AS6045

10 TO 6000 MHz SMTO-8 CASCADABLE AMPLIFIER

Typical Values	AS6045
High Voltage	**+20 Volts**
High Gain	**+19.0 dB**
High Reverse Isolation	**34 dB**
High Performance Thin Film	
Standard Size SMTO-8	

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)		**10-6000 MHz**	**10-6000 MHz**	**10-6000 MHz**
Small Signal Gain (Min.)		14.0 dB	12.5 dB	12.0 dB
Gain Flatness (Max.)		±0.4 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	100-6000 MHz	<5.0 dB	5.5 dB	6.0 dB
SWR (Max.)	Input	<1.4:1^	1.7:1^	1.9:1^
	Output	<1.4:1^	1.7:1^	1.9:1^
Power Output (Min.) @ 1dB comp.		+19.0† dBm	+18.0† dBm	+17.5† dBm
Reverse Isolation		34.0 dB	—	—
DC Current (Max.)		140 mA	150.0 mA	160.0 mA

* Measured in a 50-ohm system at +20 Vdc unless otherwise specified.
† 1.5 dB lower above 5000 MHz. ^ 0.3 higher below 50 MHz and above 5500 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 3000 MHz	+15 Volts	+20 Volts
Second Order Harmonic Intercept Point	+51 dBm	+54 dBm
Second Order Two Tone Intercept Point	+45 dBm	+48 dBm
Third Order Two Tone Intercept Point	+25 dBm	+30 dBm

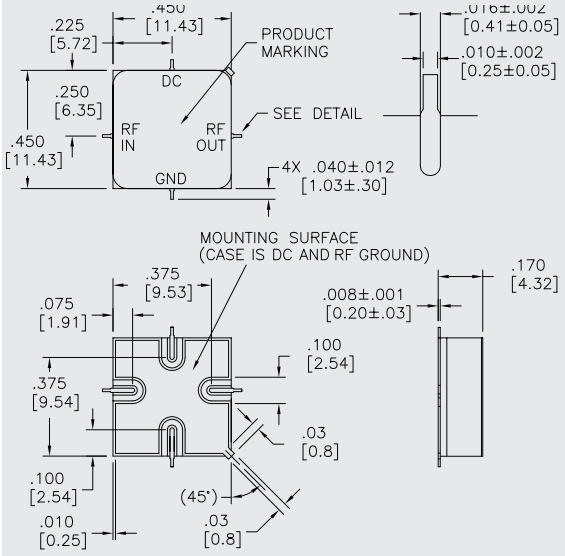
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+25 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	250 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance[1] (θjc)	+13.5 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+37.9 °C

[1] Thermal resistance is based on total power dissipation.

AS6045

SMTO-8 Package for Amplifiers

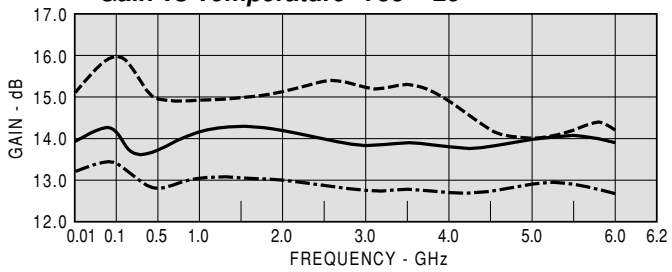


DIMENSIONS ARE IN INCHES [MILLIMETERS]

