TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AS6063

2000 TO 6000 MHz SMTO-8 CASCADABLE AMPLIFIER

Typical Values	AS6063
High Output Power	+19.0 dBm
Medium Gain	16.0 dB
High Reverse Isolation	35 dB
High Performance Thin Film	
Standard Size SMTO-8	

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)		1.0-6.2 GHz	2.0-6.0 GHz	2.0-6.0 GHz
Small Signal Gain (Min.)		16.0 dB	15.0 dB	14.5 dB
Gain Flatness (Max.)		±0.5 dB	±0.8 dB	±0.9 dB
Noise Figure (Max.)		<4.5 dB	5.0 dB	5.5 dB
SWR (Max.)	Input Output	<1.8:1 <1.7:1	2.0:1 1.9:1	2.1:1 2.0:1
Power Output (Min.) @ 1dB comp.		+19.0^ dBm	+18.0^ dBm	+17.5^ dBm
Reverse Isolation		35.0 dB	—	—
DC Current (Max.)		105.0 mA	110.0 mA	115.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 1.0 dBm less above 5200 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 4500 MHz	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point	+60 dBm	+56 dBm
Second Order Two Tone Intercept Point	+54 dBm	+50 dBm
Third Order Two Tone Intercept Point	+29 dBm	+31 dBm

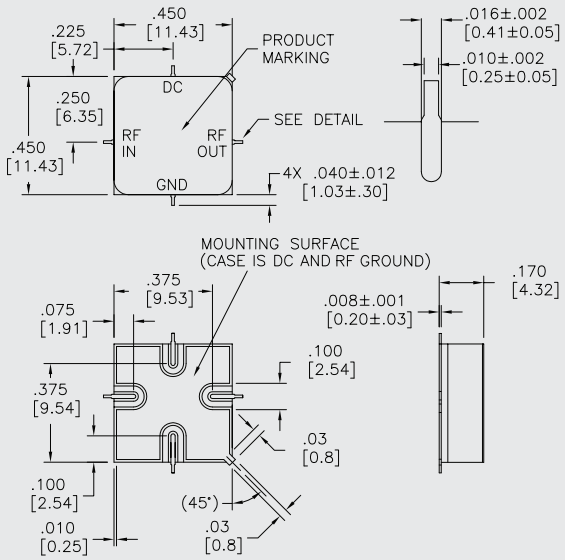
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance[1] (θjC)	+14 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+25.1 °C

