PRODUCT INFORMATION

6LT8

Duplex-Diode Pentode

The 6LT8 is a miniature tube containing a pentode and two diodes. It is intended for horizontal oscillator and AFC service.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

	Series Circuit*	Parallel Circuit‡	
Heater Voltage, AC or DC	6.3	6.3±0.6§	Volts
Heater Current	0.6±0.04¶	0.6#	Amperes
Heater Warm-up Time, Average△	11	---	Seconds

Direct Interelectrode Capacitances**

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp)	0.065	pf
Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.)	11	pf
Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.)	3.6	pf

Diode Sections

Plate (Section 1) to Cathode: (Dp1 to Dk)	1.4	pf
Plate (Section 2) to Cathode: (Dp2 to Dk)	1.4	pf
Plate to Plate: (Dp1 to Dp2)	1.4	pf

MECHANICAL

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-2

Maximum Diameter	0.875	Inches
Minimum Diameter	0.750	Inches
Maximum Over-all Length	2.187	Inches
Maximum Seated Height	1.937	Inches

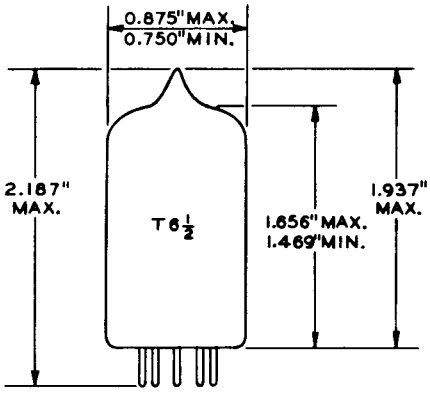
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

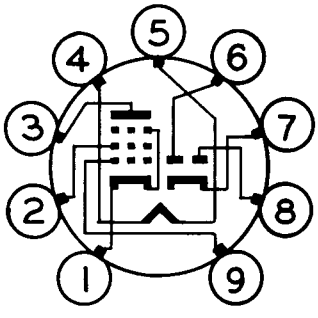


EIA 6-2

TERMINAL CONNECTIONS

Pin 1 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 2 - Pentode Grid Number 2 (Screen)
Pin 3 - Pentode Plate
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Diode Plate (Section 2)
Pin 7 - Diode Cathode
Pin 8 - Diode Plate (Section 1)
Pin 9 - Pentode Grid Number 1

BASING DIAGRAM



EIA 9RL

MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

Pentode Section

Plate Voltage	330	Volts
Screen Supply Voltage	330	Volts
Screen Voltage - See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	3.1	Watts
Screen Dissipation	0.65	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	1.0	Megohms

Diode Sections

Diode Current for Continuous Operation, Each Diode	5.0	Milliamperes

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Pentode Section

Plate Voltage	125	Volts
Screen Voltage	125	Volts
Cathode-Bias Resistor	56	Ohms
Plate Resistance, approximate	200000	Ohms
Transconductance	13000	Micromhos
Plate Current	10	Milliamperes
Screen Current	3.4	Milliamperes
Grid-Number 1 Voltage, approximate		
Ib = 20 Microamperes	-3.5	Volts

Diode Sections

Average Diode Current, Each Diode		
With 5 Volts DC Applied	20	Milliamperes

NOTES

* Operated with the heater in series with the heaters of other tubes having the same bogey heater current.

‡ Operated with the heater in parallel with the heaters of other tubes having the same bogey heater voltage.

§ For parallel heater operation, 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.

¶ For series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

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

Δ The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.

