

AC518 AC519

5 TO 500 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC518	AC519
High Gain	28.0 dB	27.5 dB
High Output Power	+19.3 dBm	+21.8 dBm
High Third Order I.P.	+32.0 dBm	+33.0 dBm
Low Noise Figure	4.0 dB	3.5 dB

High Performance Thin Film
Available in Surface Mount

SPECIFICATIONS

Parameter	Typical	Guaranteed*	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	3-600 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)			
AC518	28.0 dB	26.5 dB	26.0 dB
AC519	27.5 dB	26.5 dB	26.0 dB
Gain Flatness (Max.)	< ±0.25 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)			
AC518	4.0 dB	4.7 dB	5.2 dB
AC519	3.5 dB	4.5 dB	5.0 dB
SWR (Max.)	Input/Output	1.7:1	1.8:1
Power Output (Min.) @ 1dB comp.			
AC518	+19.3 dBm	+18.5 dBm	+17.0 dBm
AC519	+21.8 dBm	+20.5 dBm	+20.0 dBm
DC Current (Max.)			
AC518	96.0 mA	103.0 mA	110.0 mA
AC519	127.0 mA	135.0 mA	140.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25° C	AC518	AC519
Second Order Harmonic Intercept Point	55 dBm	50 dBm
Second Order Two Tone Intercept Point	50 dBm	44 dBm
Third Order Two Tone Intercept Point	32 dBm	33 dBm

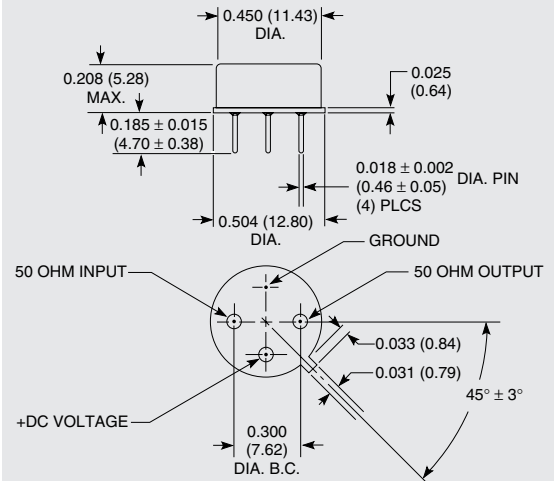
ABSOLUTE MAXIMUM RATINGS

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 (AC518/AC519)	+85° C/+105° C
Thermal Resistance ¹ (θjc; AC518)	+35° C/Watt
Thermal Resistance ¹ (θjc; AC519)	+20° C/Watt
Junction Temperature Rise Above Case (Tjc; AC518)	+50° C
Junction Temperature Rise Above Case (Tjc; AC519)	+37.4° C

¹ Thermal resistance is based on total power dissipation.

