

# AC4545

## 800 TO 4500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC4545
Ultra Broad Bandwidth .....	800-4500 MHz
High Gain .....	17.2 dB
Low Noise Figure .....	< 4.0 dB
High Output Level .....	+17.5 dBm
High Performance Thin Film	
Standard Size TO-8	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	750-4700 MHz	800-4500 MHz	800-4500 MHz
Small Signal Gain (Min.)	17.2 dB	16.5 dB	15.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.8 dB	±0.9 dB
Noise Figure (Max.)			
800-2000 MHz	< 4.7 dB	5.5 dB	6.0 dB
2000-4500 MHz	< 4.0 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	1.4:1	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	+17.5 <sup>^</sup> dBm	+16.5 <sup>^</sup> dBm	+15.5 <sup>^</sup> dBm
DC Current (Max.)	85.0 mA	88.0 mA	92.0 mA

\* Measured in a 50-ohm system at +15.0 Vdc unless otherwise specified.  
<sup>^</sup> 1.0 dB lower below 1500 MHz.

### INTERMODULATION PERFORMANCE

Typical @ 25 °C; 2000 MHz	AC4545
Second Order Harmonic Intercept Point .....	+46 dBm
Second Order Two Tone Intercept Point .....	+40 dBm
Third Order Two Tone Intercept Point .....	+29 dBm

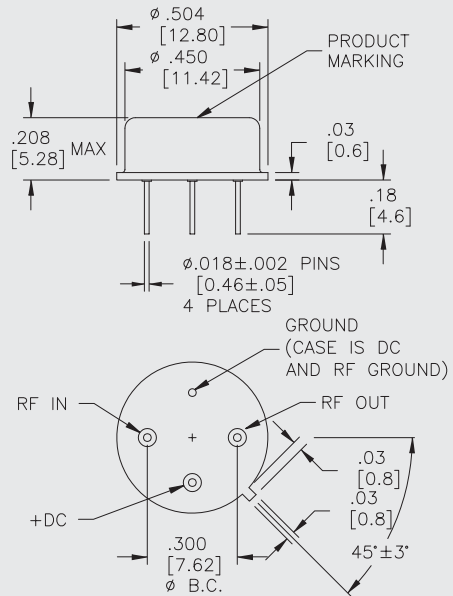
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+17 Volts
Maximum Continuous RF Input Power .....	+15 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	100 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.25 Watt
Burn-in Temperature .....	+105 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+17 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+21.9 °C

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

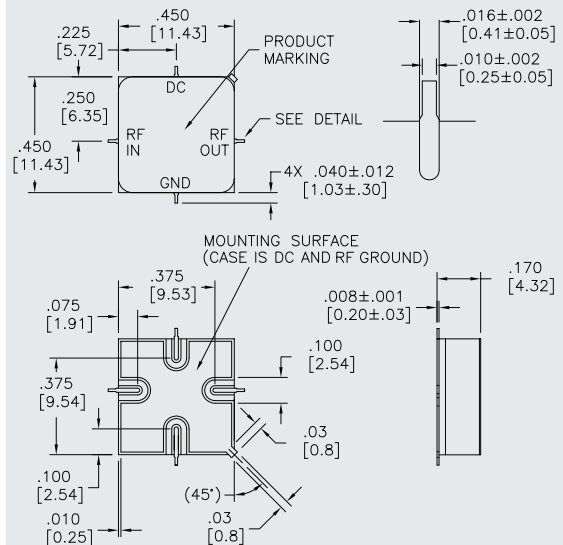
### AC4545

#### TO-8 Package for Amplifiers



### AS4545

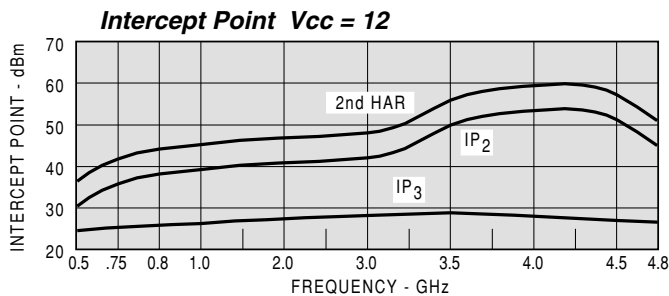
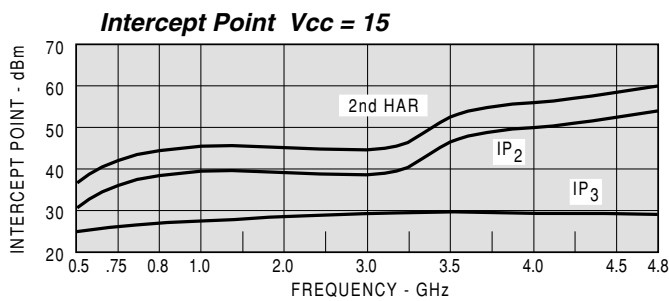
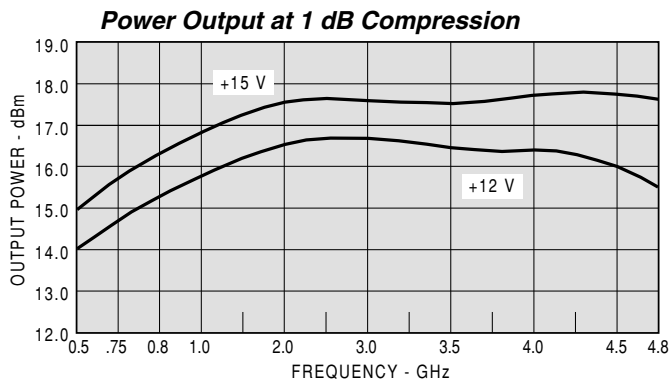
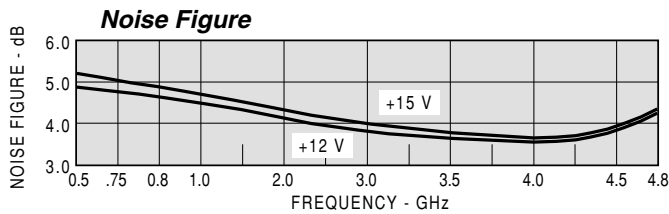
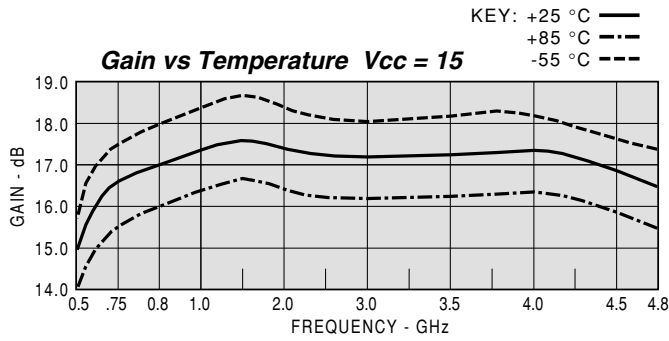
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



