

AC575 5 to 500 MHz

AC514 TO-8 Cascadable Amplifiers

(Typical Values)

	AC575	AC514
High Gain	21.0 dB	21.0 dB
Low Noise Figure	2.6 dB	2.9 dB
Medium Output Power	+ 10.0 dBm	+ 13.0 dBm
Medium Third Order I.P.	+ 21.0 dBm	+ 24.0 dBm
High Performance Thin Film Standard Size TO-8		

Specifications

Parameter	Typical	Guaranteed*	
		0 to 50 °C	- 55 to 85 °C
Frequency (Min.)	2-600 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)	21.0 dB	20.0 dB	19.5 dB
Gain Flatness (Max.)	± 0.2 dB	± 0.5 dB	± 0.8 dB
Noise Figure (Max.)	AC575 < 2.6 dB AC514 < 2.9 dB	3.0 dB 3.5 dB	3.5 dB 4.0 dB
SWR (Max.) - Input/Output	< 1.3:1	1.7/1.7:1	2.0/2.0:1
Power Output @ 1dB comp. (Min.)	AC575 + 10.0 dBm AC514 + 13.0 dBm	+ 8.5 dBm + 11.5 dBm	+ 8.0 dBm + 11.0 dBm
DC Current (Max.)	AC575 24.0 mA AC514 32.0 mA	26.0 mA 35.0 mA	28.0 mA 37.0 mA

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

Intermodulation Performance

(Typical at 25 °C)

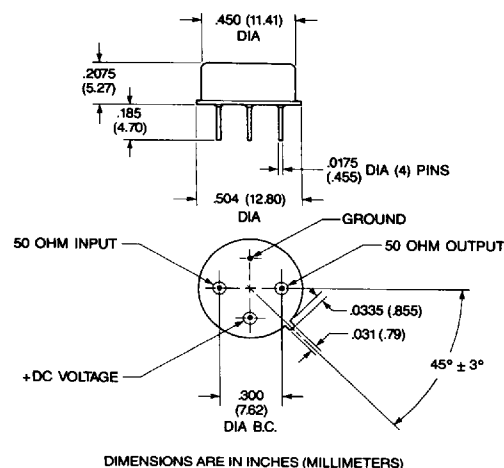
	AC575	AC514
Second Order Harmonic Intercept Point	+ 35 dBm	+ 42 dBm
Second Order Two Tone Intercept Point	+ 31 dBm	+ 37 dBm
Third Order Two Tone Intercept Point	+ 21 dBm	+ 24 dBm

Absolute Maximum Ratings

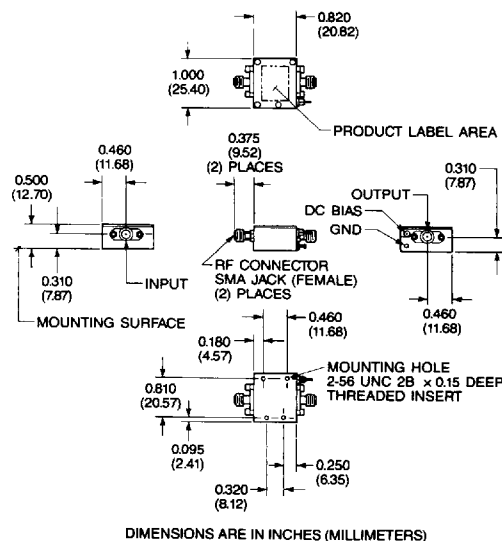
Ambient Operating Temperature	-55 to 125 °C
Storage Temperature	-62 to 125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Q Series Burn-in Temperature	+125 °C