** Without external shield.

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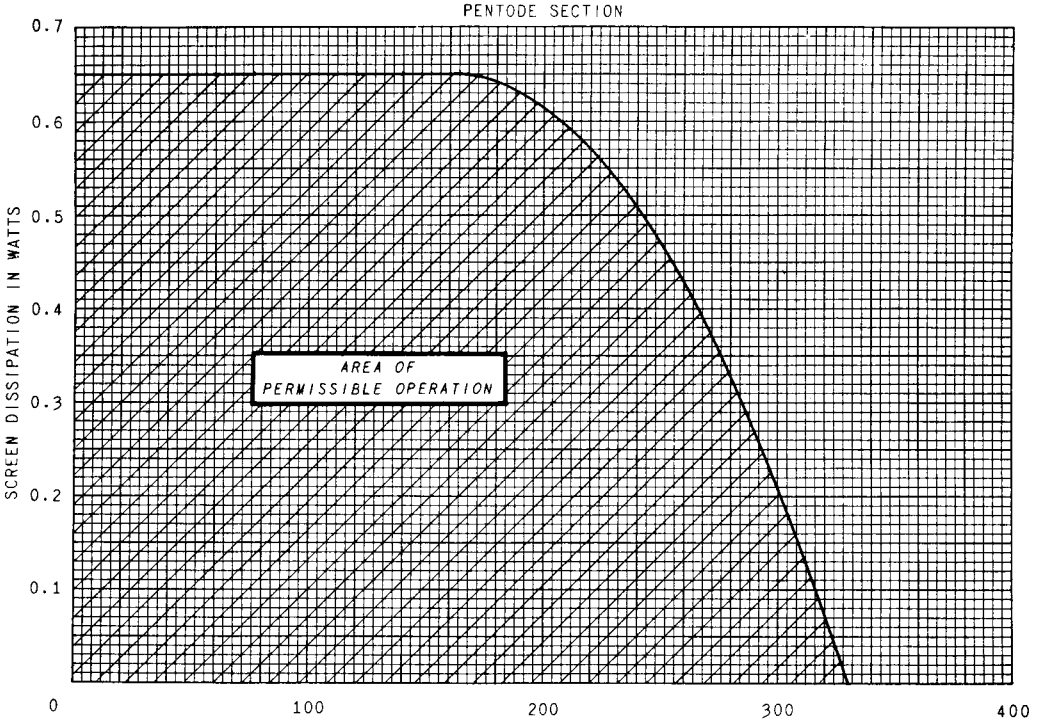
SCREEN RATING CHART

