

# AMPEREX TUBE TYPE 7983

## TENTATIVE DATA

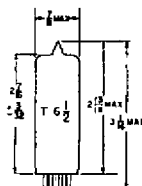
The Amperex 7983 is a quick heating double tetrode primarily intended for use as output amplifier, driver or frequency multiplier. The filament has been designed for intermittent operation in hybrid mobile transceivers where low standby current and low heat dissipation are important.

The 7983 has been neutralized internally for frequencies up to 200 mc.

*qps*



**PIN CONNECTIONS**  
 1. GRID NO. 1, UNIT NO. 1  
 2. INTERNAL SHIELD  
 3. GRID NO. 2, UNIT NO. 2  
 4. HEATER  
 5. PLATE  
 6. GRID NO. 1, UNIT NO. 2  
 7. GRID NO. 2, UNIT NO. 1  
 8. HEATER  
 9. HEATER



## GENERAL CHARACTERISTICS

### MECHANICAL

Bulb	T 6½
Base	Noval
Mounting Position	see note 1
Cooling	radiation & convection (use of a closed can is not permissible)
Maximum Bulb Temperature	225°C
Maximum Pin Temperature	120°C
Net Weight (Approx)	0.6 ounces
Shipping Weight (Approx)	0.7 ounces

### ELECTRICAL

Cathode	oxide coated
Heater Voltage <sup>2</sup>	3.15 volts
Heater Current	1.65 amps
Heating Time	0.8 seconds for a power output of -3 db

### Direct Interelectrode Capacitances

	Each Unit	Both Units in Push-Pull
Output	3.2	1.7 pf
Input	6.8	5.4 pf
Plate to Grid <sup>3</sup>	0.08 max	.. pf
Typical Characteristics (Each System) <sup>4</sup>		
Amplification Factor, Grid No. 2 to Grid No. 1		7.5
Transconductance		3000 micromhos

- 1 If the tube is mounted with its main axis deviating from the vertical it is recommended that pins 2 and 7 are placed in a vertical plane.
- 2 Filament supply from a dc/ac inverter is recommended. The permissible deviation from the filament voltage is ±10%. If the dc/ac inverter is fed from a 12.6 volt battery that is charged during operation (driving motor vehicle) the design center value for the supply voltage should be 14 volts.
- 3 Internally neutralized up to 200 mc.
- 4 At plate and grid no. 2 voltages of 200 volts and a plate current of 30 ma.

# 7983

## RF Class C Telegraphy or FM Telephony

### Maximum Ratings, Absolute Values

Frequency	200 mc max
Plate Voltage	300 volts max
Plate Input Power	2x15 watts max
Plate Dissipation	2x7 watts max
Plate Current	2x55 ma max
Grid No. 2 Voltage	200 volts max
Grid No. 2 Dissipation	2x1 watts max
Grid No. 1 Voltage	-150 volts max
Grid No. 1 Dissipation	2x0.2 watts max
Grid No. 1 Current	2x4 ma max
Cathode Current	2x65 ma max
Peak Cathode Current	2x300 ma max

### Typical Operation

#### (Two Systems in Push-Pull) ICAS

Frequency	200	200 mc
Plate Voltage	250	200 volts
Grid No. 2 Supply Voltage	250	200 volts
Grid No. 2 Dropping Resistor	22	6.8 K ohms
Grid No. 1 Bias	-40	-40 volts
Grid No. 1 Bias Resistor	27	27 k ohms
Grid No. 1 Peak-to-Peak Driving Voltage	110	110 volts
Plate Current	2x45	2x45 ma
Grid No. 2 Current	2x4.2	2x5.1 ma
Grid No. 1 Current	2x1.5	2x1.5 ma
Plate Input Power	2x11.2	2x9 ma
Plate Dissipation	2x4.5	2x3.5 watts
Grid No. 2 Dissipation	2x0.65	2x0.85 watts <sup>5</sup>
Output Power in Load	11	9.5 watts <sup>5</sup>
Plate Efficiency	60	61 %

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<sup>5</sup> Measured in the circuit of Figure 1.

