

# AMPEREX TUBE TYPE 5895

The 5895/AX-9905 is a twin four-electrode tube designed for use as a radio-frequency power amplifier, oscillator, modulator and frequency multiplier. Each anode is capable of dissipating 6 watts in continuous service and 8 watts in intermittent service. Cooling is accomplished by radiation. The cathode is directly heated, oxide-coated. Maximum ratings apply up to 186 megacycles. At reduced ratings it may be operated up to 300 mc.

## GENERAL CHARACTERISTICS

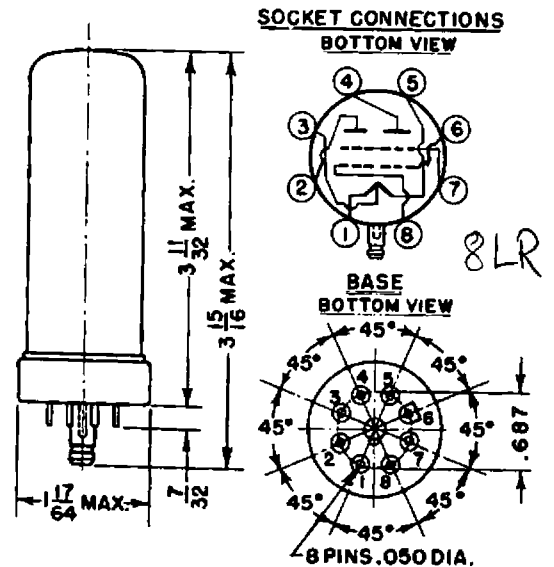
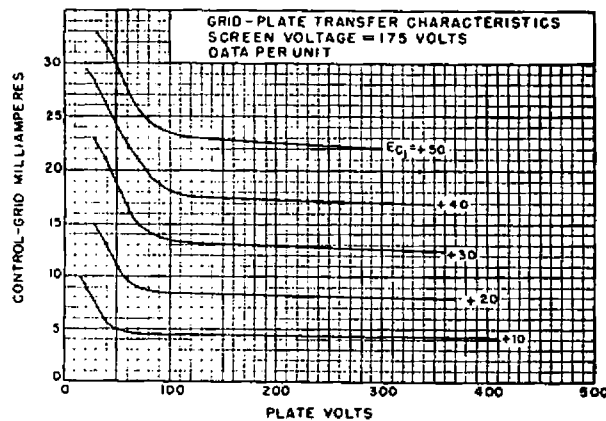
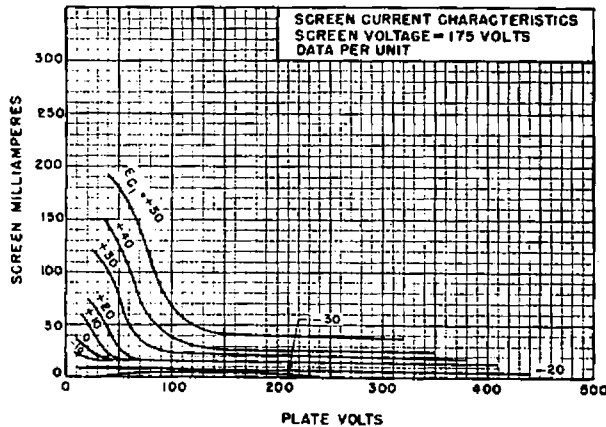
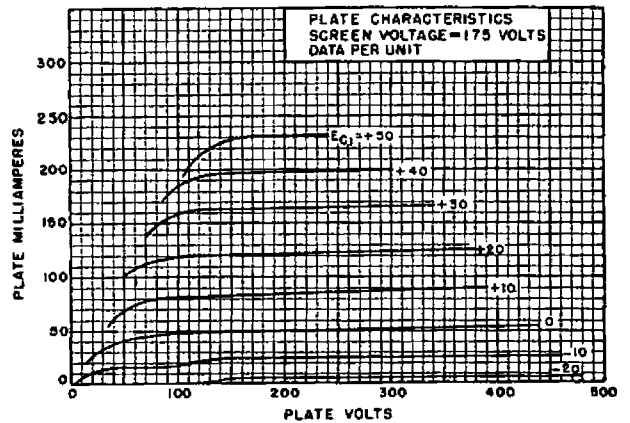
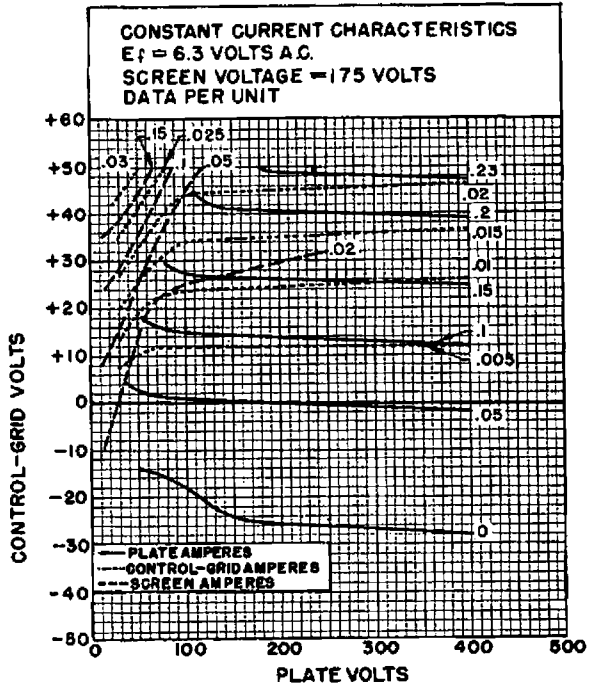
### ELECTRICAL DATA