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

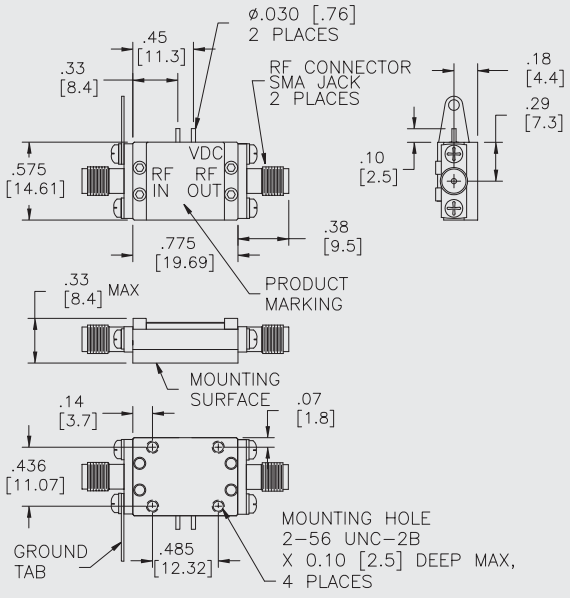
AS6063

SMTO-8 Package for Amplifiers



ACP6063

CougarPak® Connectorized Package (one-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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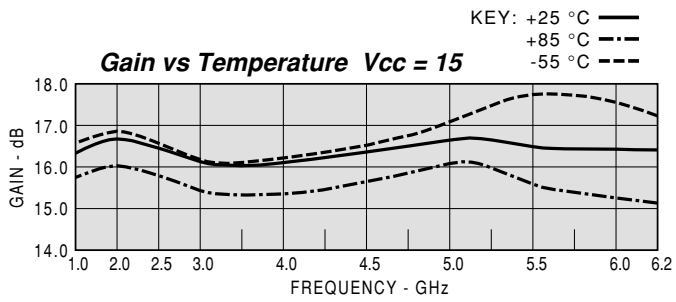
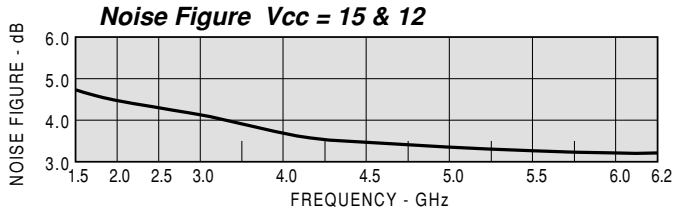
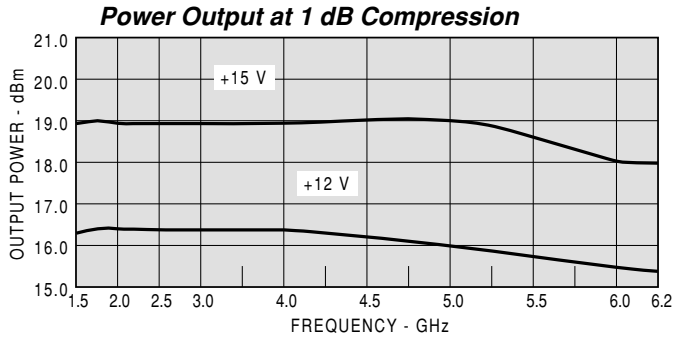
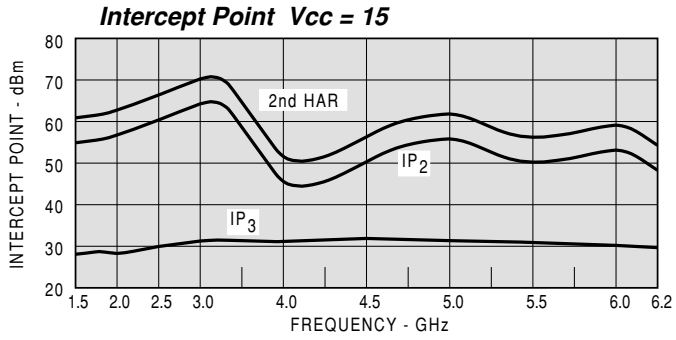
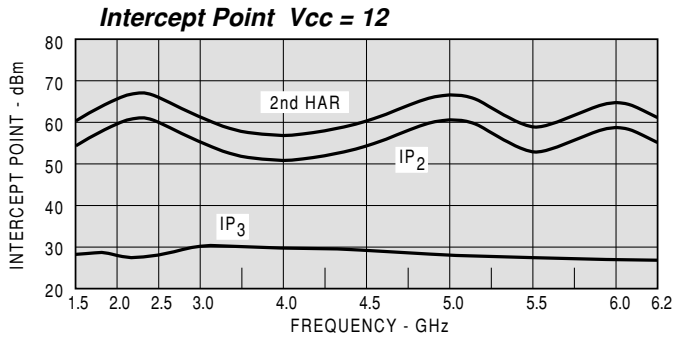
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: AS6063 Vcc= +15V Icc = 104.95

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
900	2.03	1.23	16.45	-43	0.57	-38.2
1000	1.92	1.17	16.61	-62	0.52	-38.5
1500	1.56	1.16	16.97	-142	0.42	-38.1
2000	1.40	1.15	17.08	147	0.39	-38.5
2500	1.34	1.19	16.82	80	0.36	-38.7
3000	1.36	1.26	16.49	16	0.35	-38.6
3200	1.35	1.31	16.50	-9	0.38	-38.9
3400	1.35	1.27	16.38	-34	0.35	-38.7
3600	1.38	1.31	16.23	-58	0.33	-39.6
3800	1.40	1.40	16.13	-83	0.34	-39.3
4000	1.45	1.33	16.29	-107	0.34	-37.6
4200	1.55	1.30	16.19	-132	0.33	-37.5
4400	1.66	1.35	16.29	-157	0.35	-36.5
4600	1.70	1.43	16.55	178	0.38	-36.4
4800	1.76	1.37	16.86	152	0.39	-35.8
5000	1.80	1.30	17.15	124	0.41	-35.0
5200	1.71	1.48	17.17	95	0.41	-34.2
5400	1.54	1.53	16.95	68	0.36	-33.6
5600	1.44	1.37	16.99	38	0.38	-33.1
5800	1.45	1.48	16.71	6	0.46	-32.6
6000	1.67	1.70	16.4	-23	0.39	-32.0

