

AFT5591 2.5 TO 5.5 GHz 6 LEADED MICROWAVE AMPLIFIER

<i>Typical Values</i>	AFT5591
Output Power	+33.0 dBm
Medium Gain	17.0 dB
6 Leaded Microwave Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +75 °C
Frequency (Min.)	2.5 - 5.5 GHz	2.5 - 5.5 GHz	2.5 - 5.5 GHz
Small Signal Gain (Min.)	17.0 dB	15.0 dB	15.0 dB
Gain Flatness (Max.)	±1.5 dB	±2.0 dB	±2.0 dB
Noise Figure (Max.)	5.0 dB	9.0 dB	9.0 dB
SWR (Max.) Input/Output	1.8:1 / 2.0:1	2.0:1 / 3.0:1	2.0:1 / 3.0:1
Power Output (Min.) @ 1dB comp.	+33.0 dBm	+32.0 dBm	+32.0 dBm
Reverse Isolation	54 dB	—	—
DC Current (Max.)	600 mA	700 mA	700 mA
Gate Voltage (Max./Min.)	-7.0 V to -3.0 V	-7.0 V to -3.0 V	-7.0 V to -3.0 V

* Measured in a 50-ohm system at +8 Vdc @ 600 mA unless otherwise specified.

INTERMODULATION PERFORMANCE

<i>Typical @ 25 °C; 3000 MHz</i>	AFT5591
Second Order Harmonic Intercept Point	+45 dBm
Second Order Two Tone Intercept Point	+39 dBm
Third Order Two Tone Intercept Point	+40 dBm

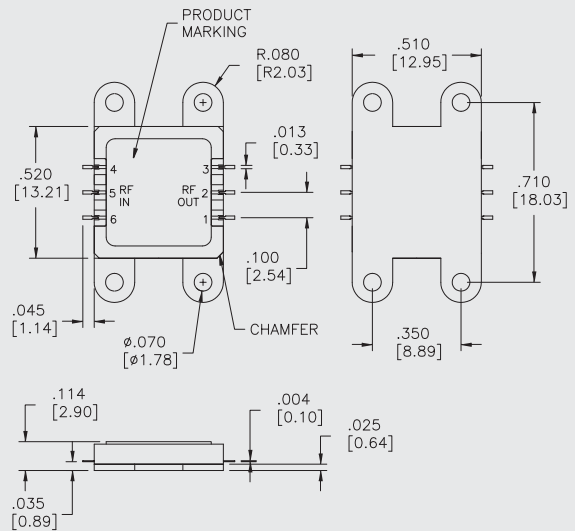
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-55 to 150 °C
Maximum Case Temperature	+75 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+25 dBm
Maximum Short Term Input Power (1 Minute Max.)	+25 dBm
Maximum Peak Power (3 µsec Max.)	+25 dBm
Thermal Resistance¹ (θjc)	+12.7 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+150 °C

¹ Thermal resistance is based on total power dissipation.

AFT5591

6 Leaded Package for Amplifiers



Pin #1: V_D
Pin #2: RF Output
Pin #3: V_D
Pin #4: NC
Pin #5: RF Input
Pin #6: V_G

Biasing Instructions:

1. Make sure that no RF is being applied
2. Set drain voltage equal to zero volts
3. Turn gate voltage to -7.0 volts
4. Turn drain voltage to +8.0 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 600 mA
7. RF may now be applied

