

FORCED-AIR COOLED†

R.F. Power Oscillator or Amplifier or Class B Modulator

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class B

D.C. Plate Voltage	8500
D.C. Plate Current, Max.-Signal (amps)*	2.0
Plate Input, Max.-Signal (watts)*	12000
Plate Dissipation (watts)*	5000
Radiator Temperature (Centigrade)†	180°

Typical Operation:

Unless otherwise specified, values are for 2 tubes

D.C. Plate Voltage	5000	6000	7500
D.C. Plate Current, Zero-Signal (amps)	0.4	0.4	0.4
D.C. Plate Current, Max.-Signal (amps)	3.2	3.6	3.2
Plate Input, Max.-Signal (watts)*	16000	21600	24000
D.C. Grid Voltage	-180	-230	-300
Grid-to-Grid Voltage, Peak A.F.	1460	1680	1700
Load Resis. (ohms) (per tube)	630	920	1250
Effective Load (ohms) (Pl-pl)	2520	3680	5000
Max.-Signal Drive (watts)	170	180	150
Max.-Signal Power Output (watts)	8800	12000	15000

R.F. Power Amplifier—Class B

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D.C. Plate Voltage	8500
D.C. Plate Current (amps)	1.0
Plate Input (watts)	7500
Plate Dissipation (watts)	5000
Plate Volts and Input Max. % for 25MC	100%
Plate Volts and Input Max. % for 50MC	89%
Plate Volts and Input Max. % for 75MC	80%
Plate Volts and Input Max. % for 100MC	74%
Radiator Temperature (Centigrade)†	180°

Typical Operation:

D.C. Plate Voltage	6000	7500
D.C. Plate Current (amps)	0.9	0.9
D.C. Grid Voltage	-250	-300
Grid Voltage, Peak R.F.	920	1000
Driving Power (watts)**	95	80
Plate Power Output (watts)	1500	2000

Plate Modulated R.F. Power Amplifier Class C

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D.C. Plate Voltage	6000
D.C. Plate Current (amps)	1.0
Plate Input (watts)	6000
Plate Dissipation (watts)	3000
Plate Volts and Input Max. % for 25MC	100%
Plate Volts and Input Max. % for 50MC	80%
Plate Volts and Input Max. % for 75MC	68%
Plate Volts and Input Max. % for 100MC	60%
D.C. Grid Voltage	-1000
D.C. Grid Current (amps)	0.25
Radiator Temperature (Centigrade)†	180°

GENERAL CHARACTERISTICS

Filament Voltage‡	11
Filament Current (amps)	125
Amplification Factor	21
Direct Interelectrode Capacitances:	
Grid to Plate	20.7 $\mu\mu\text{f}$
Grid to Filament	19.5 $\mu\mu\text{f}$
Plate to Filament	2.5 $\mu\mu\text{f}$

Plate Modulated R.F. Power Amplifier Class C

Carrier conditions per tube for use with a maximum modulation factor of 1.0

(Continued)

Typical Operation:

D.C. Plate Voltage	5000	6000
D.C. Plate Current (amps)	0.9	1.0
D.C. Grid Voltage	-800	-900
Grid Voltage, Peak R.F.	1300	1420
D.C. Grid Current (amps)	0.12	0.10
Driving Power (watts)	155	140
Plate Power Output (watts)	2750	4000

R.F. Power Amplifier and Oscillator—Class C

Key-down conditions per tube without modulation§

D.C. Plate Voltage	8500
D.C. Plate Current (amps)	2.0
Plate Input (watts)	16000
Plate Dissipation (watts)	5000
	Volts Watts
Plate Volts and Input, Watts, Max. % for 25MC	100% 100%
Plate Volts and Input, Watts, Max. % for 50MC	85% 75%
Plate Volts and Input, Watts, Max. % for 75MC	76% 60%
Plate Volts and Input, Watts, Max. % for 100MC	70% 50%
D.C. Grid Voltage	-100
D.C. Grid Current (amps)	0.25
Radiator Temperature (Centigrade)†	180°

Typical Operation:

D.C. Plate Voltage	5000	6000	7500
D.C. Plate Current (amps)	1.5	1.8	2.0
D.C. Grid Voltage	-500	-600	-800
Grid Voltage, Peak R.F.	1200	1460	1830
D.C. Grid Current (amps)	0.19	0.21	0.24
Driving Power (watts)	220	290	400
Plate Power Output (watts)	5000	7000	10000

*Averaged over any audio-frequency cycle.

**At crest of A.F. cycle with modulation factor of 1.0.

†The temperature of the radiator must be measured in the thermometer well. A vertical air flow of 500 cubic feet per minute with an incoming temperature of not over 45°C. is required. The bulb must be cooled by a downward air flow of 15 cubic feet per minute from a 3-inch diameter nozzle. The glass temperature must not exceed 150°C. at any point.

‡This tube can usually be operated with reduced filament voltage when the load conditions are lower than maximum.

§Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.



AMPEREX

889-R

889-R - AMPEREX TRANSMITTING TUBE

