

Amperex® ELECTRONIC CORPORATION
 210 DUFFY AVENUE, HICKSVILLE, L. I., N. Y.

TUBE TYPE
8458

The Amperex 8458 is a single ended twin tetrode with an indirectly heated cathode in the all glass novar base construction. It is designed for mobile service as a Class C amplifier, oscillator, or frequency multiplier up to 200 Mc. It is internally neutralized. The heater is designed to withstand the battery voltage variation normally encountered in mobile service. It is capable of delivering 30 watts output as an amplifier under ICAS conditions.

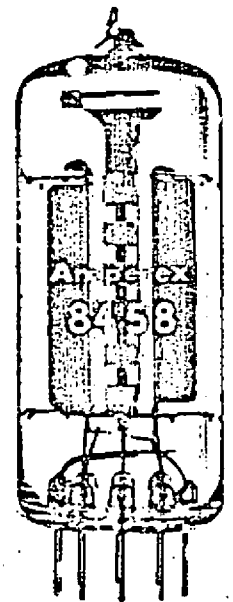
GENERAL CHARACTERISTICS

MECHANICAL

Bulb	T-9
Base	0.040 inch pin dia., novar
Mounting Position	any
Cooling	radiation and convection (use of a closed can is not recommended)
Maximum Pin Seal Temperature	120°C
Maximum Bulb Temperature	225°C

ELECTRICAL

Cathode	oxide coated, indirectly heated	
	<u>Parallel</u>	<u>Series</u>
Heater Voltage	6.75	13.5 volts
Heater Current	0.76	0.38 amp
Interelectrode Capacitances	<u>Push-Pull Nominal</u>	<u>Per Unit Nominal</u>
Output	1.7	3.2 pf
Input	5.4	6.8 pf
Plate to Grid No. 1 (internally neutralized)		max. 0.1 pf



Amperex

RF Power Amplifier and Oscillator
Class C - Telegraphy

Maximum Ratings, Absolute Values
(For frequencies up to 200 Mc)

	<u>CCS</u>	<u>ICAS</u>
DC Plate Voltage	400	450 volts
DC Plate Current	2x45	2x55 ma
DC Grid No. 2 Voltage	200	200 volts
DC Grid No. 1 Voltage	-150	-150 volts
DC Grid No. 1 Current	2x3	2x4 ma
Plate Dissipation	2x7.5	2x10 watts
Grid No. 2 Dissipation	2x1	2x1 watts
Grid No. 1 Dissipation	2x0.2	2x0.2 watts
Peak Heater Cathode Voltage	100	100 volts
Plate Input Power	36	50 watts

Typical Operation
One Tube Push-Pull up to 200 Mc

	<u>CCS</u>	<u>ICAS</u>	<u>ICAS</u>
DC Plate Voltage	400	400	450 volts
DC Grid No. 2 Voltage	155	200	200 volts
DC Grid No. 1 Voltage	-59	-50	-50 volts
DC Plate Current	85	110	110 ma
DC Grid No. 2 Current	2.3	3.9	4.0 ma
DC Grid No. 1 Current	3.1	3.1	3.1 ma
Grid No. 1 Resistor	19	16	16 k ohms
Driving Power (tube and circuit)	1.0	1.2	1.2 watts
Grid No. 2 Dissipation	0.5	0.8	0.8 watts
Useful Power Output (measured at load)	20	28	30 watts
Overall Efficiency (tube and circuit)	59	63.6	60.7 %

Frequency Tripler
(For frequencies up to 200 Mc)
Maximum Ratings, Absolute Values

	<u>CCS</u>	<u>ICAS</u>
DC Plate Voltage	400	450 volts
DC Grid No. 2 Voltage	200	200 volts
DC Grid No. 1 Voltage	-150	-150 volts
DC Plate Current	2x30	2x44 ma
DC Grid No. 1 Current	2x2	2x3 ma
Plate Input Power	2x11.25	2x15 watts
Grid No. 2 Dissipation	2x1	2x1 watts
Plate Dissipation	2x7.5	2x10 watts
Peak Heater-Cathode Voltage	100	100 volts

