



**SHEET-BEAM TUBE**

**DESCRIPTION AND RATING**

The 6HW8 is a miniature, double-plate, sheet-beam tube which incorporates a pair of balanced deflectors to direct the electron beam to either of the two plates, and a control grid to vary the intensity of the beam.

**GENERAL**

**ELECTRICAL**

Cathode—Coated Unipotential	
Heater Voltage, AC or DC*	6.3 ± 0.6 Volts
Heater Current†	0.3 Amperes
Direct Interelectrode Capacitances, approximate‡	
Deflector-Number 1 to All	4.2 pf
Deflector-Number 2 to All	4.2 pf
Grid-Number 1 to All Except Plates	7.5 pf
Plate-Number 1 to All	4.4 pf
Plate-Number 2 to All	4.4 pf
Grid-Number 1 to Deflector-Number 1, maximum	0.05 pf
Grid-Number 1 to Deflector-Number 2, maximum	0.03 pf
Plate-Number 1 to Plate-Number 2	0.12 pf
Deflector-Number 1 to Deflector-Number 2	0.35 pf

**MECHANICAL**

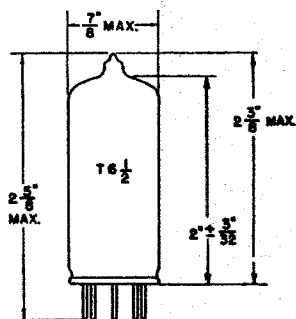
Mounting Position—Any  
 Envelope—T-6½, Glass  
 Base—E9-1, Small Button 9-Pin  
 Outline Drawing—EIA 6-3  
 Maximum Diameter . . . . . 7/8 Inches  
 Maximum Over-all Length . . . 2 5/8 Inches  
 Maximum Seated Height . . . 2 3/8 Inches

**MAXIMUM RATINGS**

**DESIGN-MAXIMUM VALUES**

Plate Voltage, Each Plate	330 Volts	Positive DC Grid-Number 1 Voltage	0 Volts
Accelerator Voltage	330 Volts	Plate Dissipation, Each Plate	2.0 Watts
Peak Positive Deflector Voltage, Each Deflector	165 Volts	DC Cathode Current	30 Milliampes
Peak Negative Deflector Voltage, Each Deflector	165 Volts	Grid-Number 1 Circuit Resistance With Cathode Bias	0.25 Megohms

**PHYSICAL DIMENSIONS**

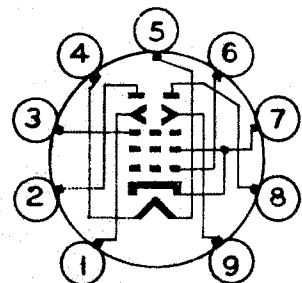


EIA 6-3

**TERMINAL CONNECTIONS**

- Pin 1—Deflector Number 2
- Pin 2—Plate Number 2
- Pin 3—Accelerator
- Pin 4—Heater
- Pin 5—Heater and Internal Shield
- Pin 6—Grid Number 1 (Control Grid)
- Pin 7—Cathode and Focus Electrode
- Pin 8—Plate Number 1
- Pin 9—Deflector Number 1

**BASING DIAGRAM**



EIA 9NQ

CHARACTERISTICS AND TYPICAL OPERATION (Continued)

Accelerator Current	1.4	Milliamperes
Grid-Number 1 Transconductance	4000	Micromhos
Grid-Number 1 Voltage, approximate Ib (total) = 10 Microamperes	-14	Volts
Average Deflector Characteristics		
Plate-Number 1 Voltage	250	Volts
Plate-Number 2 Voltage	250	Volts
Accelerator Voltage	250	Volts
Cathode-Bias Resistor	270	Ohms
Deflector Switching Voltage, maximum <sup>#</sup>	40	Volts
Deflector-Bias Voltage for Minimum Deflector Switching Voltage <sup>#</sup>	12	Volts
Voltage Difference between Deflectors For Ib1 = Ib2, approximate	0	Volts
Plate-Number 1 Current, maximum Ed1 = +2 Volts, Ed2 = +32 Volts Ib2 = 18 ma	50	Microamperes
Plate-Number 2 Current, maximum Ed1 = +32 Volts, Ed2 = +2 Volts Ib1 = 18 ma	50	Microamperes
Deflector-Number 1 Current, maximum Ed1 = +2 Volts, Ed2 = +38 Volts Eb = 225 Volts, Eg1 = +3 Volts	55	Microamperes
Deflector-Number 2 Current, maximum Ed1 = +38 Volts, Ed2 = +2 Volts Eb = 225 Volts, Eg1 = +3 Volts	55	Microamperes