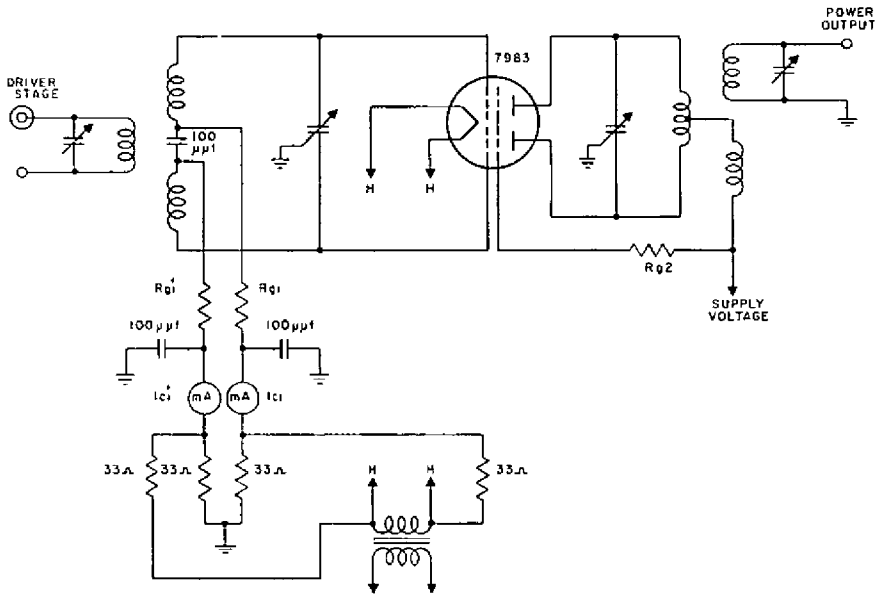


FIG. 1

## PLATE CURRENT CHARACTERISTIC — PER UNIT

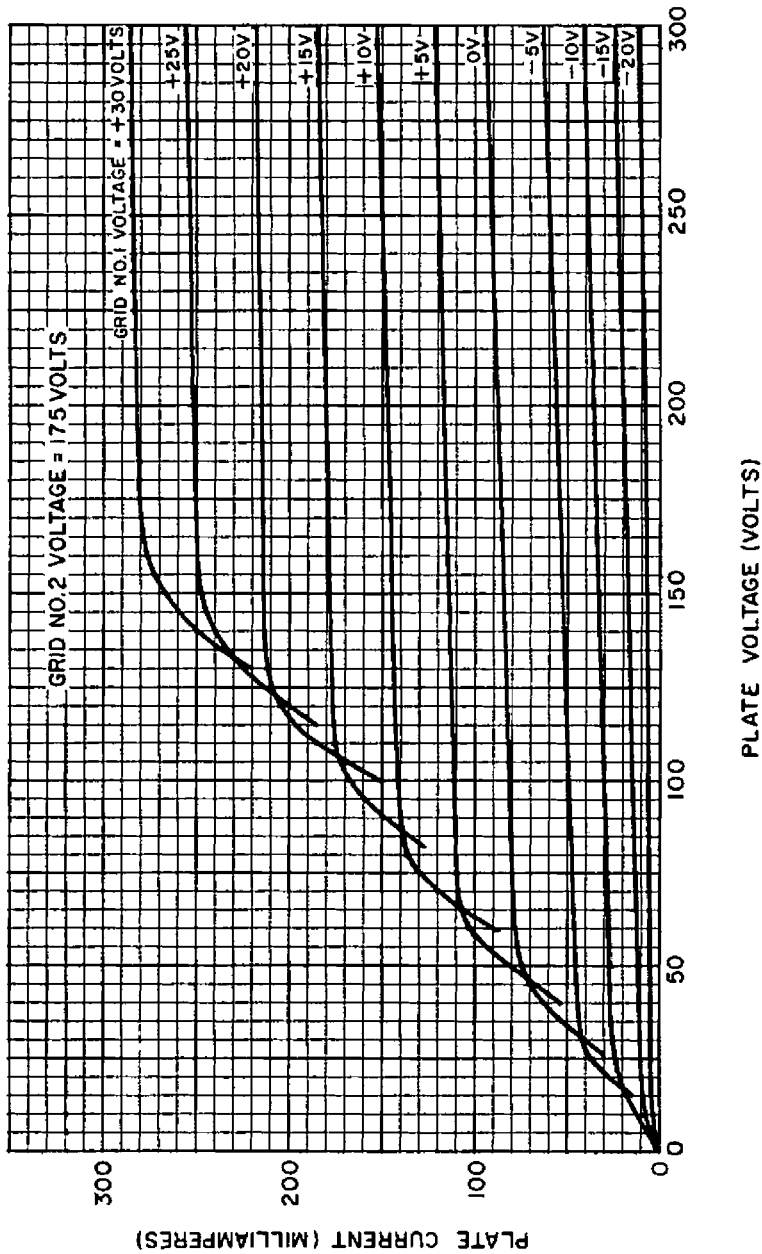
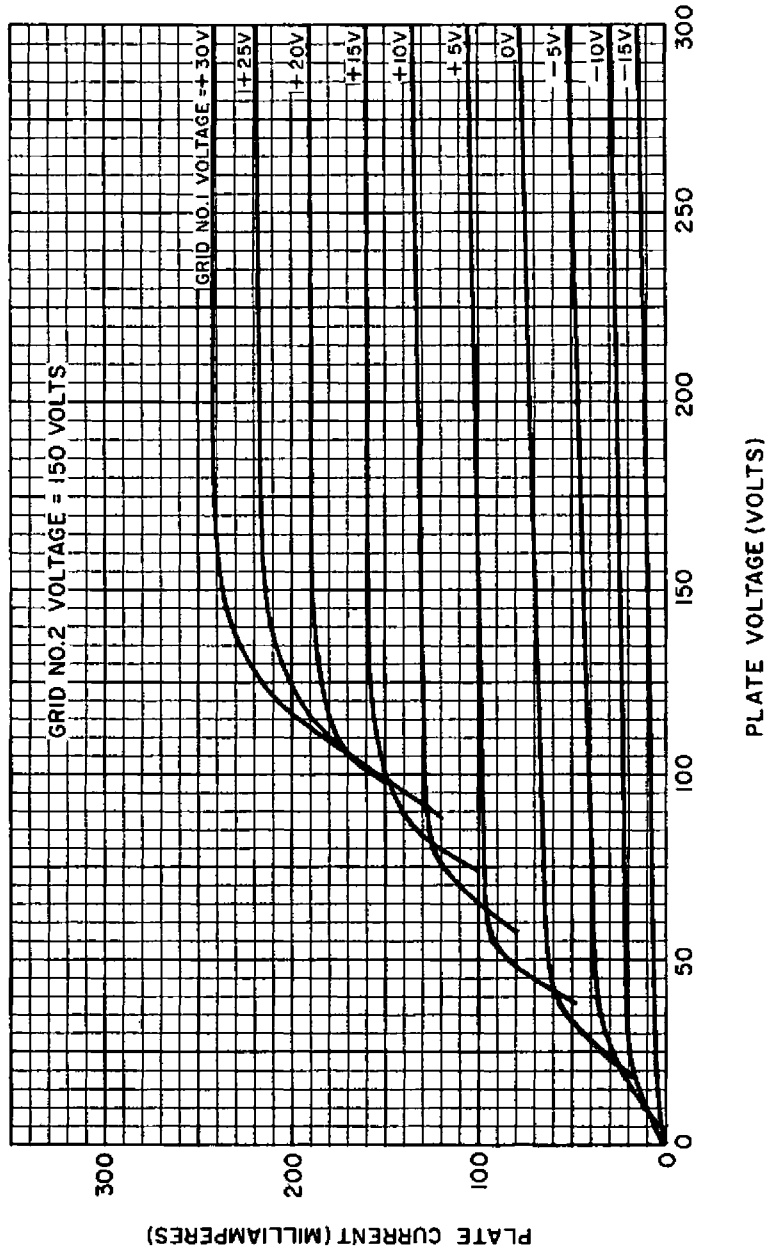