Typical Operation
(Two units of one tube in push-pull)

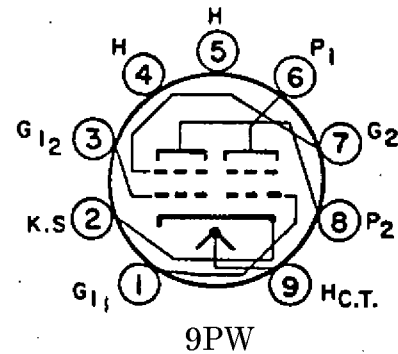
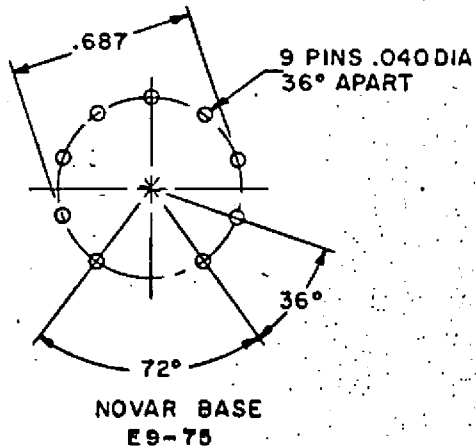
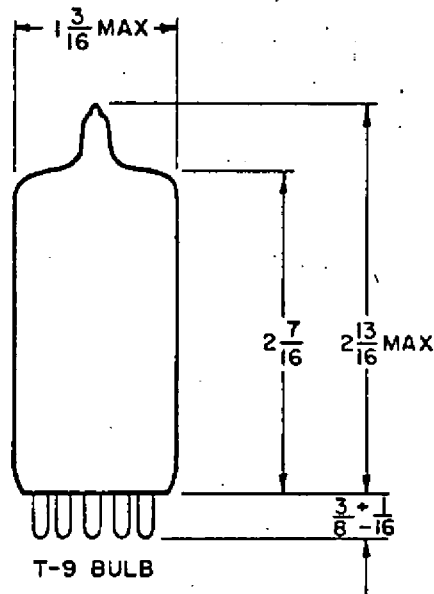
	<u>ICAS</u>
Frequency	58/174 Mc
DC Plate Voltage	350 volts
DC Grid No. 2 Voltage	165 volts
DC Grid No. 1 Voltage	-150 volts
DC Plate Current	2x43 ma
DC Grid No. 2 Current	5.0 ma
DC Grid No. 1 Current	2x2.2 ma
Grid Resistor	34 k ohms
Driving Power (approx. including circuit losses)	8.6 watts
Efficiency	34 %
Useful Power Output	10 watts

**Plate and Screen Grid Modulated, Push-Pull
RF Power Amplifier - Class C Telephony**
(Carrier conditions per tube, for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values
(For frequencies up to 200 Mc)

DC Plate Voltage
DC Grid No. 2 Voltage
DC Grid No. 1 Voltage
DC Plate Current
DC Grid No. 1 Current
Plate Input Power
Grid No. 2 Dissipation
Plate Dissipation
Peak Heater-Cathode Voltage

	<u>CCS</u>	<u>ICAS</u>
	320	360 volts
	200	200 volts
	-150	-150 volts
	2x37.5	2x46 ma
	2x3	2x4 ma
	2x12	2x16.5 watts
	2x0.65	2x0.65 watts
	2x5.0	2x6.5 watts
	100	100 volts



PIN CONNECTIONS

1. GRID NO. 1, SIDE NO.1
2. CATHODE AND BEAM PLATE
3. GRID NO.1, SIDE NO. 2
4. HEATER
5. HEATER
6. PLATE SIDE 1
7. GRID NO. 2
8. PLATE SIDE 2
9. HEATER CENTER TAP