

# AC2205

## 100 TO 2200 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC2205
Low Noise Figure .....	2.0 dB
Medium Output Power .....	+13.5 dBm
High Performance Thin Film Standard Size TO-8 Package	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	30-2400 MHz	100-2200 MHz	100-2200 MHz
Small Signal Gain (Min.)	12.0 dB	11.0 dB	10.5 dB
Gain Flatness (Max.)	<±0.5 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.) 100-2200 MHz	2.0 dB	2.4 dB	2.8 dB
SWR (Max.) Input/Output	<1.5:1	2.0:1	2.1:1
Power Output (Min.) @ 1dB comp.	+13.5 dBm	+12.5 dBm	+12.0 dBm
Reverse Isolation	20.0 dB	—	—
DC Current (Max.)	50 mA	53 mA	58 mA

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

### INTERMODULATION PERFORMANCE

Typical @ 25 °C; 500 MHz	AC2205
Second Order Harmonic Intercept Point .....	+54 dBm
Second Order Two Tone Intercept Point .....	+48 dBm
Third Order Two Tone Intercept Point .....	+28 dBm

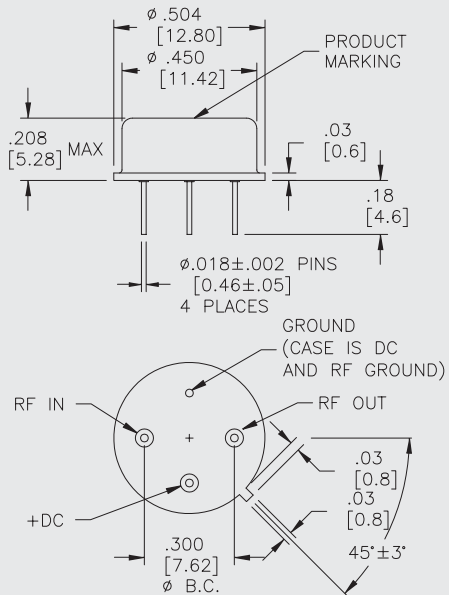
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to 125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+12 Volts
Maximum Continuous RF Input Power .....	+17 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	50 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+125 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+22 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+5.7 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