Outline Drawings

TO-8 Package for Amplifiers



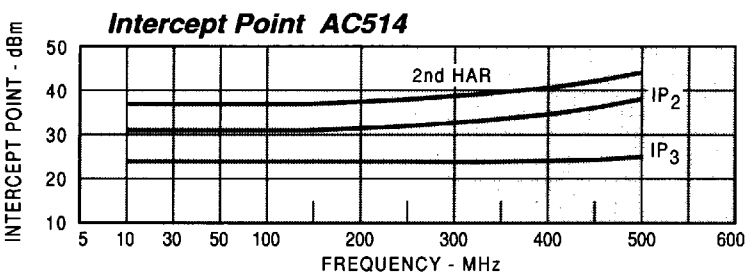
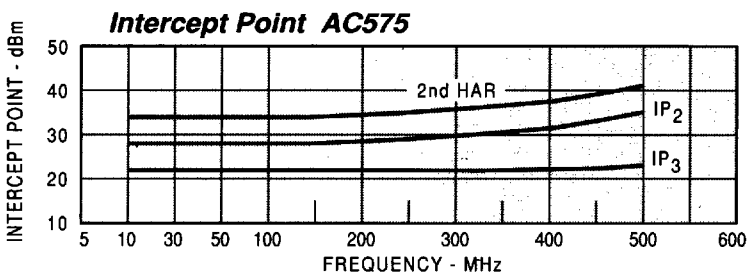
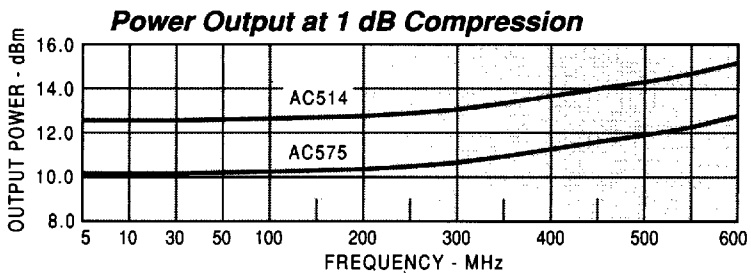
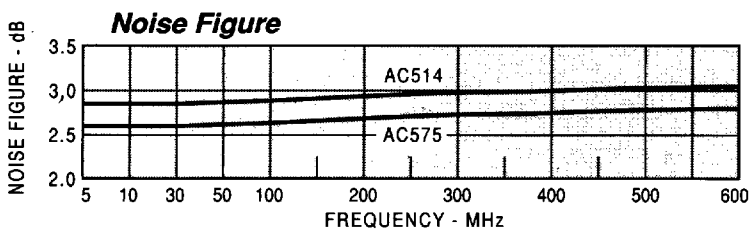
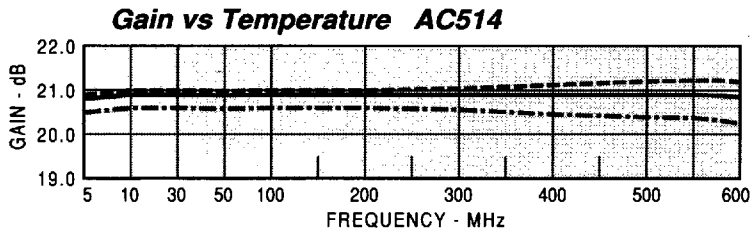
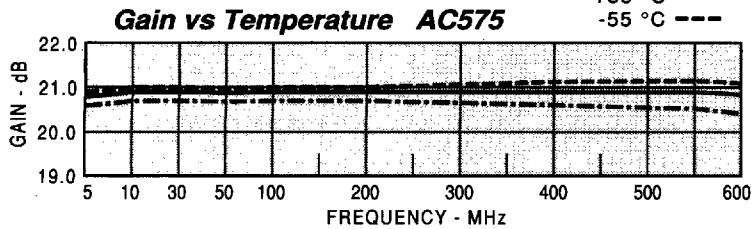
Amplifier Case - connectorized