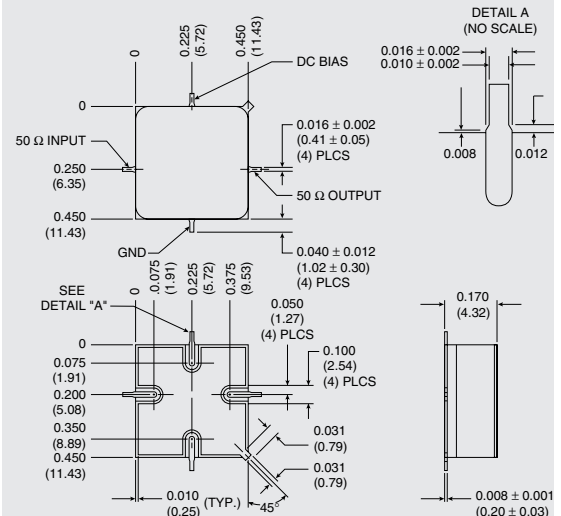
AC518/AC519

TO-8 Package for Amplifiers



AS518/AS519

SMT0-8 Package for Amplifiers



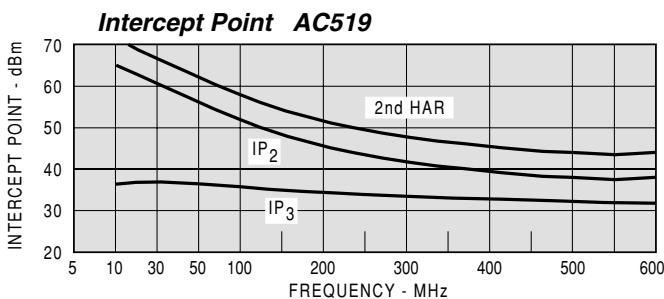
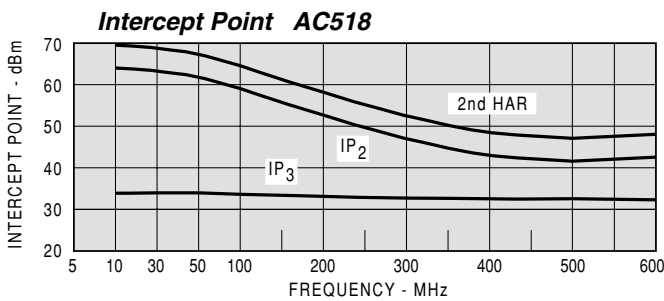
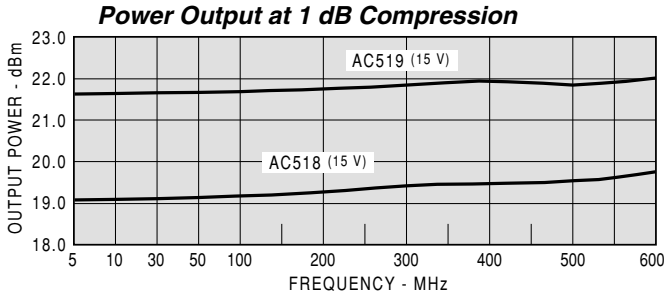
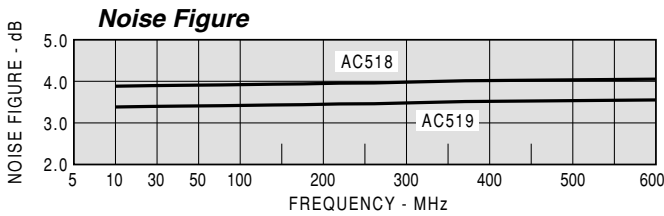
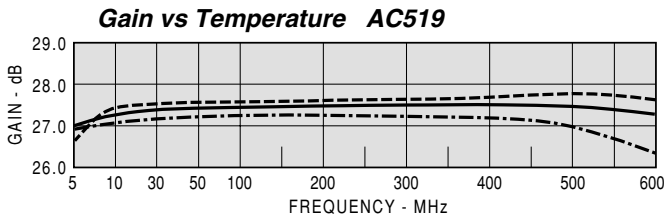
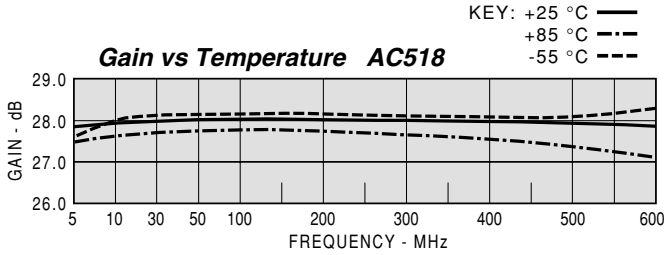
DIMENSIONS ARE IN INCHES (MILLIMETERS)

AC518/AC519



TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC519			Vcc=+15V			lcc=129.18	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.09	1.09	26.88	36			-37.1
10	1.12	1.05	27.27	16			-37.0
20	1.15	1.03	27.43	4	3.4		-36.7
50	1.17	1.05	27.51	-11	1.4		-36.7
100	1.19	1.06	27.48	-29	0.97		-36.9
200	1.26	1.07	27.43	-60	0.88		-36.7
300	1.34	1.10	27.36	-92	0.86		-36.6
400	1.42	1.17	27.32	-123	0.87		-36.1
500	1.44	1.27	27.27	-155	0.89		-35.2
600	1.39	1.46	27.26	172	0.92		-34.0
700	1.27	1.82	27.20	137	0.98		