PENTODE SECTION

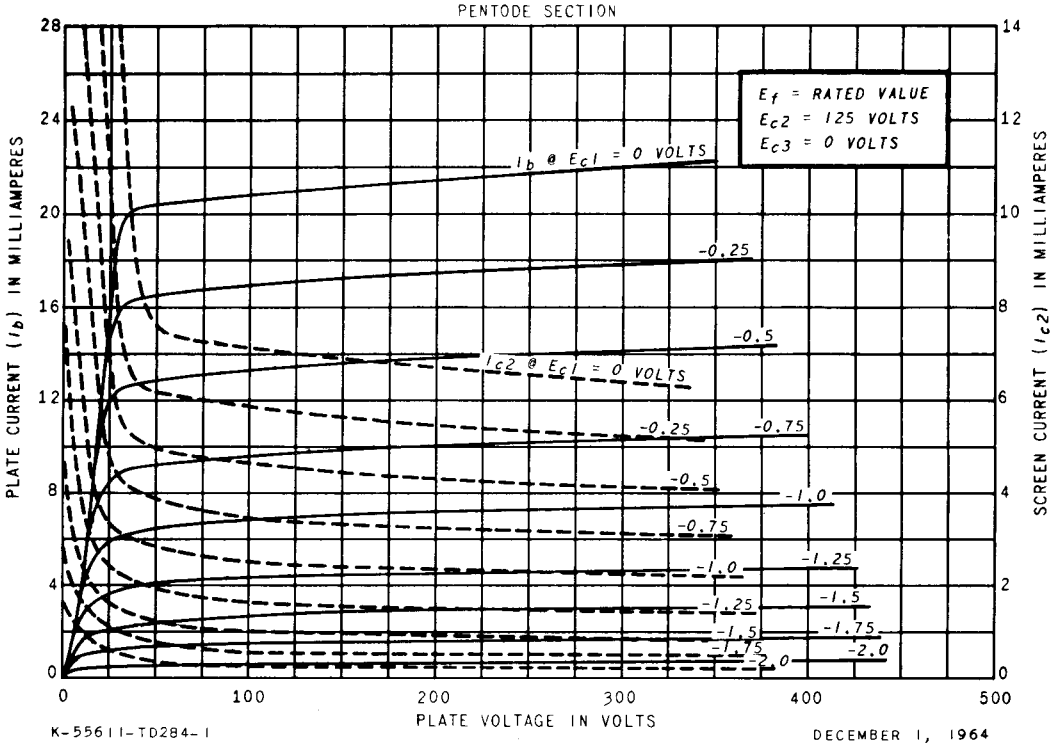


K-55611-TD23-1

OCTOBER 8, 1963

AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

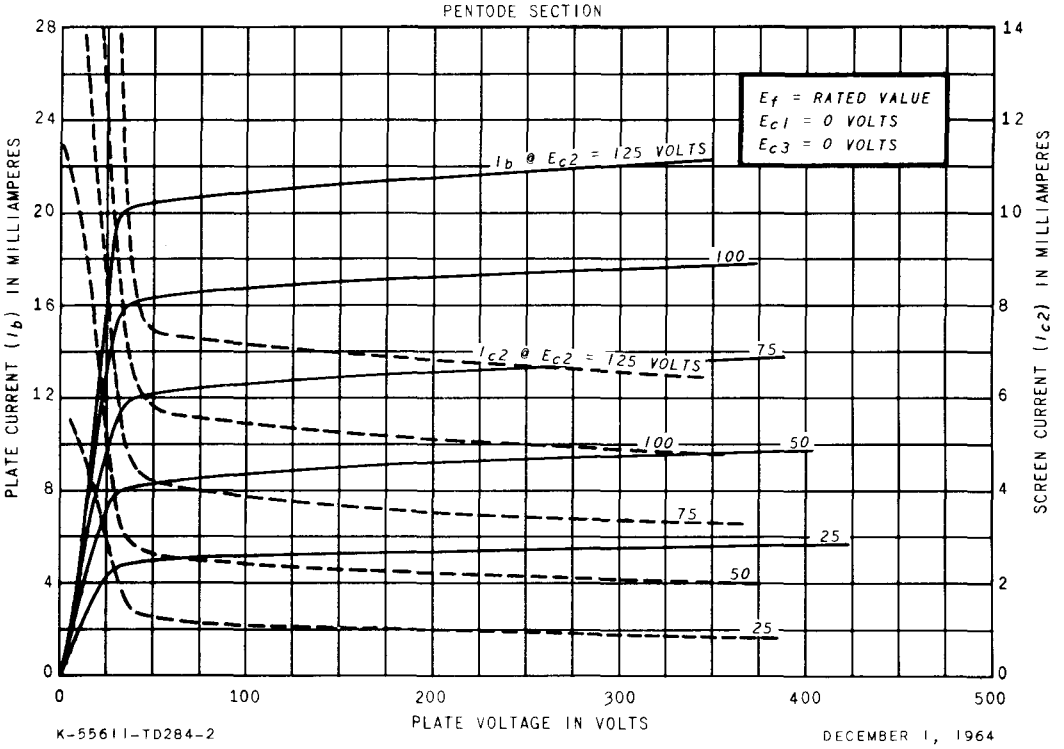


K-55611-TD284-1

