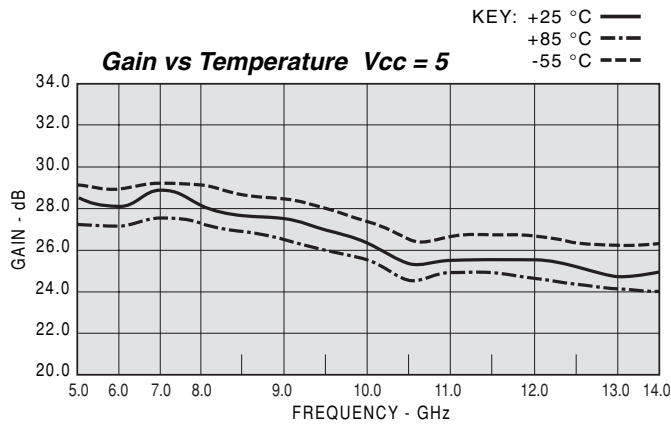
To de-Bias:

1. Remove RF
2. Turn drain voltage to zero volts
3. Turn gate voltage to zero volts

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AFT14014 Vcc=+5V Icc=160.0

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
5000	1.70	1.52	28.51	-145.09	0.401	-53.56
5500	1.59	1.60	28.34	145.40	0.372	-54.00
6000	1.61	1.65	28.00	82.85	0.336	-53.44
6500	1.56	1.64	27.86	25.48	0.326	-51.95
7000	1.55	1.74	28.79	-31.43	0.364	-55.21
7500	1.46	1.62	28.77	-93.86	0.342	-56.12
8000	1.56	1.36	28.12	-151.26	0.309	-54.88
8500	1.64	1.21	27.82	152.58	0.298	-55.63
9000	1.60	1.29	27.51	96.50	0.303	-55.80
9500	1.50	1.48	26.86	41.00	0.301	-56.76
10000	1.41	1.55	26.23	-11.77	0.299	-60.31
10500	1.28	1.48	25.23	-62.31	0.253	-57.21
11000	1.21	1.40	25.54	-110.26	0.294	-56.08
11500	1.19	1.26	25.62	-163.36	0.298	-54.77
12000	1.18	1.29	25.47	143.27	0.297	-52.02
12500	1.15	1.52	25.28	87.43	0.325	-50.67
13000	1.12	1.68	24.71	34.47	0.320	-49.60
13500	1.10	1.61	24.86	-16.07	0.271	-47.56
14000	1.13	1.43	24.84	-73.61	0.326	-45.88