AC575/AC514

Typical Performance

KEY: +25 °C —
+85 °C - - -
-55 °C ---



Typical Automatic Test Data

MODEL: AC575		Vcc=15		Icc= 24.84 mA	
FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.20	1.39	21.1		-25.8
3.0	1.08	1.21	21.1		-25.6
5.0	1.04	1.19	21.1	4.274	-25.5
20.0	1.04	1.17	21.1	1.184	-25.6
50.0	1.03	1.17	21.1	.603	-25.4
100.0	1.06	1.16	20.9	.631	-25.7
200.0	1.04	1.18	21.0	.557	-25.4
300.0	1.09	1.22	20.9	.572	-25.3
400.0	1.17	1.30	21.0	.586	-25.3
500.0	1.29	1.43	21.0	.647	-25.0
600.0	1.47	1.64	21.0	.713	-24.6

LINEAR S-PARAMETERS B-74-09-51

MODEL: AC575		Vcc=15		Icc= 24.84 mA				
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	.09	-129.4	11.31	-159.9	.051	24	.16	-129.8
3	.04	-156.8	11.37	-174.2	.052	8	.09	-158.9
5	.02	-161.9	11.36	-177.2	.053	5	.09	-168.7
20	.02	-176.5	11.32	176.4	.053	-0	.08	176.3
50	.01	158.1	11.30	169.8	.054	-3	.08	167.9
100	.03	-173.9	11.15	158.7	.052	-7	.08	159.6
200	.02	-156.8	11.28	138.4	.054	-11	.08	143.5
300	.04	-142.7	11.13	117.9	.054	-17	.10	130.4
400	.08	-145.8	11.23	96.8	.054	-25	.13	119.2
500	.13	-167.6	11.24	73.3	.056	-31	.18	105.6
600	.19	174.9	11.26	47.9	.059	-38	.24	88.8
700	.29	157.6	10.67	21.4	.060	-48	.32	68.0

MODEL: AC575		Vcc=12		Icc= 19.87 mA	
FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.14	1.32	20.6		-25.4
3.0	1.02	1.14	20.7		-25.2
5.0	1.03	1.12	20.7	4.099	-25.2
20.0	1.06	1.11	20.7	1.174	-25.2
50.0	1.03	1.10	20.7	.609	-25.2
100.0	1.03	1.10	20.5	.615	-25.2
200.0	1.08	1.13	20.7	.558	-25.1
300.0	1.13	1.19	20.6	.568	-25.0
400.0	1.21	1.29	20.7	.591	-24.8
500.0	1.35	1.46	20.8	.652	-24.4
600.0	1.54	1.72	20.7	.717	-24.2

MODEL: AC514		Vcc=15		Icc= 33.80 mA	
FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.12	1.18	20.9		-25.7
3.0	1.12	1.16	20.8		-25.8
5.0	1.12	1.15	20.8	1.186	-25.7
20.0	1.09	1.15	20.7	.737	-25.7
50.0	1.09	1.14	20.7	.570	-25.7
100.0	1.12	1.14	20.6	.594	-25.7
200.0	1.12	1.15	20.8	.561	-25.6
300.0	1.18	1.15	20.7	.576	-25.7
400.0	1.29	1.20	20.8	.602	-25.6
500.0	1.42	1.32	20.7	.678	-25.4
600.0	1.61	1.55	20.7	.754	-25.0

MODEL: AC514		Vcc=12		Icc= 27.02 mA	
FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.05	1.13	20.6		-25.6
3.0	1.08	1.11	20.5		-25.6
5.0	1.06	1.11	20.5	1.387	-25.4
20.0	1.04	1.10	20.5	.716	-25.4
50.0	1.05	1.10	20.5	.553	-25.4
100.0	1.08	1.10	20.4	.603	-25.6
200.0	1.08	1.11	20.5	.551	-25.4
300.0	1.19	1.15	20.4	.576	-25.4
400.0	1.30	1.24	20.6	.608	-25.3
500.0	1.49	1.40	20.6	.686	-25.0
600.0	1.70	1.68	20.4	.756	-24.6



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