

# AC545 AC547

## 10 TO 500 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC545	AC547
Low Noise Figure . . . . .	2.5 dB	3.3 dB
Medium Output Level. . . . .	+9.3 dBm	15.5 dBm
High Third Order I.P. . . . .	+25.0 dBm	+30.0 dBm
High Efficiency		
High Performance Thin Film		
Standard Size TO-8		

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)		10-600 MHz	10-500 MHz
Small Signal Gain (Min.)			
AC545	12.8 dB	12.5 dB	12.0 dB
AC547	13.0 dB	12.5 dB	12.0 dB
Gain Flatness (Max.)	< ±0.25 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)			
AC545	2.5 dB	3.0 dB	3.5 dB
AC547	3.3 dB	3.8 dB	4.5 dB
SWR (Max.)	Input/Output	1.5:1	2.0:1
Power Output (Min.) @ 1dB comp.			
AC545	+9.3 dBm	+8.0 dBm	+7.5 dBm
AC547	+15.5 dBm	+14.5 dBm	+14.0 dBm
DC Current (Max.)			
AC545	24.0 mA	27.0 mA	30.0 mA
AC547	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	AC545	AC547
Second Order Harmonic Intercept Point . . . . .	+39 dBm	+48 dBm
Second Order Two Tone Intercept Point . . . . .	+33 dBm	+42 dBm
Third Order Two Tone Intercept Point . . . . .	+25 dBm	+30 dBm

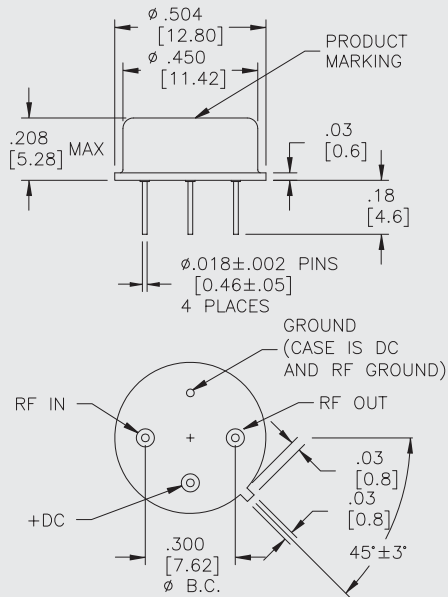
### ABSOLUTE MAXIMUM RATINGS

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.) . . . . .	50 Milliwatts
Maximum Peak Power (3 μsec Max.) . . . . .	0.5 Watt
Burn-in Temperature . . . . .	+105 °C
Thermal Resistance <sup>1</sup> (θjc; AC545) . . . . .	+56 °C/Watt
Thermal Resistance <sup>1</sup> (θjc; AC547) . . . . .	+38 °C/Watt
Junction Temperature Rise Above Case (Tjc; AC545) . . . . .	+22.5 °C
Junction Temperature Rise Above Case (Tjc; AC547) . . . . .	+26.5 °C

