

849A-849H AMPEREX TRANSMITTING TUBE

R.F. POWER AMPLIFIER, OSCILLATOR, A.F. POWER AMPLIFIER, OR MODULATOR

The Amperex 849-A supersedes the 849. It is the older model redesigned along modern engineering principles and while in its physical configurations and major electrical characteristics it is identical with the 849 its performance capabilities are far greater than the tube which it supersedes.



GENERAL CHARACTERISTICS

Filament Voltage	11 volts
Filament Current	7.7 amperes
Average Characteristics:	
Amplification Factor	19
Grid to Plate Transconductance @ 200 ma.	7600 micromhos
Direct Interelectrode Capacitances:	
849A 849H	
Grid to Plate	11.5 11.5 μf
Grid to Filament	14.0 10.0 μf
Plate to Filament	1.8 1.8 μf

R.F. Power Amplifier—Class B—Telephony

Carrier conditions for use with a maximum modulation factor of 1.0

	Maximum Rating per Tube	Typical Operation One Tube		
Filament Voltage	— 11	11	11	volts A.C.
D.C. Plate Voltage	3500	2000	2500	3000 volts
D.C. Grid Voltage	— -80	-110	-140	volts
Peak R.F. Grid Voltage	— 110	135	160	volts
D.C. Plate Current	350	187	216	250 ma.
Plate Input	750	374	540	750 watts
Plate Dissipation	500	242	350	480 watts
Plate Load Resistance	— 3100	3300	3380	ohms
D.C. Grid Current (Approx.)	— 3	2	1.5	ma.
Driving Power (Approx.)*	— 9	12	18	watts
Plate Power Output	— 132	190	270	watts
Frequency Limit for Above Operation:				
849A	3.0	15	10	3.0 mc.
849H	10.0	40	30	20.0 mc.
F.C.C. Broadcast Rating (for final stage use)	250	125	—	250 watts

*At crest of audio frequency cycle with modulation factor of 1.0.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube		
Filament Voltage	— 11	11	11	volts A.C.
D.C. Plate Voltage	4000	2500	3000	4000 volts
D.C. Grid Voltage	— -100	-130	-185	volts
Peak A.F. Grid Voltage	— 94	124	180	volts
D.C. Plate Current	— 135	120	100	ma.
Plate Input	400	338	360	400 watts
Plate Dissipation	400	338	360	400 watts
Load Resistance	— 12000	18000	30000	ohms
Power Output	— 82	105	150	watts
Distortion (% Second Harmonic)	— 3	2.5	4	percent

A.F. Power Amplifier and Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes		
Filament Voltage	— 11	11	11	volts A.C.
D.C. Plate Voltage	4000	2500	3000	3000 volts
D.C. Grid Voltage	— -118	-140	-140	volts
Load Resistance (per tube)	— 2000	3200	2000	ohms
Effective Load Resistance (plate to plate)	— 8000	12800	8000	ohms
Zero Signal Plate Current	— 120	100	100	ma.
Peak A.F. Grid to Grid Voltage	— 416	480	600	volts
Max. Signal Plate Current*	500	585	530	900 ma.
Max. Signal Plate Input*	1350	1460	1590	2700 watts
Plate Dissipation	500**	620*	490*	800* watts
Plate Dissipation	—	—	—	920** watts
Max. Signal Driving Power*** (Approx.)	— 6	12	40	watts
Minimum Grid Input Resistance (Approx.)	— 1600	500	250	ohms
Max. Signal Power Output	— 840	1100	1900	watts

*Average over an audio-frequency cycle of sine-waveform under maximum-signal conditions.

**Average over an audio-frequency cycle of sine-waveform under approximately 70% of maximum drive conditions.

***Based upon peak power demand from driver.

****Low distortion operating condition recommended for plate modulating the final stage of 1 KW Broadcast Transmitters. This operating condition makes possible exceptionally low distortion because of the relatively high value of the minimum input resistance to the grids of the tubes, coupled with a low driving power requirement and a practically straight line plate transfer characteristic.

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Plate Modulated R.F. Power Amplifier—Class C Telephony

Carrier conditions for use with modulation factor of 1.0

	Maximum Rating per Tube	Typical Operation One Tube	
Filament Voltage	—	11	11 volts A.C.
D.C. Plate Voltage	3000	2500	2500 volts
D.C. Grid Voltage	-500	-300	-300 volts
Peak R.F. Grid Voltage	—	475	520 volts
D.C. Plate Current	500	335	500 ma.
Plate Input	1250	838	1250 watts
Plate Load Resistance	—	3700	2450 ohms
D.C. Grid Current (Approx.)	100	48	70 ma.
Driving Power (Approx.)	—	22	35 watts
Plate Dissipation	400	158	290 watts
Plate Power Output	—	680	960 watts
Frequency Limit for Above Operation: 849A	3.0	7.5	6 mc.
849H	10.0	20	15 mc.
F.C.C. Broadcast Rating (for final stage use)	750	500	750 watts

