

AC543 AC544

10 TO 500 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values

	AC543	AC544
Low Noise Figure.....	2.5 dB	2.7 dB
Medium Output Level.....	+10.0 dBm	+13.5 dBm
High Third Order I.P.....	+26.0 dBm	+29.0 dBm
High Efficiency		
High Performance Thin Film		

SPECIFICATIONS

Parameter	Typical	Guaranteed*	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	10-600 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)			
AC543	11.3 dB	10.5 dB	10.0 dB
AC544	11.5 dB	10.5 dB	10.0 dB
Gain Flatness (Max.)	< ±0.25 dB	±0.4 dB	±0.6 dB
Noise Figure (Max.)			
AC543	2.5 dB	3.0 dB	3.5 dB
AC544	2.7 dB	3.3 dB	3.8 dB
SWR (Max.) Input/Output	1.5:1	1.8:1	2.0:1
Power Output (Min.)			
@ 1dB comp. AC543	+10.0 dBm	+9.0 dBm	+8.5 dBm
AC544	+13.5 dBm	+12.5 dBm	+12.0 dBm
DC Current (Max.)			
AC543	24.0 mA	27.0 mA	30.0 mA
AC544	35.0 mA	38.0 mA	40.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25° C

	AC543	AC544
Second Order Harmonic Intercept Point.....	+44 dBm	+48 dBm
Second Order Two Tone Intercept Point.....	+38 dBm	+42 dBm
Third Order Two Tone Intercept Point.....	+26 dBm	+29 dBm

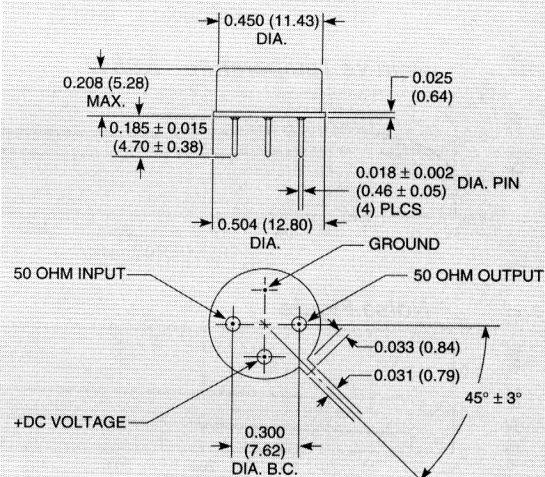
ABSOLUTE MAXIMUM RATINGS

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 ¹ (θjc; AC543).....	+55° C/Watt
Thermal Resistance ¹ (θjc; AC544).....	+66° C/Watt
Junction Temperature Rise Above Case (Tjc; AC543).....	+22.1° C
Junction Temperature Rise Above Case (Tjc; AC544).....	+37.8° C

¹ Thermal resistance is based on total power dissipation.

