

AC1018

10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC1018
High Output Level	+15.8 dBm
High Third Order I.P.	+30.0 dBm
Low VSWR	< 1.4:1
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1100 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)	14.5 dB	14.0 dB	13.5 dB
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	3.8 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	< 1.5:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+15.8 dBm	+15.0 dBm	+14.5 dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	44.0 mA	47.0 mA	50.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC1018
Second Order Harmonic Intercept Point	+49 dBm
Second Order Two Tone Intercept Point	+44 dBm
Third Order Two Tone Intercept Point	+30 dBm

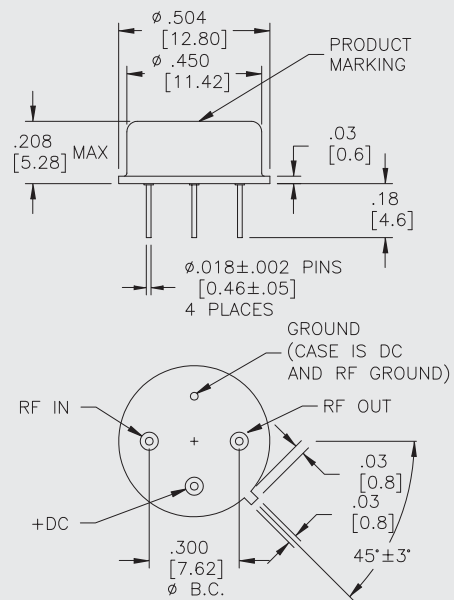
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+100 °C
Thermal Resistance ¹ (θjc)	+47 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+33.2 °C

¹Thermal resistance is based on total power dissipation.

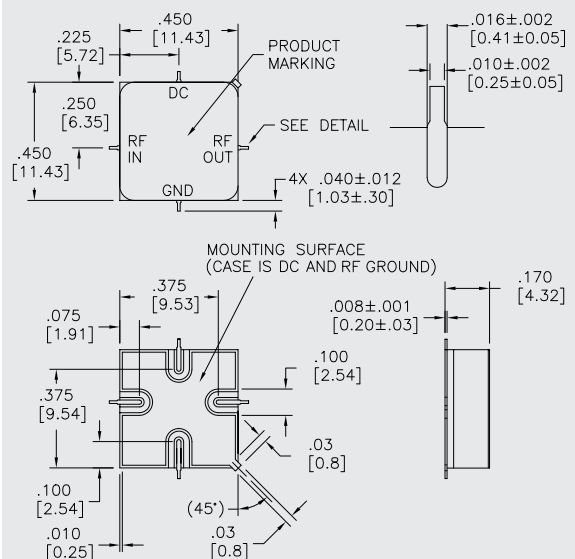
AC1018

TO-8 Package for Amplifiers



AS1018

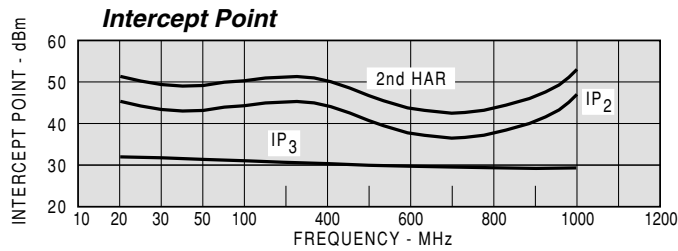
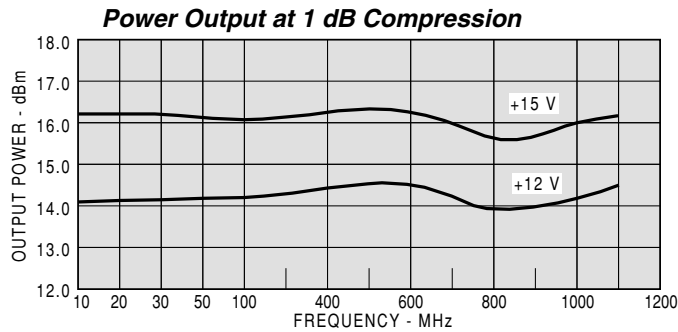
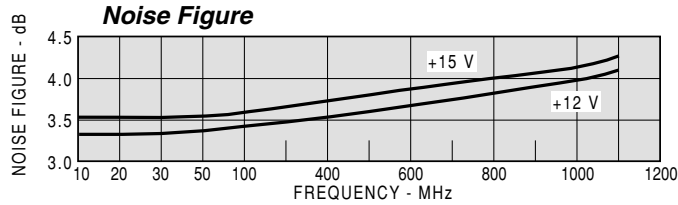
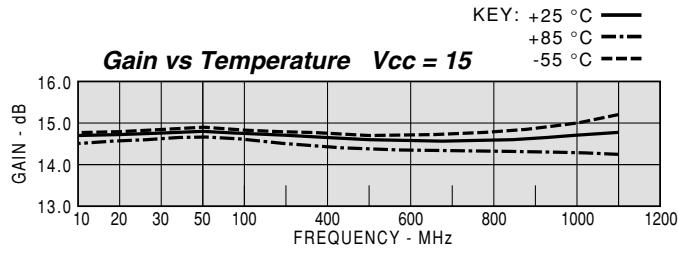
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1018				Vcc=+15V		Icc=44.80	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
10	1.12	1.14	14.9			-19.1	
20	1.07	1.08	15.0			-19.0	
50	1.03	1.05	15.0	0.675		-18.9	
100	1.03	1.04	14.9	0.503		-19.0	
200	1.06	1.03	14.9	0.462		-19.0	
300	1.09	1.03	14.8	0.461		-18.9	
400	1.11	1.03	14.8	0.458		-18.8	
500	1.13	1.04	14.8	0.467		-18.5	
600	1.13	1.05	14.7	0.474		-18.4	
700	1.14	1.07	14.7	0.476		-18.0	
800	1.12	1.10	14.7	0.491		-17.9	
900	1.12	1.15	14.8	0.525		-17.6	
1000	1.08	1.24	14.8	0.542		-17.3	
1100	1.16	1.43	14.9	0.596		-16.9	