Model: AC519			LINEAR S-PARAMETERS						lcc=129.18	
FREQ.			S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.04	-53.0	22.09	35.7	0.014	35.0	0.04	-84.7		
10	0.06	-13.2	23.11	16.1	0.014	17.6	0.02	-60.5		
20	0.07	-8.6	23.53	3.7	0.014	10.6	0.02	-17.6		
50	0.08	-19.4	23.73	-11.4	0.015	0.5	0.02	0.7		
100	0.09	-36.7	23.67	-28.8	0.015	-6.8	0.03	0.5		
200	0.11	-64.5	23.53	-60.5	0.014	-17.1	0.04	1.0		
300	0.15	-84.1	23.35	-91.5	0.015	-24.1	0.05	-3.7		
400	0.17	-102.4	23.21	-122.9	0.015	-32.3	0.08	-14.4		
500	0.18	-122.2	23.10	-154.8	0.016	-40.8	0.12	-30.8		
600	0.16	-148.9	23.08	172.0	0.017	-54.9	0.19	-53.3		
700	0.12	163.0	22.91	136.7	0.020	-69.6	0.29	-77.2		

Model: AC519			Vcc=+12V			lcc=102.49	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.11	1.11	26.71	35			-37.1
10	1.14	1.06	27.10	16			-36.7
20	1.16	1.04	27.26	3	3.4		-36.6
50	1.18	1.05	27.33	-12	1.4		-36.6
100	1.20	1.06	27.30	-29	0.97		-36.8
200	1.28	1.09	27.25	-61	0.89		-36.2
300	1.37	1.13	27.17	-92	0.87		-36.4
400	1.45	1.20	27.12	-124	0.88		-35.9
500	1.47	1.32	27.09	-156	0.9		-35.7
600	1.43	1.53	27.09	170	0.93		-34.6
700	1.33	1.94	27.02	134	1		-33.8

Model: AC518			Vcc=+15V			lcc=96.59	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.24	1.07	27.71	30			-37.6
10	1.13	1.15	27.84	13			-37.1
20	1.08	1.18	27.91	2	3		-36.7
50	1.08	1.19	27.94	-11	1.3		-36.8
100	1.11	1.20	27.93	-28	0.9		-36.9
200	1.20	1.21	27.96	-58	0.84		-36.6
300	1.31	1.20	28.01	-88	0.84		-36.0
400	1.38	1.21	28.04	-119	0.86		-35.9
500	1.45	1.24	28.01	-151	0.89		-35.6
600	1.53	1.40	27.84	175	0.93		-34.2
700	1.76	1.77	27.44	140	0.97		-33.7

Model: AC518			LINEAR S-PARAMETERS						lcc=96.59	
FREQ.			S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.11	-109.0	24.28	30.1	0.013	37.2	0.03	47.2		
10	0.06	-127.0	24.66	12.8	0.014	17.7	0.07	15.1		
20	0.04	-157.0	24.85	2.1	0.015	10.7	0.08	7.7		
50	0.04	157.5	24.94	-11.5	0.014	0.6	0.09	2.3		
100	0.05	128.0	24.91	-27.7	0.014	-0.6	0.09	-2.5		
200	0.09	106.5	25.01	-57.9	0.015	-10.1	0.09	-10.6		
300	0.13	97.5	25.14	-88.1	0.016	-10.7	0.09	-25.0		
400	0.16	93.6	25.24	-119.1	0.016	-17.0	0.09	-52.2		
500	0.18	94.6	25.16	-151.1	0.017	-26.6	0.11	-95.6		
600	0.21	103.0	24.66	175.3	0.019	-38.5	0.17	-142.0		
700	0.27	113.5	23.55	140.4	0.021	-51.5	0.28	-179.2		

Model: AC518			Vcc=+12V			lcc=76.42	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.24	1.07	27.51	29			-37.4
10	1.12	1.15	27.65	13			-37.1
20	1.07	1.17	27.72	2	2.9		-37.2
50	1.06	1.19	27.75	-12	1.3		-36.6
100	1.09	1.19	27.74	-28	0.9		-36.7
200	1.18	1.21	27.78	-58	0.84		-36.9
300	1.27	1.22	27.85	-89	0.85		-36.3
400	1.34	1.22	27.90	-120	0.87		-35.7
500	1.43	1.26	27.89	-152	0.9		-34.8
600	1.55	1.42	27.72	174	0.95		-34.3
700	1.85	1.81	27.29	138	0.98		-33.2