

# AC1218 AC1219 10 TO 1200 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC1218	AC1219
High Dynamic Range	+114 dBm	+117 dBm
High Output Power	+19.0 dBm	+22.0 dBm
High Third Order I.P.	+32.0 dBm	+33.0 dBm
High Performance Thin Film Standard Size TO-8 Package		

## SPECIFICATIONS\*

Parameter	Typical	Guaranteed*			
		0 to 50 °C		-55 to +85 °C	
Frequency (Min.)		5-1250 MHz		10-1200 MHz	
Small Signal Gain (Min.)	11.5 dB	10.5 dB		10.0 dB	
Gain Flatness (Max.)	±0.2 dB	±0.5 dB		±0.7 dB	
Noise Figure (Max.)	4.5 dB	5.5^ dB		6.5^ dB	
SWR (Max.)	Input/Output	1.8:1		2.0:1	
Power Output (Min.) dBm @ 1dB comp.		12V	15V	12V	15V
	AC1218	+16.0	+19.0	+15.0	+17.5
AC1219	+20.0	+22.0	+17.5	+20.5	
Reverse Isolation	16.0 dB	—		—	
DC Current (Max.) mA		45.0	65.0	50.0	68.0
	AC1218	70.0	88.0	75.0	93.0
AC1219				53.0	71.0
				78.0	96.0

\* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.  
^ 1.0 dB higher above 700 MHz.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 600 MHz	AC1218	AC1219
Second Order Harmonic Intercept Point	+51 dBm	+43 dBm
Second Order Two Tone Intercept Point	+45 dBm	+37 dBm
Third Order Two Tone Intercept Point	+33 dBm	+32 dBm

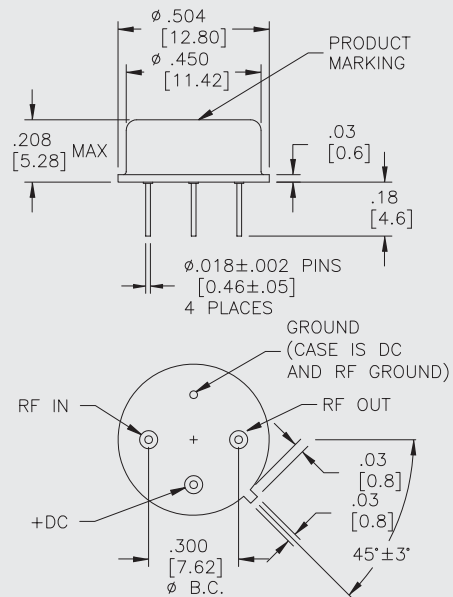
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature (AC1218)	+105 °C
Burn-in Temperature (AC1219)	+95 °C
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ; AC1218)	+34 °C/Watt
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ; AC1219)	+32 °C/Watt
Junction Temperature Rise Above Case (T <sub>jc</sub> ; AC1218)	+34.2 °C
Junction Temperature Rise Above Case (T <sub>jc</sub> ; AC1219)	+45.1 °C