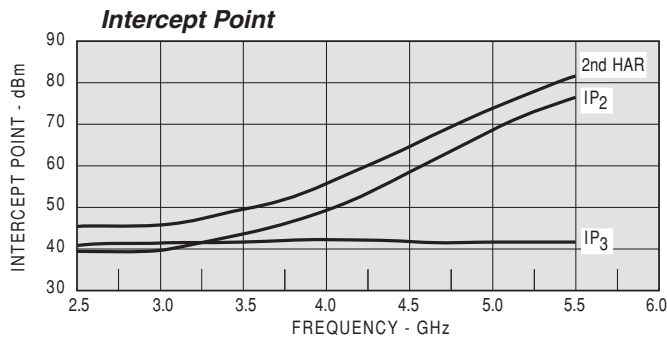
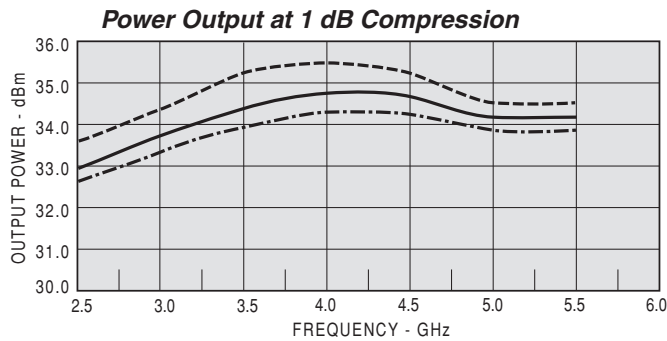
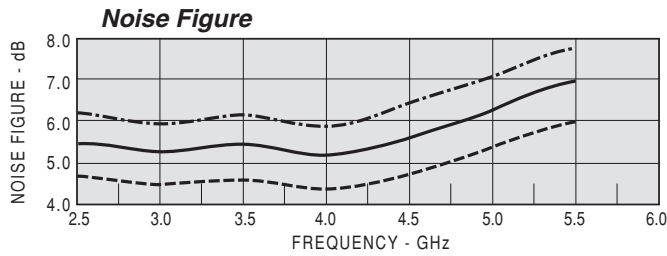
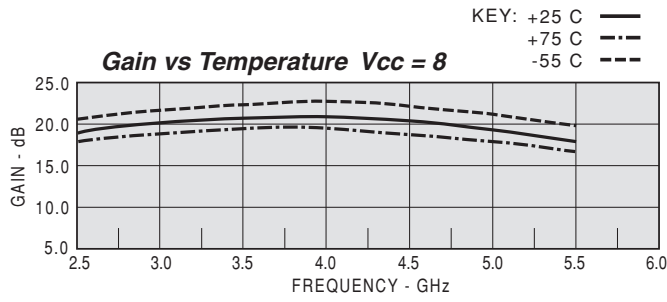
To de-Bias:

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: AFT5591		Vcc=+8V			Icc=600.0	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
2500	1.31	2.46	18.49	66.35	00.61	-57.18
2600	1.34	2.52	18.85	43.60	00.63	-56.03
2700	1.37	2.53	18.96	22.39	00.59	-55.16
2800	1.40	2.54	19.34	00.35	00.61	-55.10
2900	1.43	2.53	19.37	-21.16	00.60	-56.51
3000	1.45	2.47	19.67	-43.04	00.61	-55.94
3100	1.47	2.40	19.77	-64.27	00.59	-56.17
3200	1.48	2.30	19.97	-85.49	00.59	-55.87
3300	1.49	2.14	19.99	-105.70	00.56	-59.22
3400	1.49	2.03	20.18	-126.39	00.57	-58.55
3500	1.49	2.00	20.43	-147.33	00.58	-65.09
3600	1.50	1.98	20.69	-169.12	00.61	-59.19
3700	1.52	1.98	20.77	168.94	00.61	-67.92
3800	1.53	1.95	20.82	147.54	00.59	-68.06
3900	1.56	1.94	20.75	125.01	00.63	-78.08
4000	1.58	1.95	20.71	104.46	00.57	-63.37
4100	1.60	1.94	20.57	81.87	00.63	-68.00
4200	1.63	1.95	20.41	61.58	00.56	-60.71
4300	1.65	1.95	20.29	39.49	00.61	-62.56
4400	1.66	1.93	20.09	19.75	00.55	-60.99
4500	1.67	1.95	19.90	-01.55	00.59	-57.06
4600	1.68	1.92	19.66	-21.84	00.56	-53.28
4700	1.68	1.92	19.53	-43.02	00.59	-54.41
4800	1.67	1.91	19.37	-63.40	00.57	-53.39
4900	1.67	1.88	19.24	-83.84	00.57	-52.26
5000	1.66	1.86	18.97	-104.39	00.57	-52.13
5100	1.66	1.81	18.83	-126.20	00.61	-52.15
5200	1.65	1.78	18.62	-147.09	00.58	-52.40
5300	1.65	1.77	18.50	-169.24	00.62	-51.52
5400	1.66	1.75	18.21	169.90	00.58	-55.34
5500	1.67	1.78	17.94	146.63	00.65	-52.70