LINEAR S-PARAMETERS

Model: AS6063 Vcc=15V Icc= 104.95

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
900	0.34	168.8	6.65	-43.4	0.012	-30.1	0.10	70.7
1000	0.31	158.5	6.77	-62.0	0.012	-39.2	0.08	71.0
1500	0.22	115.0	7.05	-142.1	0.012	-71.9	0.07	81.2
2000	0.17	91.6	7.14	147.1	0.012	-113.5	0.07	44.2
2500	0.14	60.1	6.93	80.2	0.012	-147.0	0.09	-9.2
2600	0.15	55.3	6.89	67.0	0.011	-154.9	0.09	-21.2
2800	0.16	43.7	6.80	42.0	0.011	-166.0	0.10	-52.8
3000	0.15	29.1	6.67	16.4	0.012	177.6	0.12	-72.6
3200	0.15	10.9	6.68	-9.3	0.011	165.6	0.13	-85.8
3400	0.15	-11.8	6.59	-33.7	0.012	145.6	0.12	-114.3
3600	0.16	-35.8	6.48	-57.9	0.010	134.4	0.14	-136.0
3800	0.17	-57.6	6.41	-82.6	0.011	126.2	0.17	-151.5
4000	0.18	-82.2	6.53	-106.6	0.013	110.0	0.14	-169.1
4200	0.22	-106.2	6.45	-131.6	0.013	95.1	0.13	168.8
4400	0.25	-122.9	6.53	-156.5	0.015	78.0	0.15	143.8
4600	0.26	-140.9	6.72	178.2	0.015	61.6	0.18	124.6
4800	0.28	-158.7	6.96	152.3	0.016	43.2	0.15	108.1
5000	0.28	-174.3	7.20	124.1	0.018	28.8	0.13	71.8
5200	0.26	172.6	7.22	94.9	0.019	8.3	0.19	39.2
5400	0.21	160.2	7.04	67.9	0.021	-5.9	0.21	21.3
5600	0.18	148.8	7.07	38.0	0.022	-25.9	0.15	-6.9
5800	0.18	154.9	6.84	6.3	0.023	-44.0	0.19	-75.8
6000	0.25	165.9	6.61	-23.4	0.025	-60.4	0.26	-104.1

Model: AS6063 Vcc= +12V Icc = 94.35

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
900	2.00	1.21	16.29	-45	0.57	-38.8
1000	1.91	1.18	16.43	-64	0.52	-38.2
1500	1.58	1.25	16.74	-144	0.42	-38.2
2000	1.41	1.25	16.81	145	0.39	-38.8
2500	1.35	1.30	16.52	78	0.36	-38.4
2600	1.38	1.31	16.48	65	0.37	-38.2
2800	1.40	1.32	16.32	40	0.33	-38.9
3000	1.38	1.35	16.22	14	0.35	-39.0
3200	1.37	1.41	16.29	-12	0.39	-38.8
3400	1.37	1.35	16.18	-36	0.34	-38.4
3600	1.39	1.37	16.00	-61	0.32	-39.6
3800	1.41	1.43	15.90	-86	0.35	-38.5
4000	1.47	1.36	16.04	-111	0.35	-37.2
4200	1.55	1.32	15.91	-136	0.35	-37.4
4400	1.65	1.32	15.93	-162	0.36	-36.3
4600	1.70	1.37	16.06	173	0.38	-35.3
4800	1.75	1.31	16.23	147	0.38	-35.5
5000	1.78	1.18	16.38	119	0.39	-34.4
5200	1.73	1.27	16.35	91	0.40	-33.4
5400	1.61	1.30	16.11	63	0.37	-32.6
5600	1.56	1.18	16.09	34	0.39	-32.5
5800	1.62	1.29	15.95	5	0.43	-31.0
6000	1.85	1.59	15.86	-27	0.45	-30.5