DECEMBER 1, 1964

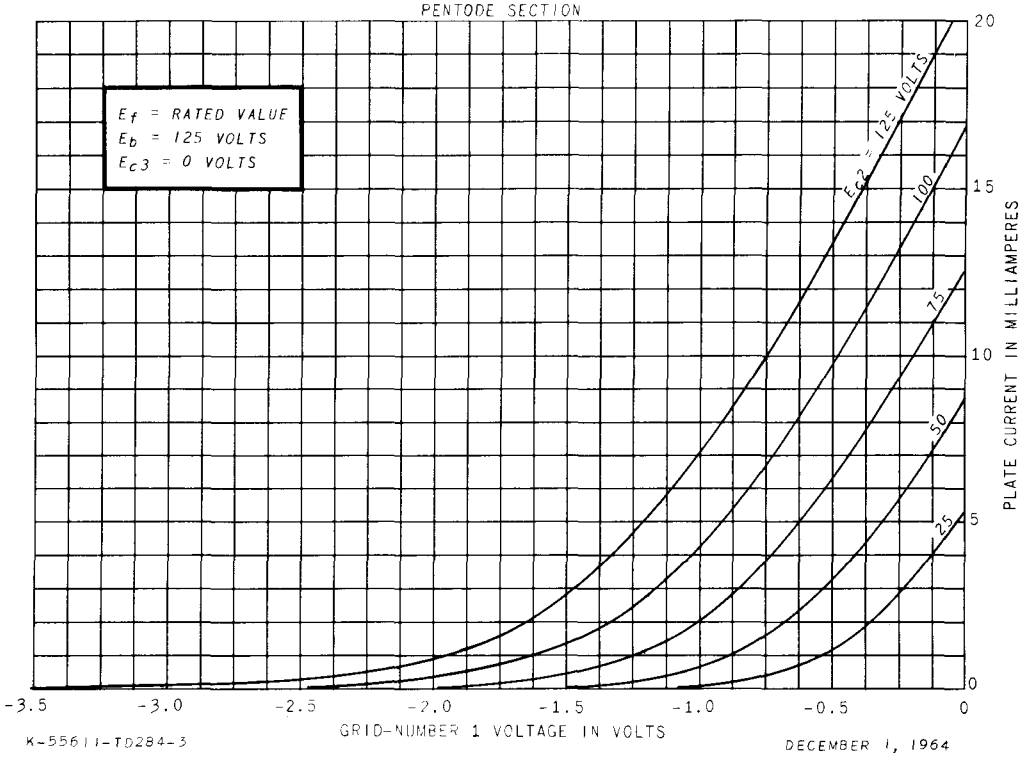
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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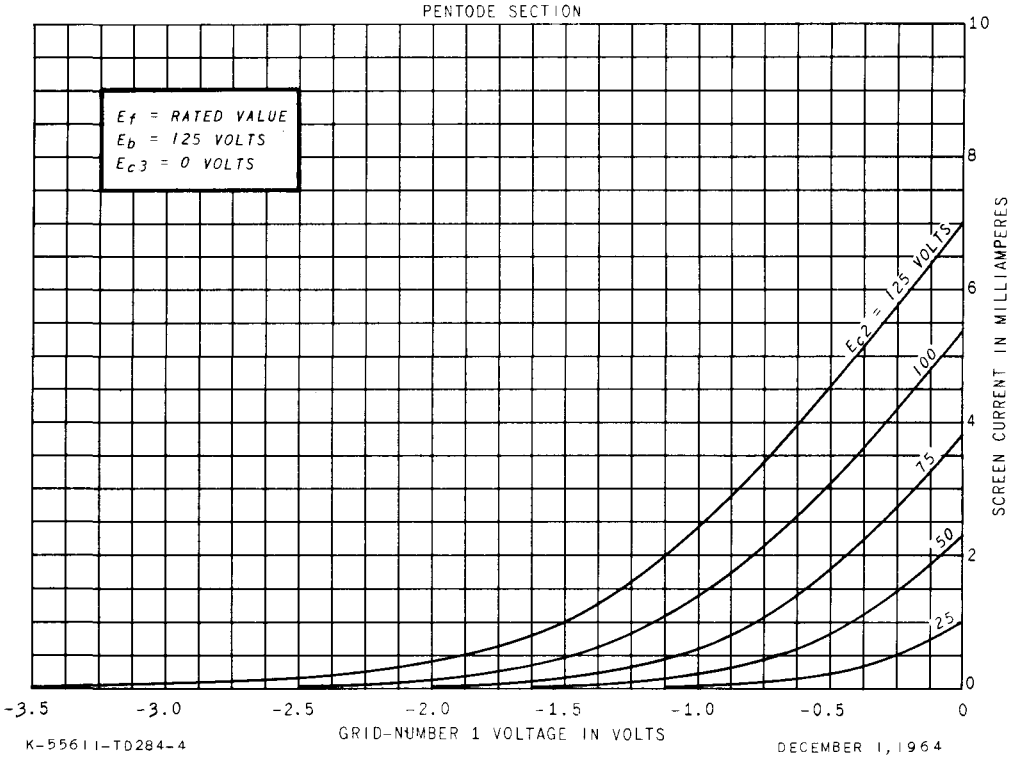