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

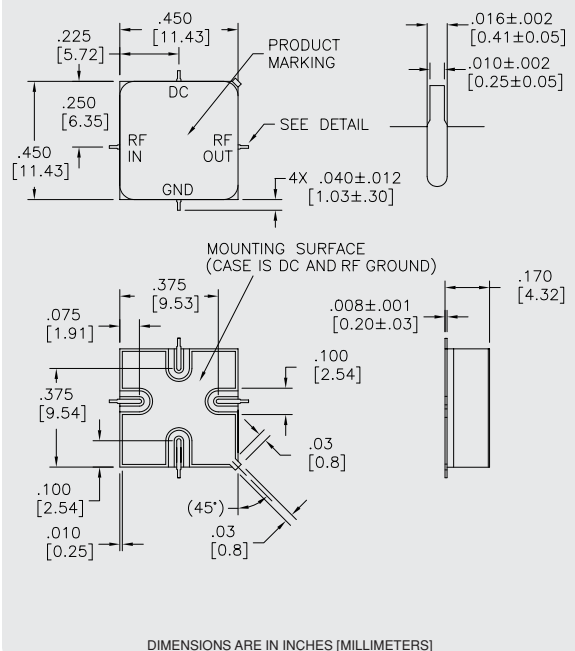
## AC1218/AC1219

### TO-8 Package for Amplifiers



## AS1218/AS1219

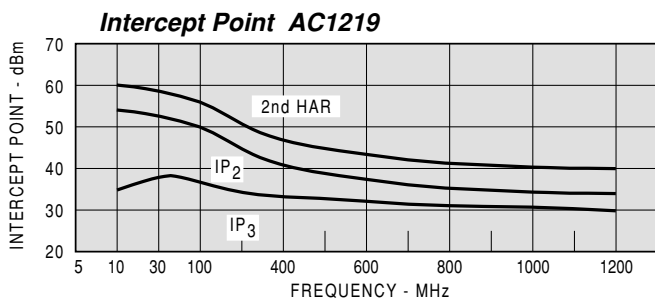
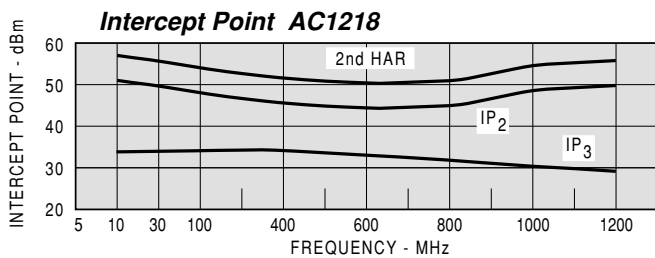
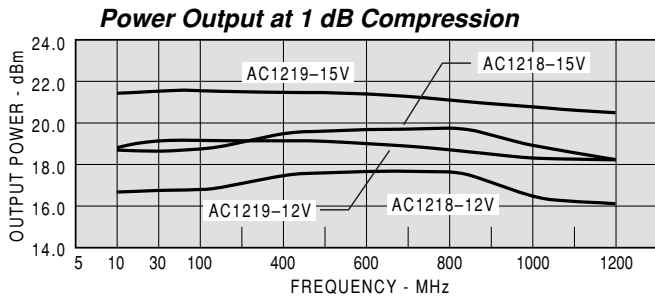
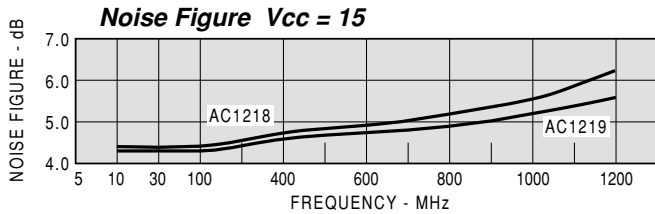
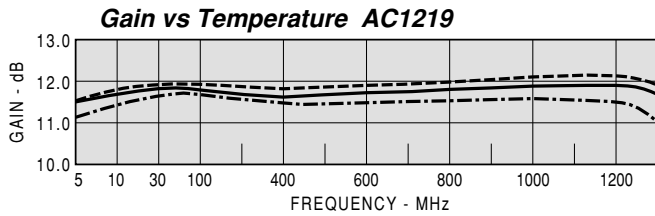
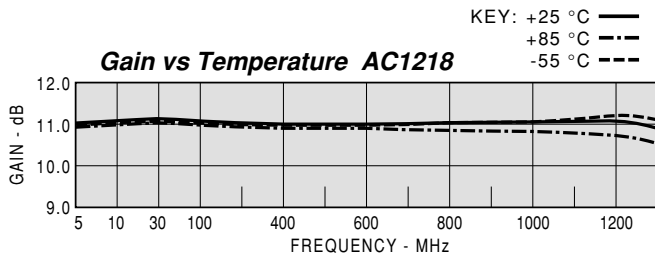
### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

## TYPICAL PERFORMANCE

## TYPICAL AUTOMATIC TEST DATA



Model: AC1219				Vcc= +15V			Icc= 88.44	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
5	1.62	1.38	11.14	-153		-17.0		
10	1.32	1.28	11.54	-167		-17.0		
30	1.20	1.22	11.79	-180		-16.8		
50	1.19	1.20	11.83	175	0.67	-16.8		
100	1.17	1.18	11.81	165	0.54	-16.7		
200	1.14	1.17	11.67	149	0.45	-16.7		
300	1.12	1.15	11.57	133	0.43	-16.7		
400	1.10	1.13	11.51	118	0.43	-16.7		
500	1.08	1.14	11.46	102	0.44	-16.7		
600	1.08	1.19	11.42	86	0.44	-16.7		
700	1.10	1.25	11.35	71	0.43	-16.7		
800	1.12	1.33	11.27	55	0.44	-16.7		
900	1.14	1.40	11.21	39	0.44	-16.7		
1000	1.16	1.46	11.13	23	0.45	-16.9		
1100	1.15	1.51	11.08	7	0.46	-17.0		
1200	1.10	1.53	11.04	-9	0.45	-17.0		