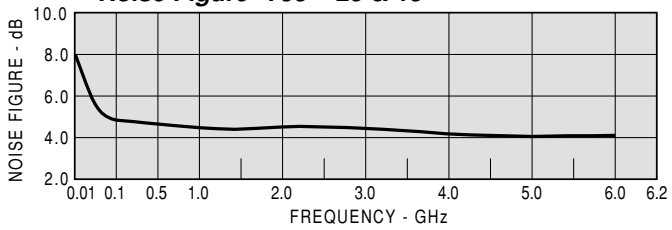
TYPICAL PERFORMANCE

KEY: +25 °C
+85 °C
-55 °C

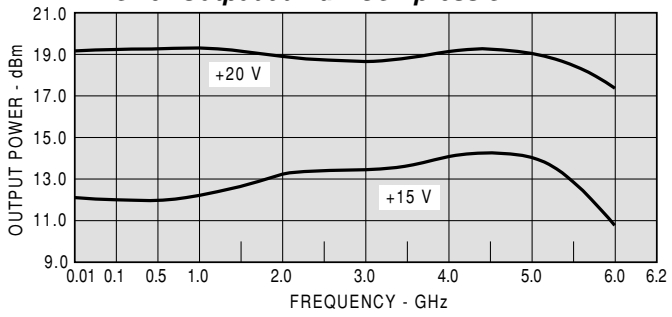
Gain vs Temperature Vcc = 20



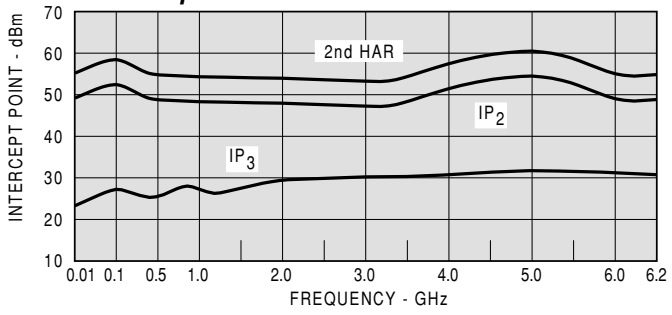
Noise Figure Vcc = 20 & 15



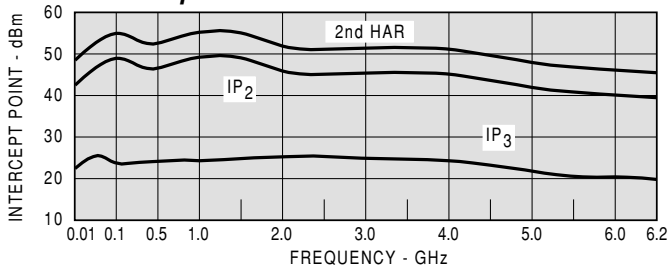
Power Output at 1 dB Compression



Intercept Point Vcc = 20



Intercept Point Vcc = 15



TYPICAL AUTOMATIC TEST DATA

Model: AS6045 Vcc= +20V Icc= 139.81

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
10	1.92	1.69	14.07	30		-34.2
50	1.47	1.32	14.66	-1	0.89	-34.2
100	1.44	1.31	14.53	-11	0.54	-34.0
500	1.36	1.33	13.79	-50	0.28	-33.5
1000	1.31	1.50	14.18	-103	0.29	-33.9
1200	1.25	1.56	14.36	-124	0.30	-34.0
1400	1.18	1.56	14.35	-146	0.30	-34.1
1600	1.13	1.57	14.30	-168	0.30	-33.9
1800	1.08	1.53	14.37	171	0.30	-33.9
2000	1.02	1.48	14.36	150	0.28	-34.1
2200	1.09	1.39	14.34	128	0.28	-33.7
2400	1.16	1.29	14.40	106	0.32	-34.2
2600	1.18	1.19	14.34	84	0.31	-34.3
2800	1.22	1.15	14.20	62	0.29	-34.4
3000	1.26	1.14	14.15	41	0.30	-34.7
3200	1.26	1.17	14.12	19	0.32	-35.6
3400	1.19	1.28	14.06	-2	0.28	-34.3
3600	1.16	1.32	13.86	-24	0.28	-35.1
3800	1.15	1.39	13.78	-46	0.30	-35.6
4000	1.10	1.36	13.65	-66	0.29	-36.2
4200	1.08	1.44	13.73	-88	0.32	-36.2
4400	1.12	1.44	13.83	-110	0.32	-35.0
4600	1.18	1.41	13.74	-132	0.29	-35.0
4800	1.17	1.39	13.71	-154	0.30	-36.1
5000	1.21	1.47	13.64	-177	0.30	-35.4
5200	1.34	1.54	13.64	160	0.35	-35.6
5400	1.40	1.60	13.98	136	0.35	-34.6
5600	1.39	1.60	13.88	111	0.35	-35.1
5800	1.43	1.74	13.49	84	0.38	-34.8
6000	1.51	1.72	13.29	59	0.36	-35.8

LINEAR S-PARAMETERS

Model: AS6045 Vcc= +20V Icc= 139.81

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.31	-107.7	5.05	30.1	0.019	13.6	0.26	-104.2
50	0.19	-166.6	5.41	-1	0.02	1.5	0.14	-157.7
100	0.18	177.2	5.33	-11.5	0.02	-2.5	0.13	-172.0
500	0.15	148.4	4.89	-49.7	0.021	-33.1	0.14	174.6
1000	0.13	117.2	5.12	-102.6	0.02	-66.8	0.20	156.0
1200	0.11	106.1	5.23	-124.3	0.02	-77.4	0.22	144.8
1400	0.08	93.8	5.22	-146.2	0.02	-88.6	0.22	135.9
1600	0.06	76.7	5.19	-167.8	0.02	-100.4	0.22	127.2
1800	0.04	59.4	5.23	170.8	0.02	-113.5	0.21	117.3
2000	0.01	141.1	5.23	150.2	0.02	-132.2	0.19	109.6
2200	0.04	-143.7	5.21	128.2	0.021	-146.0	0.16	97.6
2400	0.07	-142.5	5.25	105.5	0.019	-161.9	0.13	83.6
2600	0.08	-160.9	5.21	83.9	0.019	-176.1	0.09	64.2
2800	0.10	177.4	5.13	62.4	0.019	169.2	0.07	34.4
3000	0.11	164.9	5.10	40.7	0.018	151.8	0.06	-26.4
3200	0.11	153.6	5.08	18.8	0.017	135.8	0.08	-48.5
3400	0.09	139.6	5.04	-2.1	0.019	116.9	0.12	-67.4
3600	0.07	110.7	4.93	-23.7	0.017	102.9	0.14	-79.9
3800	0.07	85.0	4.89	-45.7	0.017	89.8	0.16	-83.9
4000	0.05	60.6	4.82	-66.4	0.016	76.1	0.15	-91.6
4200	0.04	1.4	4.86	-88.4	0.016	54.7	0.18	-96.0
4400	0.06	-18.1	4.92	-109.8	0.018	40.1	0.18	-89.9
4600	0.08	-32.4	4.86	-131.7	0.018	27.0	0.17	-86.3
4800	0.08	-41.9	4.84	-154.4	0.016	12.2	0.16	-86.7
5000	0.10	-66.9	4.81	-176.9	0.017	-3.3	0.19	-80.2
5200	0.15	-79.9	4.81	159.7	0.017	-22.9	0.21	-72.1
5400	0.17	-82.1	5.00	136.2	0.019	-30.9	0.23	-69.6
5600	0.16	-97.7	4.94	111.1	0.017	-55.8	0.23	-69.3
5800	0.18	-115.1	4.73	84.4	0.018	-65.9	0.27	-79.2
6000	0.20	-133.8	4.62	58.6	0.016	-85.9	0.27	-89.5