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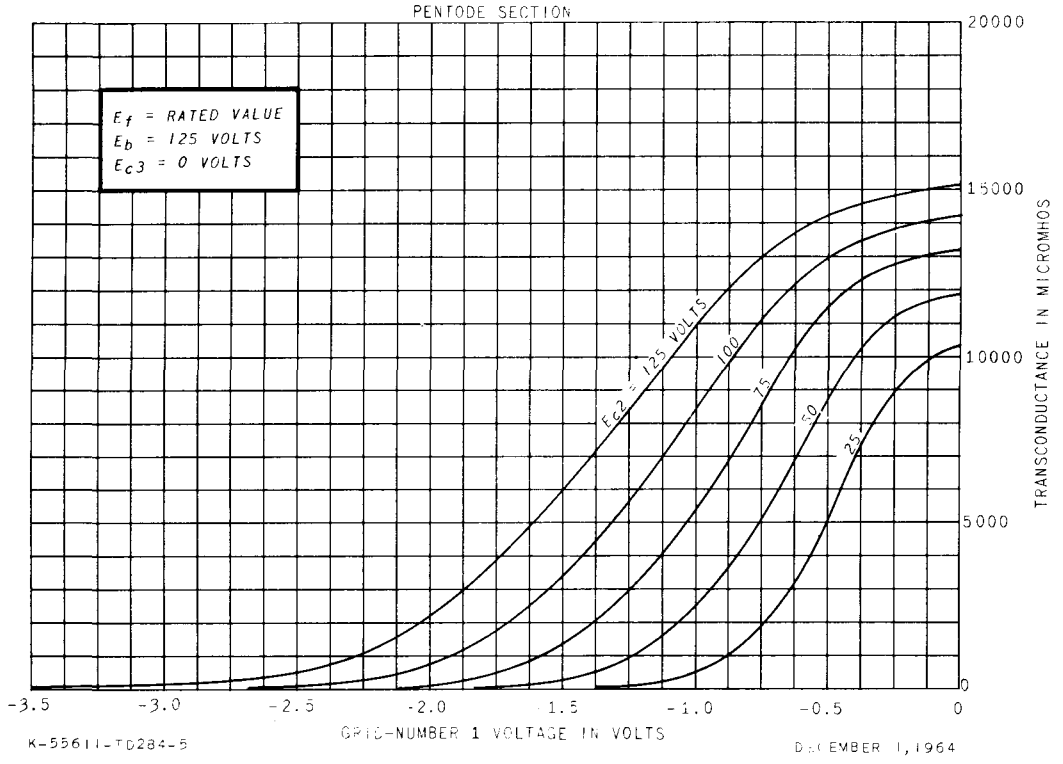
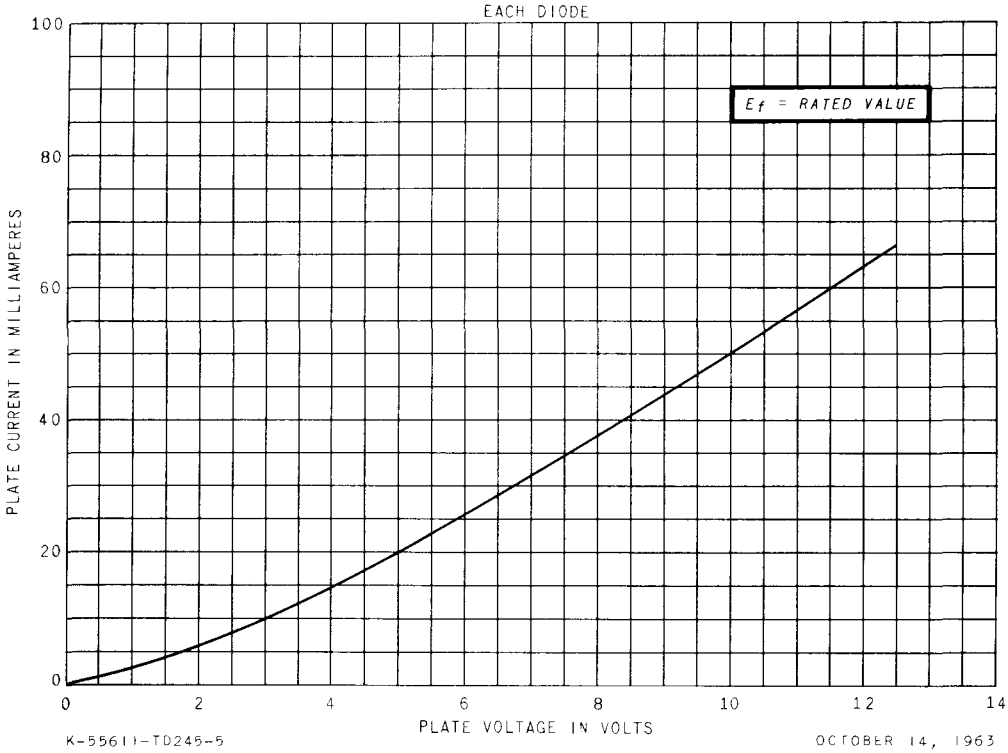
AVERAGE PLATE CHARACTERISTICS