MODEL: AC4545 Vcc = +15V Icc = 86.65 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
800	1.33	1.44	16.9	0.452	-35.9
1000	1.23	1.22	17.3	0.452	-35.7
1250	1.26	1.08	17.7	0.413	-36.2
1500	1.34	1.10	17.8	0.379	-36.8
1750	1.45	1.14	17.7	0.367	-37.5
2000	1.50	1.15	17.5	0.344	-38.1
2250	1.53	1.14	17.2	0.327	-37.9
2500	1.52	1.15	17.0	0.320	-37.0
2750	1.45	1.21	16.9	0.324	-36.4
3000	1.39	1.32	16.9	0.312	-36.0
3250	1.34	1.44	17.0	0.308	-35.3
3500	1.33	1.53	17.1	0.350	-34.4
3750	1.35	1.60	17.4	0.350	-34.2
4000	1.38	1.63	17.3	0.373	-34.7
4300	1.22	1.51	17.6	0.429	-34.1
4500	1.13	1.36	17.2	0.501	-35.7
4700	1.28	1.28	16.3	0.529	-37.9

MODEL: AC4545 Vcc = +15V Icc = 86.65 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
800	0.14	-132.8	7.01	-27.1	0.016	0	0.18	48.4
1000	0.10	-129.1	7.34	-59.7	0.016	-22	0.10	34.9
1250	0.11	-126.9	7.66	-96.9	0.015	-47	0.04	50.5
1500	0.15	-141.2	7.76	-131.0	0.015	-72	0.05	90.4
1750	0.19	-165.7	7.72	-164.1	0.013	-98	0.06	86.8
2000	0.20	166.8	7.46	165.0	0.012	-130	0.07	60.0
2250	0.21	139.5	7.27	135.5	0.013	-158	0.06	23.1
2500	0.21	111.6	7.09	106.5	0.014	179	0.07	-23.8
2750	0.18	83.1	7.02	77.3	0.015	158	0.10	-63.6
3000	0.16	43.2	7.02	49.2	0.016	142	0.14	-91.5
3250	0.14	-0.4	7.08	21.5	0.017	130	0.18	-114.1
3500	0.14	-43.7	7.13	-10.1	0.019	120	0.21	-134.1
3750	0.15	-88.2	7.39	-41.5	0.020	108	0.23	-148.6
4000	0.16	-133.8	7.37	-75.0	0.019	99	0.24	-163.3
4300	0.10	170.1	7.56	-121.4	0.020	91	0.20	178.5
4500	0.06	131.3	7.24	-157.6	0.016	82	0.15	175.8
4700	0.12	115.4	6.55	164.0	0.013	86	0.12	-175.4

MODEL: AC4545 Vcc = +12V Icc = 82.75 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
800	1.33	1.37	16.6	0.442	-37.3
1000	1.25	1.16	17.0	0.442	-36.8
1250	1.27	1.10	17.5	0.405	-37.2
1500	1.34	1.19	17.7	0.376	-37.6
1750	1.43	1.29	17.7	0.368	-38.4
2000	1.51	1.32	17.4	0.349	-39.3
2250	1.55	1.30	17.1	0.331	-39.2
2500	1.53	1.26	17.0	0.325	-38.2
2750	1.49	1.23	17.0	0.329	-37.3
3000	1.43	1.24	16.9	0.318	-36.3
3250	1.37	1.30	16.8	0.315	-35.5
3500	1.39	1.36	16.8	0.347	-34.2
3750	1.40	1.45	16.9	0.351	-34.0
4000	1.46	1.52	16.7	0.379	-34.1
4300	1.33	1.51	16.4	0.409	-33.7
4500	1.26	1.48	16.1	0.479	-34.5
4700	1.38	1.47	15.1	0.497	-35.7