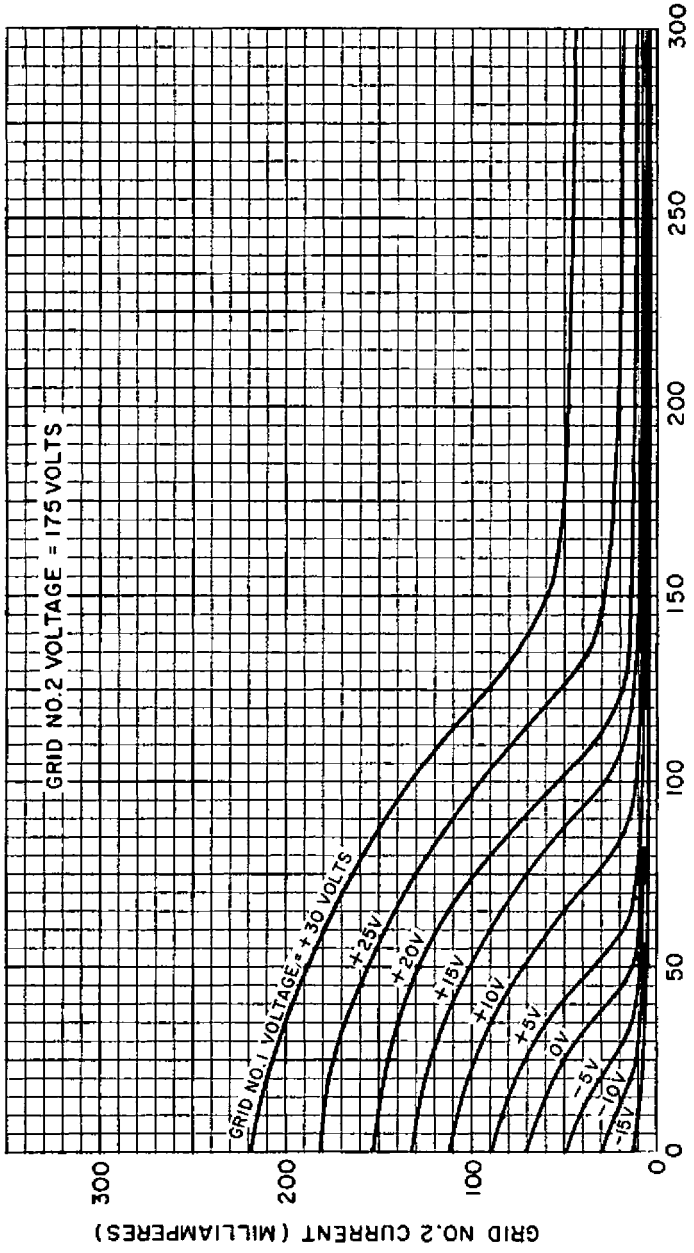


PLATE CURRENT CHARACTERISTIC — PER UNIT



SCREEN CURRENT CHARACTERISTIC — PER UNIT



SCREEN CURRENT CHARACTERISTIC - PER UNIT