	Kilo.	Bogey	Max.
Filament Voltage	5.6	6.3	6.9 volts
Filament Current at Bogey Voltage	0.63	0.68	0.73 amperes
Amplification Factor			
G <sub>p</sub> , G <sub>c</sub> , Mu at Eb=400 volts.			
Ec <sub>1</sub> =250 volts, Ib=25 ma	6.0	7.5	9.0
Peak Cathode Current <sup>1</sup>			
Continuous Service	—	—	240 ma
Intermittent Service	—	—	300 ma
Direct Interelectrode Capacitances			
Per Unit			
Grid-Plate	—	0.05	0.08 μμf
Input	7.7	8.5	9.4 μμf
Output	2.8	3.3	3.8 μμf
Push-pull			
Input	5.0	5.7	6.3 μμf
Output	1.5	1.7	2.0 μμf

### MECHANICAL DATA

Mounting Position—vertical, base up or down	
Maximum Glass Temperature (anode area)	200° C.
Maximum Pin Temperature	100° C.
Net Weight (approximate)	1.4 ounces

<sup>1</sup> Represents maximum usable cathode current per unit (plate current plus current to each grid) for any condition of operation.



MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class B

Maximum Ratings, Absolute Values
D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Maximum Signal D.C. Plate Current
Maximum Signal Plate Input
Maximum Signal Grid No. 2 Input
Plate Dissipation

Typical Operation

Unless otherwise specified, values are per tube.

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak A.F. Grid No. 1 to Grid No. 1 Voltage
Zero Signal D.C. Plate Current
Maximum Signal D.C. Plate Current
Zero Signal D.C. Grid No. 2 Current
Maximum Signal D.C. Grid No. 2 Current
Effective Load Resistance
Maximum Signal Driving Power, approx.
Maximum Signal Power Output, approx.

Plate and Screen Grid Modulated R.F. Power Amplifier—Class C Telephony

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

Maximum Ratings, Absolute Values
Values per tube.

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 1 Current
Plate Input
Grid No. 2 Input
Plate Dissipation

Typical Operation
Values are per tube.

D.C. Plate Voltage
Grid No. 2 Series Resistance (supply voltage 250 volts)
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

At 300 megacycles the following applies:

D.C. Plate Voltage
Plate Input

Push-Pull R.F. Power Amplifier and Oscillator Class C Telephony

Key-down conditions per tube without amplitude modulation

Maximum Ratings, Absolute Values

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 1 Current
Plate Input
Grid No. 2 Input
Plate Dissipation

Typical Operation

Frequency
D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

At 300 megacycles the following applies:

D.C. Plate Voltage
Plate Input

Push-Pull R.F. Power Amplifier and Oscillator Class C Telephony

Key-down conditions per tube without amplitude modulation

Typical Operation

Frequency
D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

Typical Operation

Frequency
D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

Typical Operation

Frequency
D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

Frequency Multiplier—Class C Telephony

Values are per tube.

Maximum Ratings, Absolute Values

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 1 Current
Plate Input
Grid No. 2 Input
Plate Dissipation

Typical Operation

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

D.C. Plate Voltage
D.C. Grid No. 2 Voltage
D.C. Grid No. 1 Voltage
Peak R.F. Grid No. 1 to Grid No. 1 Voltage
D.C. Plate Current
D.C. Grid No. 2 Current
D.C. Grid No. 1 Current, approximate
Driving Power, approximate
Power Output, approximate

At 300 megacycles the following applies:

D.C. Plate Voltage
Plate Input

Electrical Data and Limits

Unless otherwise specified values are for one unit. In that case the other unit should be made non-active by applying a voltage of -100 volts to the control grid of that unit.

Measurements should be carried out at Vt=6.3 V and the mid tap of the transformer grounded.

Characteristic Conditions Limits
Grid Voltage
Grid No. 2 Current
Grid No. 1 Current
Plate Current
Plate Current
Plate Current
Grid No. 2 Current
Grid No. 1 Current
Power Output

\*Averaged over any audio-frequency cycle of sine-wave form. This data applies up to 186 megacycles.
\*\*Special attention should be given to adequate ventilation of the bulb of these frequencies.
\*Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.
\*Grids in push-pull, plates in parallel.