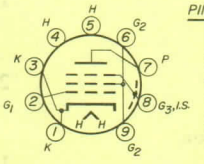
AMPEREX TUBE TYPE 7788

TENTATIVE DATA

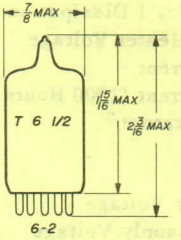
The Amperex 7788 is a dual frame grid, long life, shock and vibration resistant pentode, especially designed for use in broad-band amplifying circuits such as radio and television relay systems, coaxial telephone lines, radar equipment and oscilloscopes.

The 7788, an Amperex "Premium Quality, 10,000 Hour" tube, features extremely high transconductance and an excellent figure of merit. The low noise equivalent resistance is typically only 100 ohms pentode connected, and 60 ohms triode connected.



PIN CONNECTIONS

1- CATHODE
2- GRID NO.1
3- CATHODE
4- HEATER
5- HEATER
6- GRID NO. 2
7- PLATE
8- GRID NO.3 & INTERNAL SHIELD
9- GRID NO. 2



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GENERAL CHARACTERISTICS

MECHANICAL

Base	Noval, 9 pin
Bulb	T 6½

ELECTRICAL

Heating	indirect, parallel supply AC or DC
Heater Voltage	6.3 volts ±5%
Heater Current	340 ma

Direct Interelectrode Capacitances

	Without External Shield	With External Shield [1]
Output	3.5	4.1 pf
Input	16.0	16.0 pf
Change in Input Capacitance at I_k = 40 ma	9.0	9.0 pf
Plate to Grid No. 1	< 0.04	< 0.035 pf
Plate to Cathode	< 0.07	0.50 pf
Grid No. 1 to Heater	< 0.75	0.75 pf
Plate to Heater	< 0.45	0.45 pf

[1] Inside diameter of external shield = 7/8 inches; length = 1¾ inches.

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Maximum Ratings, Absolute Values

Plate Voltage, Zero Plate Current	400 volts max
Plate Voltage	250 volts max
Grid No. 2 Voltage, Zero Grid Current	400 volts max
Grid No. 2 Voltage	200 volts max
Negative Grid No. 1 Voltage	25 volts max
Peak Negative Grid No. 1 Voltage	50 volts max
Peak Positive Grid No. 1 Voltage	50 volts max
Plate Dissipation	5 watts max
Grid No. 2 Dissipation [2]	1 watt max
Peak Grid No. 1 Dissipation	0.01 watts max
Cathode to Heater Voltage	100 volts max
Cathode Current	50 ma
Cathode Current (1000 Hours Operation)	65 ma
Bulb Temperature [3]	200°C

Typical Operation

Plate Supply Voltage	135 volts
Grid No. 2 Supply Voltage	165 volts
Grid No. 3 Voltage	0 volts
Grid No. 1 Supply Voltage	+ 12.5 volts
Cathode Resistor	360 ohms
Plate Current	35 ma
Screen Current	5 ma
Transconductance	50,000 micromhos
Amplification Factor	58
Equivalent Noise Resistance (Pentode Connected)	100 ohms
Equivalent Noise Resistance (Triode Connected)	60 ohms
Input Conductance (100 mc)	2000 micromhos
Figure of Merit (Without External Shield) [4]	410 mc
Figure of Merit (With External Shield) [1, 4]	390 mc

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[2] Care should be taken not to exceed the rated Grid No. 2 dissipation value due to switching of positive supply voltages.

[3] A bulb temperature of 220°C is permissible, with reduced life.

[4] Figure of Merit (Gain-Bandwidth Product) $= \frac{G_m}{2\pi(C_{in} + C_{out})}$

PLATE AND SCREEN GRID CURRENT AS A FUNCTION OF CONTROL-GRID VOLTAGE

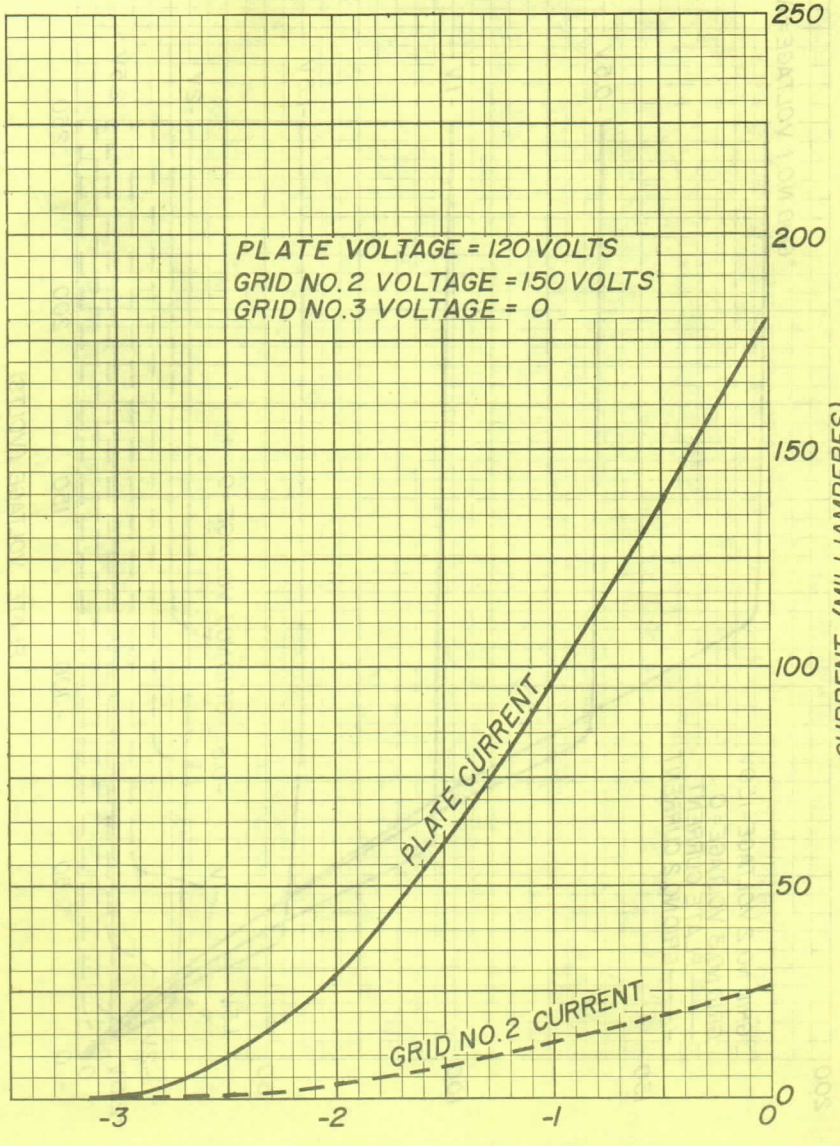

PLATE AND SCREEN-GRID CURRENT AS A FUNCTION OF THE PLATE VOLTAGE