Model: AC1018				LINEAR S-PARAMETERS								Icc=44.80		
				Vcc=+15V				S22						
FREQ.	S11		S21		S12		S22		MAG	ANG	MAG	ANG		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG						
10	0.05	-76.6	5.54	-176.3	0.111	5.0	0.07	118.4						
20	0.03	-84.3	5.61	179.9	0.112	2.0	0.04	118.7						
50	0.02	-85.1	5.64	172.4	0.113	-3.0	0.02	117.9						
100	0.01	-80.2	5.58	163.5	0.112	-7.0	0.02	125.9						
200	0.03	-92.6	5.55	146.7	0.112	-15.0	0.02	108.2						
300	0.04	-91.2	5.49	130.1	0.113	-23.0	0.01	65.5						
400	0.05	-94.7	5.50	113.8	0.115	-30.0	0.01	-9.7						
500	0.06	-101.4	5.47	96.9	0.119	-40.0	0.02	-56.6						
600	0.06	-109.2	5.46	79.9	0.120	-48.0	0.02	-105.3						
700	0.06	-122.4	5.46	62.8	0.126	-57.0	0.04	-137.5						
800	0.06	-146.0	5.46	44.9	0.128	-67.0	0.05	176.3						
900	0.06	-173.9	5.49	26.3	0.132	-78.0	0.07	139.9						
1000	0.04	131.4	5.52	7.0	0.137	-91.0	0.11	99.1						
1100	0.07	45.1	5.59	-14.9	0.143	-105.0	0.18	64.3						
1200	0.19	-1.0	5.51	-39.1	0.148	-121.0	0.26	30.7						
1300	0.39	-30.6	5.14	-66.8	0.144	-141.0	0.38	-5.8						

Model: AC1018				Vcc=+12V		Icc=35.63	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
10	1.12	1.13	14.8			-19.1	
20	1.07	1.07	14.9			-19.0	
50	1.04	1.04	14.9	0.664		-19.0	
100	1.03	1.02	14.8	0.514		-19.0	
200	1.07	1.01	14.8	0.467		-18.9	
300	1.11	1.01	14.7	0.466		-18.8	
400	1.14	1.03	14.7	0.458		-18.7	
500	1.15	1.05	14.7	0.468		-18.4	
600	1.15	1.08	14.6	0.476		-18.2	
700	1.15	1.11	14.7	0.483		-17.9	
800	1.13	1.16	14.6	0.500		-17.7	
900	1.13	1.24	14.7	0.535		-17.3	
1000	1.12	1.35	14.8	0.546		-16.9	
1100	1.23	1.57	14.8	0.621		-16.6	

Model: AC1018				LINEAR S-PARAMETERS								Icc=35.63		
				Vcc=+12V				S22						
FREQ.	S11		S21		S12		S22		MAG	ANG	MAG	ANG		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG						
10	0.06	-70.5	5.50	-176.4	0.111	5.0	0.06	111.7						
20	0.03	-76.7	5.54	179.7	0.112	1.0	0.04	104.2						
50	0.02	-72.6	5.57	172.3	0.113	-3.0	0.02	97.2						
100	0.02	-83.9	5.51	163.3	0.113	-7.0	0.01	101.5						
200	0.03	-89.5	5.48	146.4	0.113	-15.0	0.01	89.2						
300	0.05	-92.8	5.43	129.8	0.115	-22.0	0.01	15.4						
400	0.07	-102.1	5.43	113.3	0.116	-30.0	0.01	-70.4						
500	0.07	-109.4	5.40	96.5	0.120	-38.0	0.02	-100.8						
600	0.07	-120.7	5.39	79.1	0.122	-47.0	0.04	-135.8						
700	0.07	-135.5	5.41	61.8	0.127	-56.0	0.05	-162.9						
800	0.06	-164.1	5.39	43.8	0.131	-67.0	0.08	163.9						
900	0.06	167.2	5.45	24.8	0.136	-78.0	0.11	135.1						
1000	0.06	109.3	5.48	5.0	0.142	-91.0	0.15	100.8						
1100	0.10	40.9	5.53	-17.3	0.148	-105.0	0.22	68.7						
1200	0.22	-1.3	5.42	-42.2	0.153	-121.0	0.31	34.8						
1300	0.42	-32.2	4.98	-70.4	0.148	-141.0	0.41	-2.5						