R.F. Power Amplifier and Oscillator—Class C Telegraphy

Key-down conditions without modulation

	Maximum Rating per Tube	Typical Operation One Tube	
Filament Voltage	—	11	11 volts A.C.
D.C. Plate Voltage	3500	2500	3000 volts
D.C. Grid Voltage	-500	-300	-300 volts
Peak R.F. Grid Voltage	—	520	500 volts
D.C. Plate Current	500	500	500 ma.
Plate Input	1750	1250	1500 watts
D.C. Grid Current (Approx.)	100	70	50 ma.
Plate Load Resistance	—	2450	2750 ohms
Plate Dissipation	500	290	320 watts
Driving Power (Approx.)	—	35	25 watts
Plate Power Output	—	960	1180 watts
Frequency Limit for Above Operation: 849A	5	10	7.5 mc.
849H	20	40	30 mc.

Grid Modulated R.F. Power Amplifier—Class C

Carrier conditions for use with a maximum modulation factor of 1.0

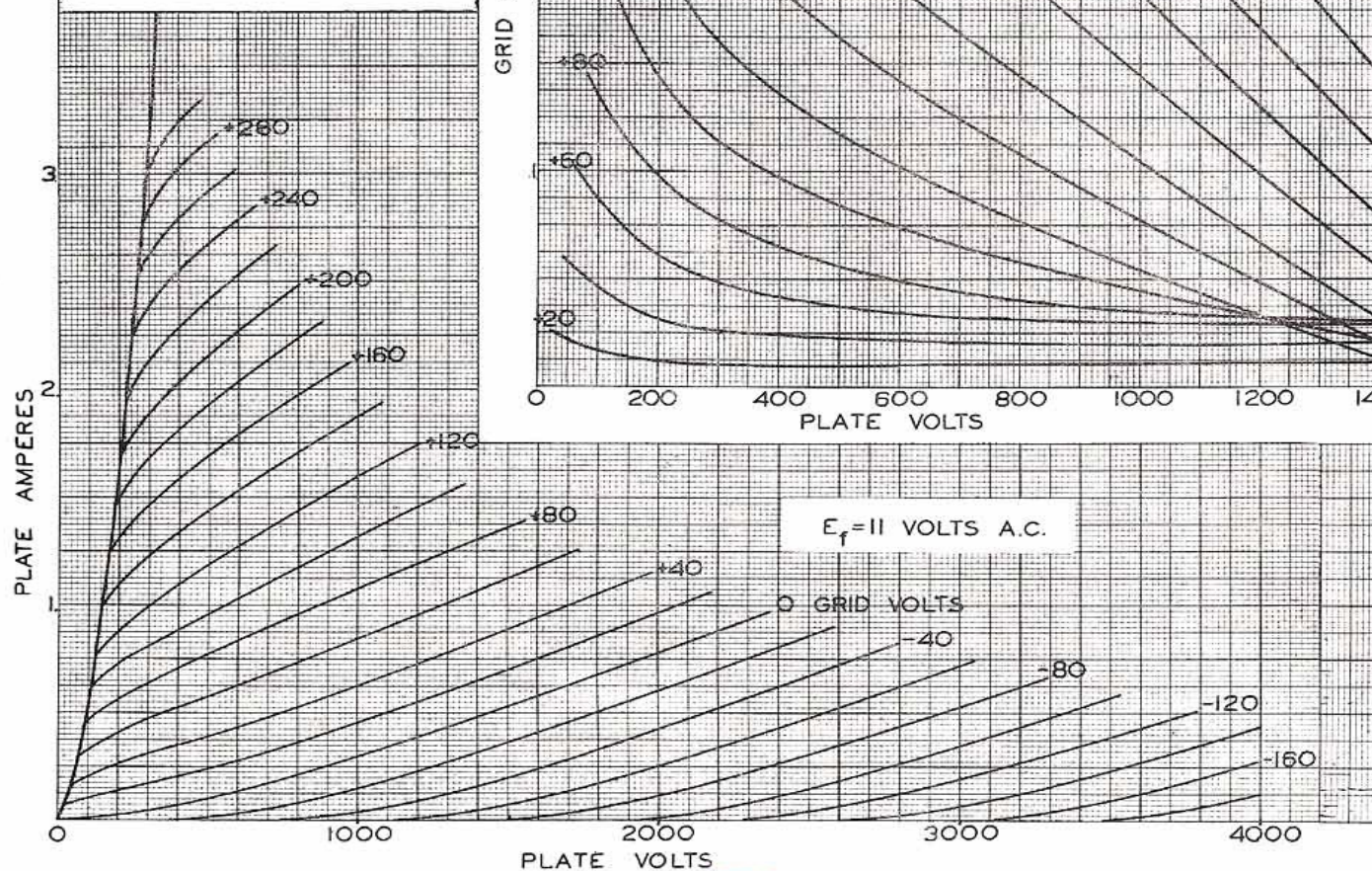
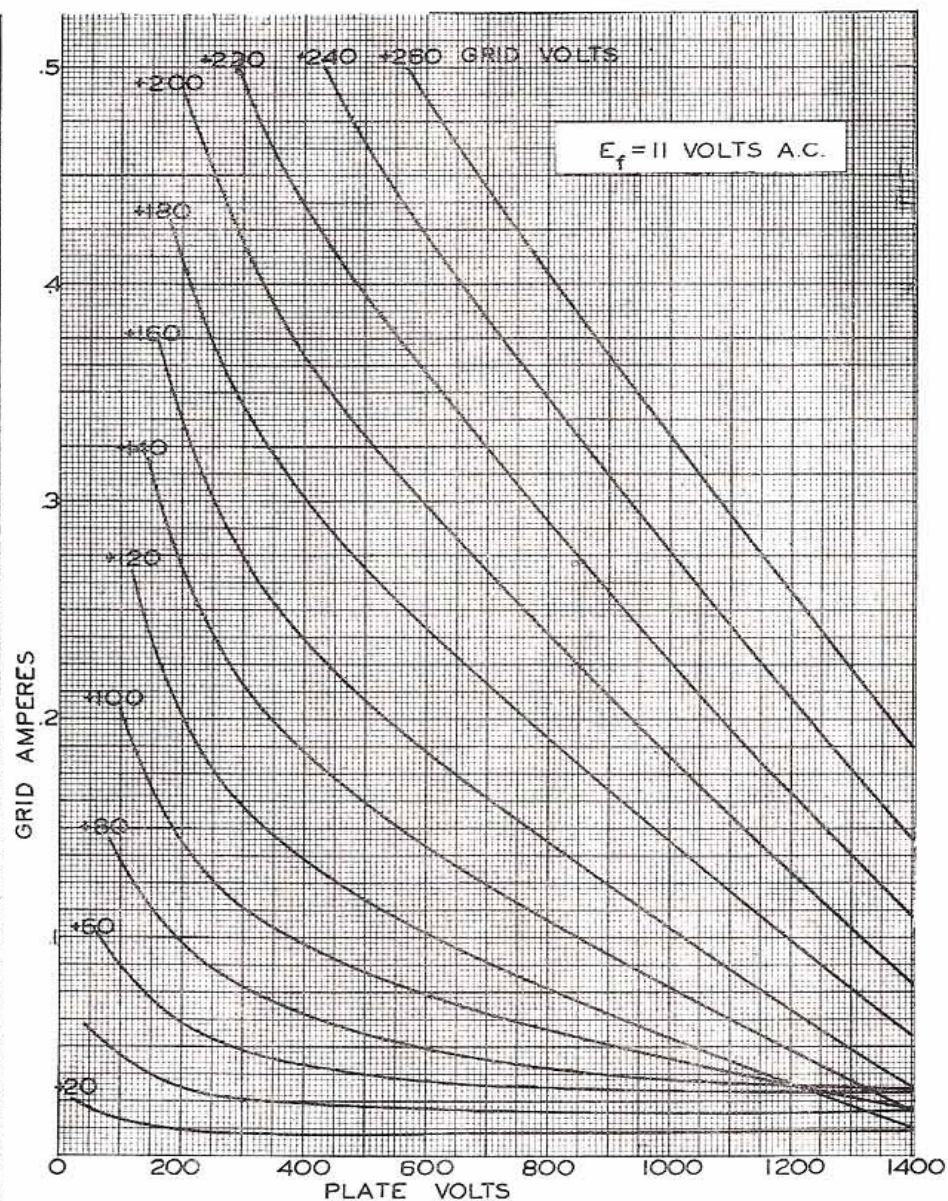
	Maximum Rating per Tube	Typical Operation One Tube	
Filament Voltage	—	11	11 volts A.C.
D.C. Plate Voltage	3500	3000	volts
D.C. Grid Voltage (Total) (Fixed Bias)	500	-425	volts
Grid Resistor	—	-415	volts
Peak R.F. Grid Voltage	—	2200	ohms
Peak A.F. Grid Voltage	—	500	volts
D.C. Plate Current	350	250	ma.
Plate Input	750	750	watts
Plate Load Resistance	—	2750	ohms
Plate Dissipation	500	450	watts
D.C. Grid Current (Approx.)	—	4.5	ma.
R.F. Grid Driving Power*	—	25	watts
Plate Power Output	—	300	watts
Frequency Limit for Above Operation:			
849A	3	3	mc.
849H	10	20	mc.

F.C.C. Broadcast Rating (for final stage use with 33% efficiency) 250 250 watts

*At positive crest of Audio Frequency cycle of sine-wave form.

The Amperex 849-H is identical in all but its interelectrode capacitances with the 849-A. The only other point of difference is the grid connection which terminates in an arm extending from the side of the glass envelope. It is designed for more efficient operation at high frequencies and may be operated at full ratings up to 30 megacycles in many classes of service.





849A-H

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849-A TRANSFER CHARACTERISTICS AF POWER AMPLIFIER AND MODULATOR CLASS-B