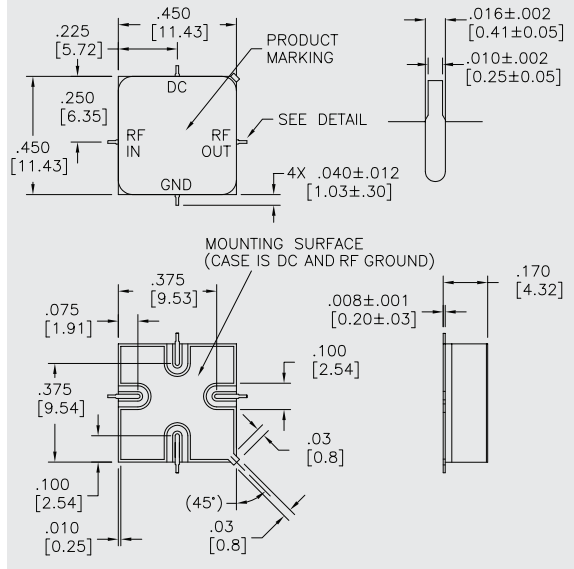
### AC2205

#### TO-8 Package for Amplifiers



### AS2205

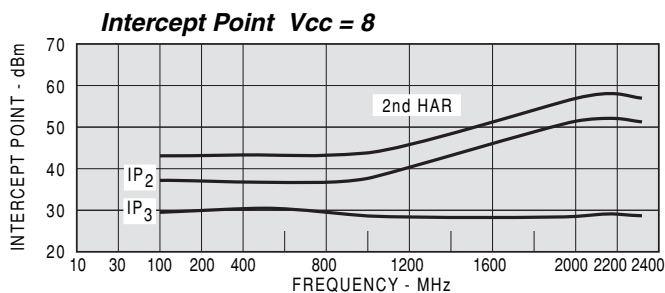
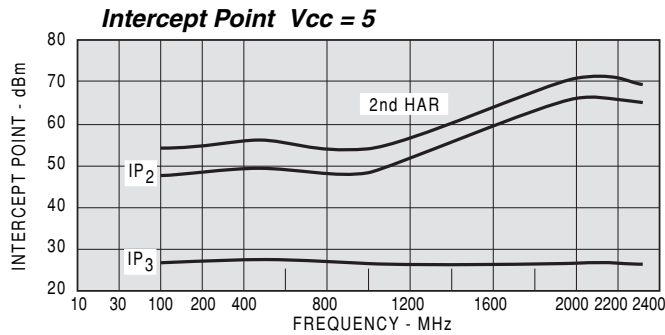
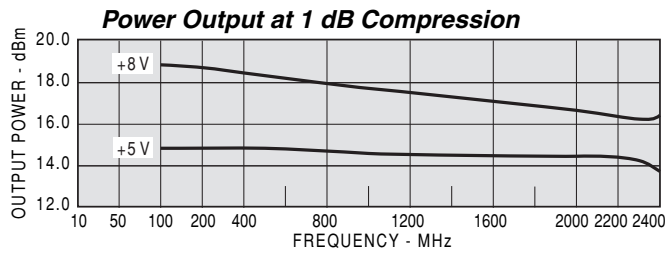
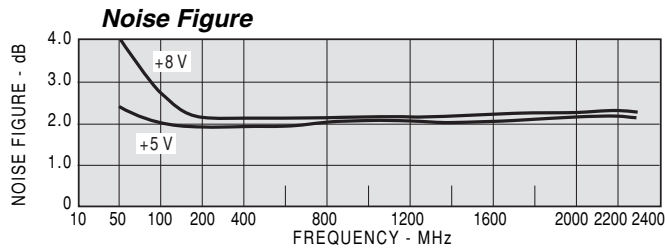
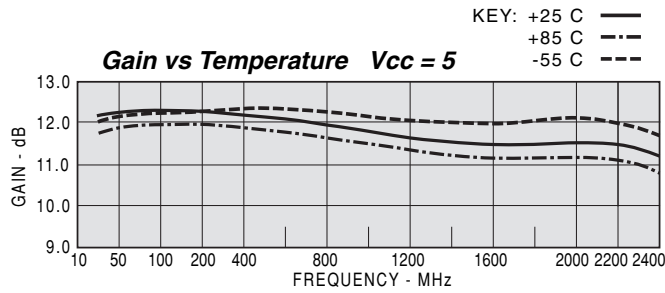
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC2205		Vcc=+5V				Icc=49.38	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
30	1.68	1.65	12.12	-169		-20.6	
50	1.59	1.67	12.21	-177		-20.9	
100	1.55	1.67	12.25	173	0.55	-21.0	
200	1.54	1.66	12.25	160	0.37	-21.0	
400	1.54	1.63	12.15	137	0.31	-21.1	
600	1.56	1.58	12.05	114	0.31	-20.9	
800	1.58	1.51	11.91	92	0.30	-20.7	
1000	1.62	1.47	11.74	70	0.30	-20.4	
1200	1.64	1.43	11.66	48	0.31	-20.1	
1400	1.64	1.42	11.58	25	0.32	-19.8	
1600	1.62	1.42	11.52	2	0.33	-19.4	
1800	1.58	1.41	11.57	-22	0.33	-18.9	
2000	1.49	1.42	11.58	-48	0.36	-18.3	
2200	1.37	1.43	11.54	-77	0.40	-17.7	
2400	1.43	1.47	11.27	-110	0.47	-17.1	