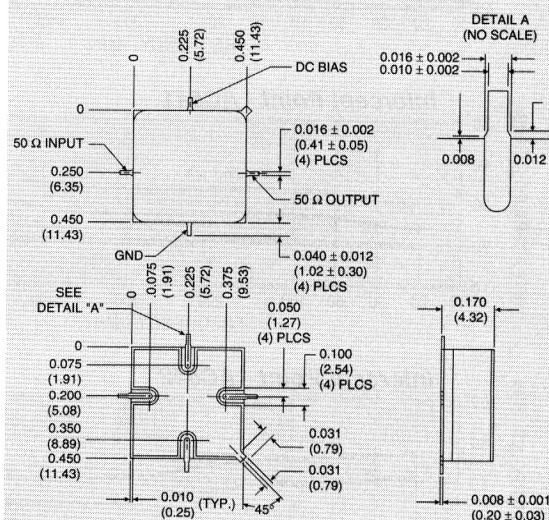
AC543/AC544

TO-8 Package for Amplifiers



AS543/AS544

SMT0-8 Package for Amplifiers

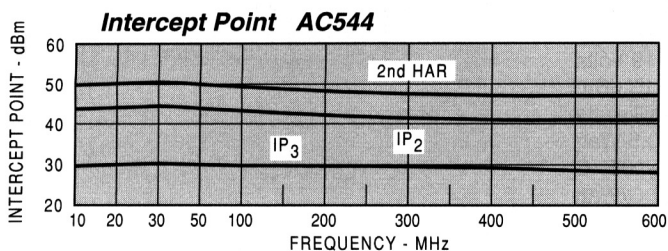
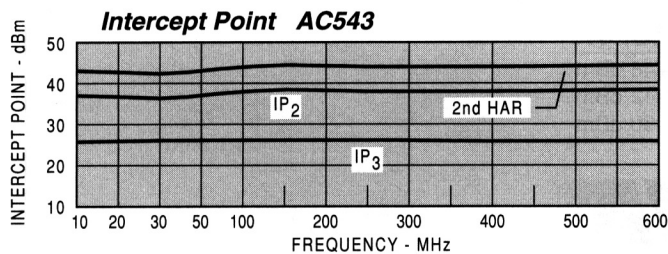
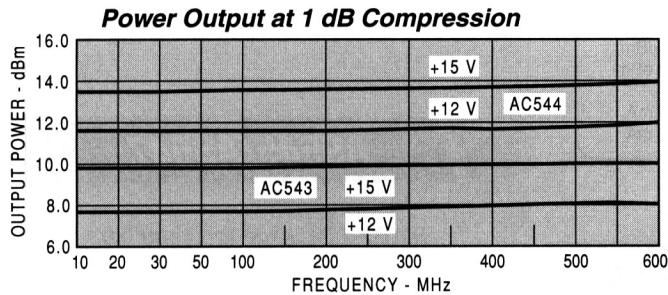
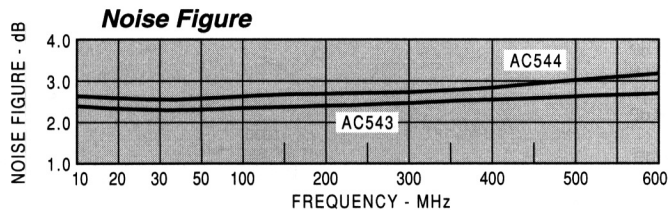
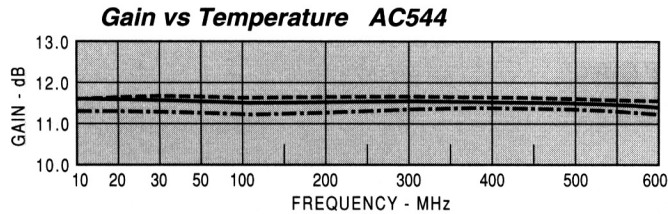
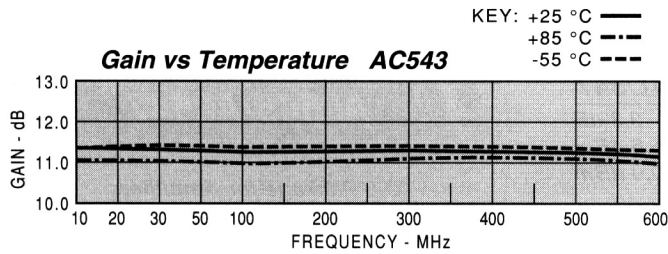


If DC is present on RF input/output, this model requires additional external blocking capacitors.

DIMENSIONS ARE IN INCHES (MILLIMETERS)

AC543/AC544

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC543			Vcc=+15V		Icc= 23.55
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.03	1.14	11.2		-19.1
10	1.03	1.09	11.2		-19.2
20	1.03	1.07	11.2	0.907	-19.3
50	1.04	1.07	11.2	0.515	-19.3
100	1.04	1.11	11.2	0.440	-19.4
200	1.06	1.19	11.1	0.425	-19.4
300	1.05	1.26	11.2	0.426	-19.3
400	1.02	1.30	11.3	0.438	-19.1
500	1.06	1.30	11.3	0.457	-19.0
600	1.18	1.27	11.4	0.471	-18.8

Model: AC543			LINEAR S-PARAMETERS				Icc= 23.55	
FREQ.			Vcc=+15V					
S11			S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.02	-44.1	3.62	-174.8	0.111	175.0	0.06	125.4
10	0.01	-10.8	3.64	-178.6	0.109	176.0	0.04	130.1
20	0.02	-1.2	3.64	178.2	0.109	176.0	0.03	133.2
50	0.02	11.9	3.63	172.6	0.108	172.0	0.04	122.9
100	0.02	27.6	3.61	164.7	0.108	165.0	0.05	103.5
200	0.03	31.6	3.60	149.4	0.108	152.0	0.08	79.9
300	0.03	29.3	3.62	134.0	0.109	138.0	0.11	64.6
400	0.01	50.6	3.65	118.3	0.110	125.0	0.13	52.6
500	0.03	155.5	3.69	101.9	0.113	112.0	0.13	43.0
600	0.08	154.9	3.70	84.8	0.115	98.0	0.12	38.5
700	0.16	143.9	3.66	67.0	0.118	84.0	0.10	46.4

Model: AC543			Vcc=+12V		Icc=18.89
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.05	1.13	11.0		-19.2
10	1.05	1.08	11.1		-19.3
20	1.06	1.06	11.1	0.931	-19.4
50	1.06	1.06	11.1	0.509	-19.4
100	1.06	1.10	11.0	0.445	-19.5
200	1.07	1.17	11.0	0.423	-19.5
300	1.06	1.24	11.0	0.426	-19.4
400	1.02	1.27	11.1	0.438	-19.2
500	1.06	1.27	11.2	0.454	-19.1
600	1.19	1.24	11.2	0.476	-18.9

Model: AC544			Vcc=+15V		Icc=35.32
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.23	1.14	11.4		-18.2
10	1.24	1.14	11.5		-18.2
20	1.25	1.14	11.5	0.847	-18.2
50	1.25	1.15	11.5	0.509	-18.3
100	1.24	1.18	11.4	0.425	-18.3
200	1.21	1.25	11.5	0.412	-18.3
300	1.17	1.32	11.5	0.417	-18.2
400	1.13	1.37	11.7	0.423	-18.2
500	1.13	1.39	11.8	0.452	-18.1
600	1.24	1.35	11.9	0.479	-18.1

Model: AC544			Vcc=+12V		Icc=28.41
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.24	1.15	11.3		-18.2
10	1.26	1.15	11.4		-18.2
20	1.26	1.15	11.4	0.823	-18.3
50	1.26	1.16	11.4	0.518	-18.3
100	1.26	1.18	11.4	0.425	-18.3
200	1.23	1.25	11.4	0.411	-18.3
300	1.18	1.31	11.5	0.418	-18.3
400	1.14	1.36	11.6	0.423	-18.3
500	1.14	1.36	11.7	0.450	-18.2
600	1.24	1.32	11.8	0.478	-18.2