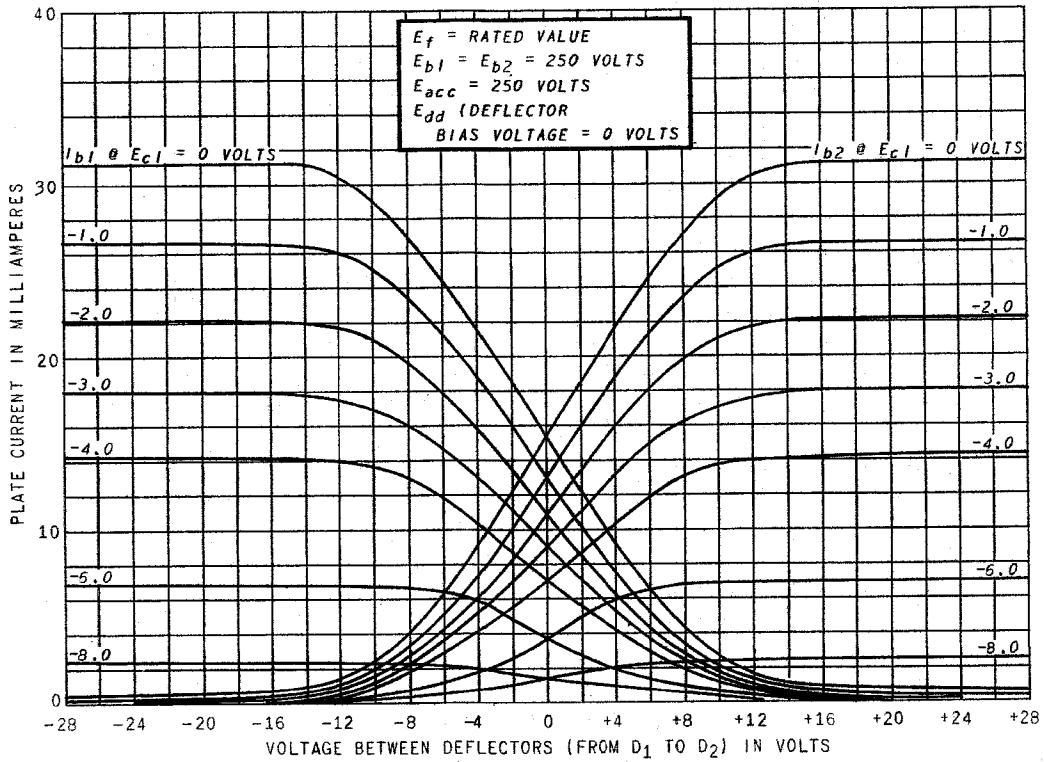
\* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

+ Heater current of a bogey tube at Ef = 6.3 volts.

# Without external shield.

# Deflector switching voltage is defined as the total voltage change on either deflector with an equal and opposite change on the other deflector required to switch the plate current from one plate to the other.

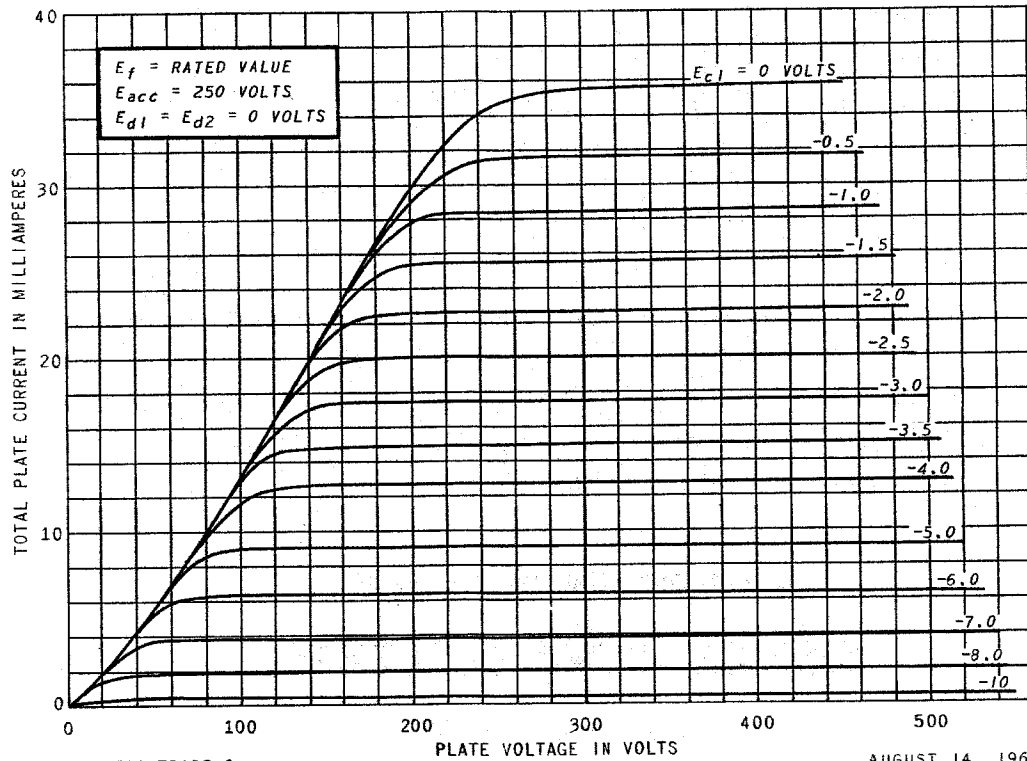
AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD193-1

AUGUST 14, 1962

AVERAGE PLATE CHARACTERISTICS



K-55611-TD193-2

AUGUST 14, 1962