LINEAR S-PARAMETERS

Model: AC1219		Vcc= 15V						Icc= 88.44	
FREQ.	S11	S21		S12		S22			
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.24	-95.8	3.61	-153.3	0.141	23.6	0.16	-134.7	
10	0.14	-115.7	3.78	-167.0	0.142	11.6	0.12	-157.4	
30	0.09	-153.6	3.89	-179.6	0.145	2.3	0.10	178.4	
50	0.09	-169.2	3.91	174.9	0.145	-1.3	0.09	170.5	
100	0.08	169.9	3.89	165.1	0.145	-6.4	0.08	157.5	
200	0.07	144.4	3.83	148.7	0.146	-15.2	0.08	129.1	
300	0.06	123.3	3.79	133.0	0.146	-23.4	0.07	99.2	
400	0.05	98.7	3.76	117.7	0.146	-31.9	0.06	58.3	
500	0.04	65.0	3.74	102.1	0.147	-40.4	0.07	14.3	
600	0.04	22.9	3.72	86.5	0.147	-48.8	0.08	-23.7	
700	0.05	-16.9	3.69	71.0	0.147	-57.8	0.11	-51.5	
800	0.06	-41.4	3.66	55.1	0.146	-66.8	0.14	-74.0	
900	0.07	-63.0	3.63	39.4	0.145	-75.7	0.17	-93.7	
1000	0.07	-78.7	3.60	23.4	0.142	-84.7	0.19	-112.2	
1100	0.07	-87.4	3.58	7.3	0.142	-93.3	0.20	-130.8	
1200	0.05	-91.5	3.56	-9.2	0.141	-102.2	0.21	-149.9	

Model: AC1218				Vcc= +15V			Icc= 65.76	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
5	1.43	1.51	11.16	-171		-16.6		
10	1.39	1.46	11.20	-176		-16.6		
30	1.38	1.43	11.25	177	0.61	-16.5		
50	1.38	1.42	11.23	173	0.53	-16.5		
100	1.37	1.42	11.19	165	0.45	-16.5		
200	1.36	1.40	11.12	150	0.41	-16.6		
300	1.35	1.37	11.10	135	0.41	-16.6		
400	1.33	1.33	11.12	121	0.42	-16.6		
500	1.33	1.29	11.12	106	0.42	-16.5		
600	1.32	1.23	11.13	90	0.43	-16.5		
700	1.30	1.18	11.16	75	0.43	-16.5		
800	1.29	1.13	11.16	59	0.44	-16.4		
900	1.28	1.09	11.16	43	0.45	-16.5		
1000	1.30	1.05	11.15	26	0.46	-16.5		
1100	1.38	1.06	11.10	9	0.49	-16.6		
1200	1.50	1.10	10.97	-9	0.51	-16.7		

LINEAR S-PARAMETERS

Model: AC1218		Vcc= 15V						Icc= 65.76	
FREQ.	S11	S21		S12		S22			
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.18	-145.6	3.61	-170.9	0.148	10.5	0.20	166.7	
10	0.16	-161.9	3.63	-176.4	0.149	4.8	0.19	170.8	
30	0.16	-177.3	3.65	177.1	0.150	-0.6	0.18	172.7	
50	0.16	177.1	3.64	173.3	0.149	-2.9	0.17	172.3	
100	0.16	168.3	3.63	165.1	0.149	-7.3	0.17	168.5	
200	0.15	154.9	3.60	150.2	0.148	-15.0	0.17	157.8	
300	0.15	143.1	3.59	135.4	0.148	-22.4	0.16	146.9	
400	0.14	129.9	3.60	120.6	0.148	-29.8	0.14	136.1	
500	0.14	116.1	3.60	105.6	0.149	-37.8	0.12	124.7	
600	0.14	103.7	3.60	90.4	0.150	-45.6	0.10	113.3	
700	0.13	90.6	3.61	74.9	0.150	-53.9	0.08	100.2	
800	0.13	79.0	3.61	59.2	0.151	-62.6	0.06	84.8	
900	0.12	68.5	3.61	43.1	0.150	-71.3	0.04	68.1	
1000	0.13	57.8	3.61	26.4	0.150	-80.2	0.02	26.6	
1100	0.16	50.8	3.59	8.8	0.148	-89.9	0.03	-33.1	
1200	0.20	43.6	3.54	-9.3	0.146	-99.8	0.05	-65.4	