TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

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	Guaranteed -55 to +85 °C
Frequency (Min.)		**10-600 MHz**	**10-500 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	1.8:1	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

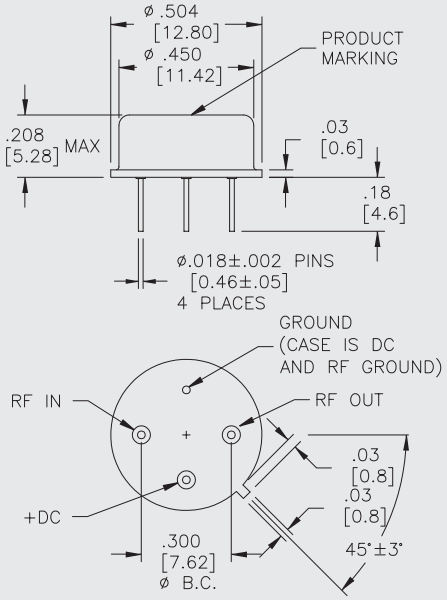
ABSOLUTE MAXIMUM RATINGS

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[1] (θjc; AC545)	+56 °C/Watt
Thermal Resistance[1] (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

[1]Thermal resistance is based on total power dissipation.

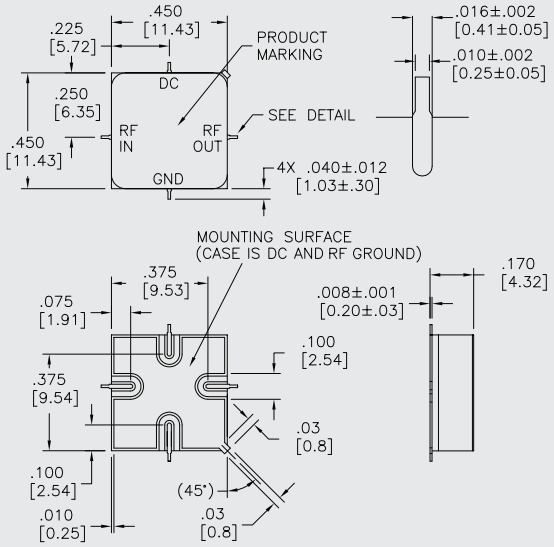
AC545/AC547

TO-8 Package for Amplifiers



AS545/AS547

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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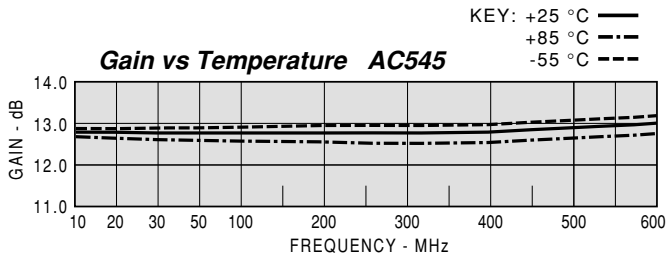
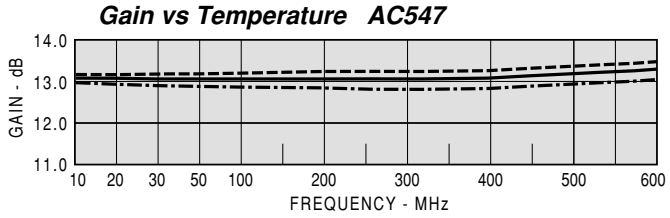
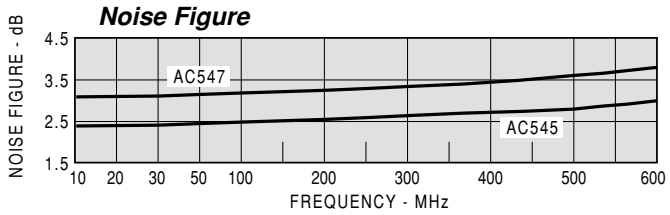
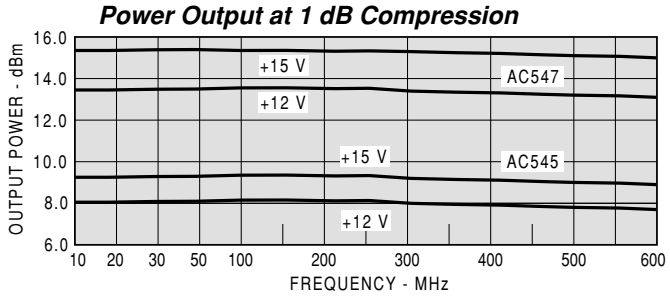
AC545/AC547

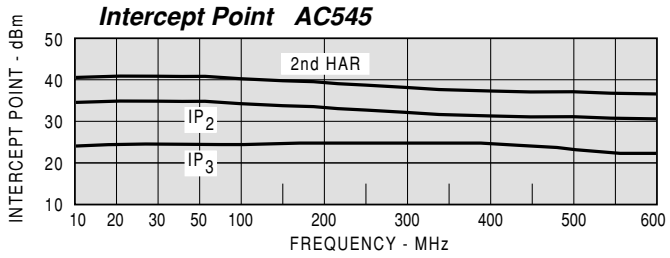
TYPICAL PERFORMANCE

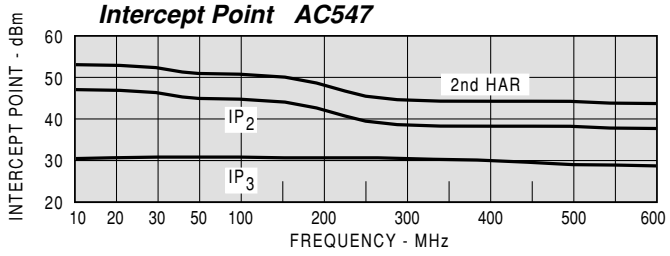












TYPICAL AUTOMATIC TEST DATA

Model: AC547 Vcc=+15V Icc=44.84

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
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	-17.3
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

LINEAR S-PARAMETERS

Model: AC547 Vcc=+15V Icc=44.84

FREQ.	S11		S21		S12		S22	
MHz	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 MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
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 MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
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 MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
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