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

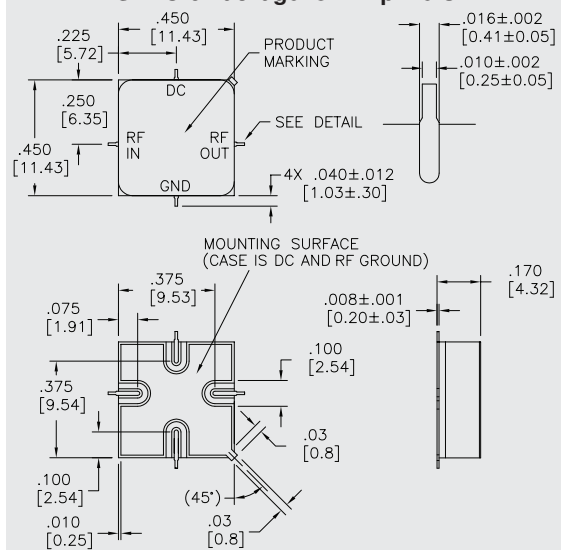
### AC545/AC547

#### TO-8 Package for Amplifiers



### AS545/AS547

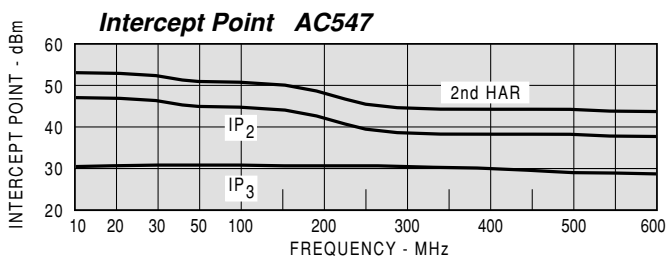
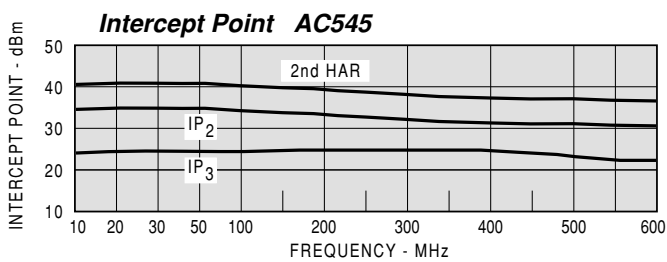
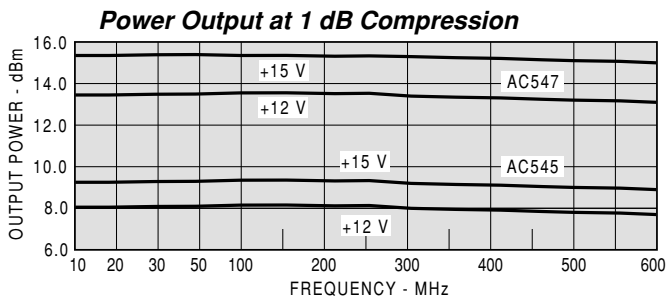
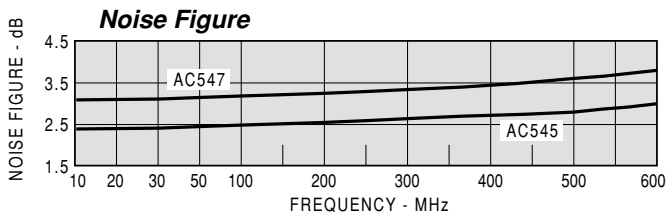
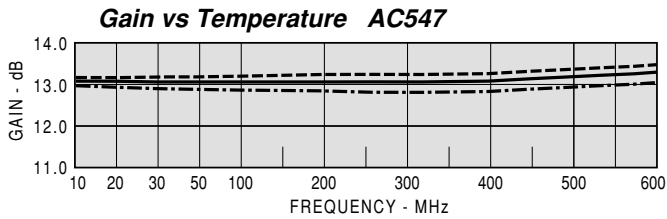
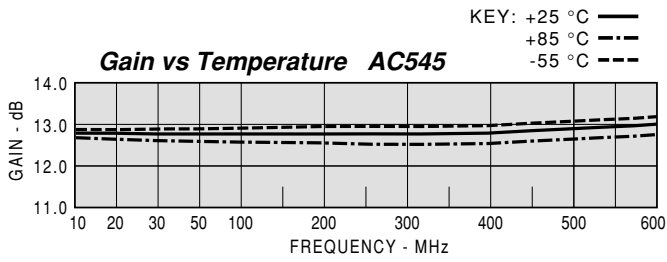
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

## TYPICAL PERFORMANCE

## TYPICAL AUTOMATIC TEST DATA



Model: AC547				Vcc=+15V		Icc=44.84	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT		NSEC			
10	1.16	1.10	13.1				-17.0
20	1.15	1.10	13.1				-17.0
50	1.16	1.10	13.1	0.558			-17.1
100	1.15	1.14	13.0	0.488			-17.1
200	1.16	1.22	13.0	0.502			-17.6
300	1.21	1.29	13.0	0.497			-17.5
400	1.28	1.37	13.1	0.507			-17.6
500	1.44	1.46	13.2	0.531			-17.8
600	1.63	1.50	13.2	0.567			-18.1

Model: AC547				Vcc=+15V				Icc=44.84	
FREQ.	S11		S21		S12		S22		
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.07	-173.8	4.52	-179.9	0.142	178.0	0.05	153.3	
20	0.07	178.9	4.50	177.1	0.141	177.0	0.05	153.0	
50	0.07	-178.6	4.50	170.8	0.140	173.0	0.05	138.6	
100	0.07	-176.7	4.45	162.1	0.139	166.0	0.06	115.7	
200	0.08	-171.2	4.48	144.1	0.136	153.0	0.10	87.5	
300	0.09	-162.8	4.48	126.3	0.134	140.0	0.13	68.8	
400	0.12	-165.3	4.54	107.9	0.132	127.0	0.16	53.6	
500	0.18	-173.3	4.57	88.9	0.128	114.0	0.19	45.0	
600	0.24	172.4	4.56	68.5	0.125	101.0	0.20	38.9	
700	0.31	154.8	4.56	48.2	0.120	88.0	0.20	31.3	

Model: AC547				Vcc=+12V		Icc=35.86	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT		NSEC			
10	1.15	1.09	13.0				-17.0
20	1.14	1.08	13.0				-17.0
50	1.14	1.09	13.0	0.570			-17.1
100	1.14	1.12	12.9	0.493			-17.2
200	1.17	1.18	12.9	0.508			-17.3
300	1.23	1.24	12.9	0.498			-17.5
400	1.32	1.31	13.0	0.515			-17.6
500	1.48	1.38	13.2	0.541			-17.9
600	1.69	1.42	13.1	0.553			-18.1

Model: AC545				Vcc=+15V		Icc=24.29	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT		NSEC			
10	1.10	1.07	12.8				-17.4
20	1.09	1.06	12.7				-17.4
50	1.10	1.07	12.7	0.546			-17.5
100	1.09	1.12	12.6	0.475			-17.5
200	1.09	1.22	12.7	0.481			-17.7
300	1.12	1.30	12.7	0.473			-17.9
400	1.20	1.40	12.8	0.484			-18.1
500	1.33	1.48	13.0	0.511			-18.4
600	1.51	1.50	13.1	0.543			-18.7

Model: AC545				Vcc=+12V		Icc=19.16	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT		NSEC			
10	1.05	1.04	12.7				-17.3
20	1.04	1.03	12.7				-17.3
50	1.06	1.04	12.7	0.559			-17.4
100	1.09	1.06	12.6	0.472			-17.4
200	1.17	1.11	12.6	0.488			-17.6
300	1.29	1.15	12.7	0.489			-17.8
400	1.44	1.19	12.8	0.507			-18.1
500	1.65	1.24	12.9	0.532			-18.4
600	1.91	1.29	12.7	0.564			-18.9