LINEAR S-PARAMETERS

Model: AC2205		Vcc=+5V				Icc=49.38			
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
30	0.25	-28.10	4.04	-169.3	0.093	-6.1	0.25	-146.8	
50	0.23	-22.20	4.08	-177.1	0.091	-5.8	0.25	-161.6	
100	0.22	-20.50	4.10	173.1	0.089	-7.0	0.25	-175.0	
200	0.21	-26.30	4.10	159.8	0.089	-10.5	0.25	174.1	
400	0.21	-44.10	4.05	136.6	0.088	-19.0	0.24	161.4	
600	0.22	-62.60	4.00	114.1	0.091	-29.0	0.22	152.0	
800	0.23	-80.20	3.94	92.0	0.092	-39.5	0.20	145.1	
1000	0.24	-95.60	3.86	70.0	0.095	-50.4	0.19	140.5	
1200	0.24	-110.10	3.83	47.9	0.098	-61.4	0.18	135.4	
1400	0.24	-124.10	3.79	25.3	0.103	-73.6	0.17	130.1	
1600	0.24	-139.40	3.77	2.3	0.107	-86.7	0.17	118.1	
1800	0.22	-157.90	3.79	-21.7	0.113	-101.0	0.17	100.6	
2000	0.20	-177.90	3.79	-47.7	0.122	-117.5	0.17	73.4	
2200	0.16	-134.30	3.77	-76.5	0.131	-135.5	0.18	33.6	
2400	0.18	61.50	3.66	-109.9	0.139	-157.6	0.19	-15.6	

Model: AC2205		Vcc=+8V				Icc=56.17	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
30	1.61	1.52	12.42	-170	3.90	-20.1	
50	1.52	1.53	12.50	-177	1.00	-20.4	
100	1.48	1.53	12.56	174	0.53	-20.6	
200	1.46	1.52	12.57	161	0.35	-20.5	
400	1.46	1.48	12.51	138	0.30	-20.7	
600	1.48	1.42	12.45	117	0.30	-20.7	
800	1.50	1.34	12.36	95	0.30	-20.8	
1000	1.54	1.29	12.25	74	0.30	-20.8	
1200	1.57	1.26	12.18	52	0.30	-21.0	
1400	1.60	1.28	12.09	30	0.30	-20.9	
1600	1.64	1.33	12.07	8	0.31	-21.1	
1800	1.65	1.40	12.13	-15	0.32	-21.0	
2000	1.64	1.44	12.20	-40	0.34	-20.7	
2200	1.57	1.42	12.37	-68	0.40	-20.3	
2400	1.57	1.35	12.52	-100	0.48	-19.8	

LINEAR S-PARAMETERS

Model: AC2205		Vcc=+8V				Icc=56.17			
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
30	0.23	-29.70	4.18	-169.5	0.099	-5.4	0.21	-143.3	
50	0.21	-23.20	4.22	-177.0	0.096	-6.1	0.21	-159.6	
100	0.19	-19.40	4.25	173.5	0.094	-7.7	0.21	-174.5	
200	0.19	-22.80	4.25	160.7	0.094	-12.1	0.21	173.4	
400	0.19	-36.10	4.22	138.4	0.092	-22.8	0.19	159.6	
600	0.19	-51.20	4.20	116.6	0.092	-34.2	0.17	149.6	
800	0.20	-66.20	4.15	95.2	0.091	-45.7	0.14	143.9	
1000	0.21	-80.70	4.10	73.6	0.091	-57.3	0.13	144.4	
1200	0.22	-95.40	4.07	51.9	0.090	-68.5	0.12	148.6	
1400	0.23	-109.30	4.02	30.1	0.090	-81.2	0.12	155.2	
1600	0.24	-125.10	4.02	7.9	0.088	-93.5	0.14	153.9	
1800	0.25	-142.90	4.04	-15.3	0.089	-106.5	0.17	146.1	
2000	0.24	-164.50	4.07	-40.3	0.092	-119.0	0.18	129.1	
2200	0.22	162.70	4.16	-67.8	0.096	-133.4	0.17	106.3	
2400	0.22	108.80	4.22	-99.8	0.102	-149.9	0.15	73.1	