ELECTRONICS

6HM5
TRIODE

FOR VHF RF AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6HM5 is a miniature triode designed particularly for service in VHF television tuners as a grounded-cathode rf amplifier.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.185	Amperes

Direct Interelectrode Capacitances§

Grid to Plate: (g to p), maximum	0.34	pf
Input: g to (h + k + i.s.)	4.5	pf
Output: p to (h + k + i.s.)	3.0	pf
Heater to Cathode: (h to k)	2.5	pf

MECHANICAL

Operating Position - Any
Envelope - T-5 1/2, Glass
Base - E7-1, Miniature Button 7-Pin
Outline Drawing - EIA 5-2

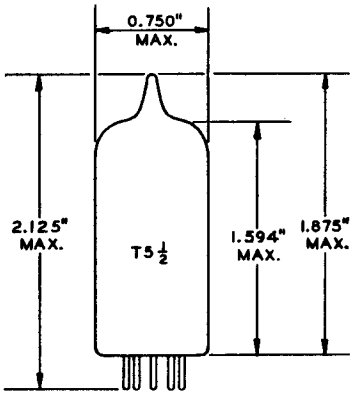
Maximum Diameter	0.750	Inches
Maximum Over-all Length	2.125	Inches
Maximum Seated Height	1.875	Inches

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	200	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	2.2	Watts
DC Cathode Current	20	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	100	Volts
Heater Negative with Respect to Cathode	100	Volts
Grid Circuit Resistance		
With Cathode Bias	1.0	Megohms

PHYSICAL DIMENSIONS

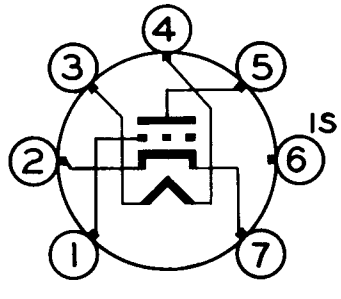


EIA 5-2

TERMINAL CONNECTIONS

Pin 1 - Grid
Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Internal Shield
Pin 7 - Cathode

BASING DIAGRAM



EIA 7GM

MAXIMUM RATINGS (Cont'd)

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.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	120	135	Volts
Grid Voltage	0	-1.0	Volts
Grid-Circuit Resistance	0.1	0	Megohms
Amplification Factor	82	78	
Transconductance	18000	14500	Micromhos
Plate Current	15	12.5	Milliamperes
Grid Voltage, approximate Gm = 150 Micromhos	-5.1	-5.7	Volts
Grid Voltage, approximate Gm = 1500 Micromhos	---	-2.7	Volts
Hot Input Resistance¶	---	1000	Ohms
Hot Input Capacitance¶	---	8.5	Picofarads
Noise Figure#	4.0	4.2	Decibels

NOTES

* 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.

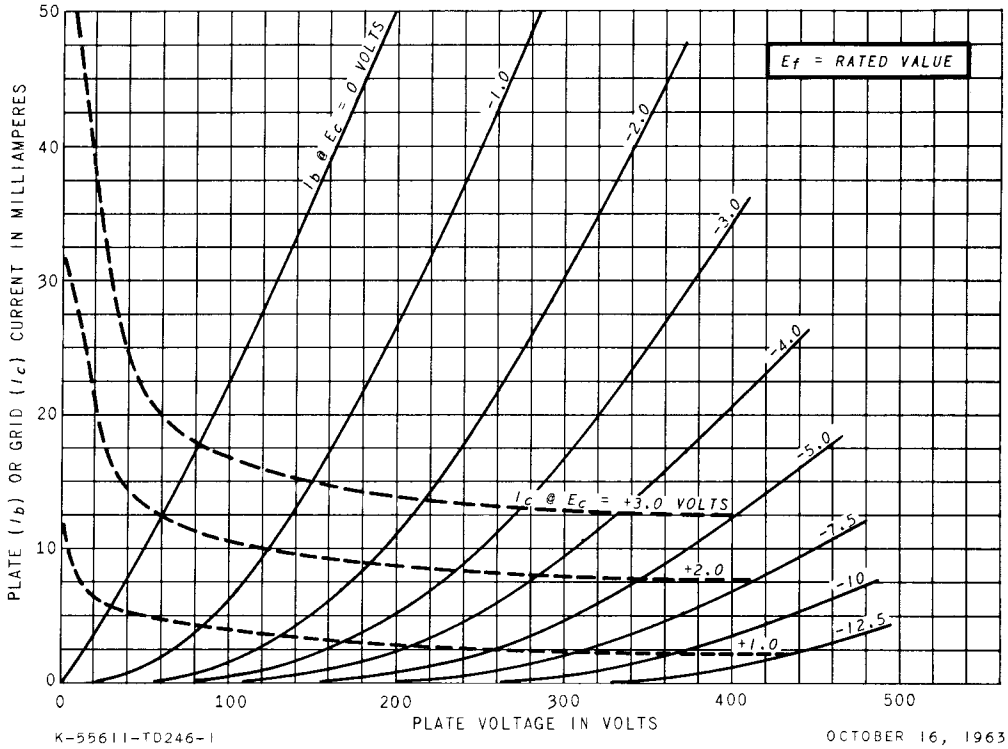
‡ Heater current of a bogey tube at Ef = 6.3 volts.

§ With external shield (EIA 316) connected to cathode.

¶ Measured at 200 megacycles with plate at signal ground; Ec1 = -1.5 volts.

\# In a 200 megacycle noise-matched, optimized, neutralized, grounded-cathode triode amplifier stage.

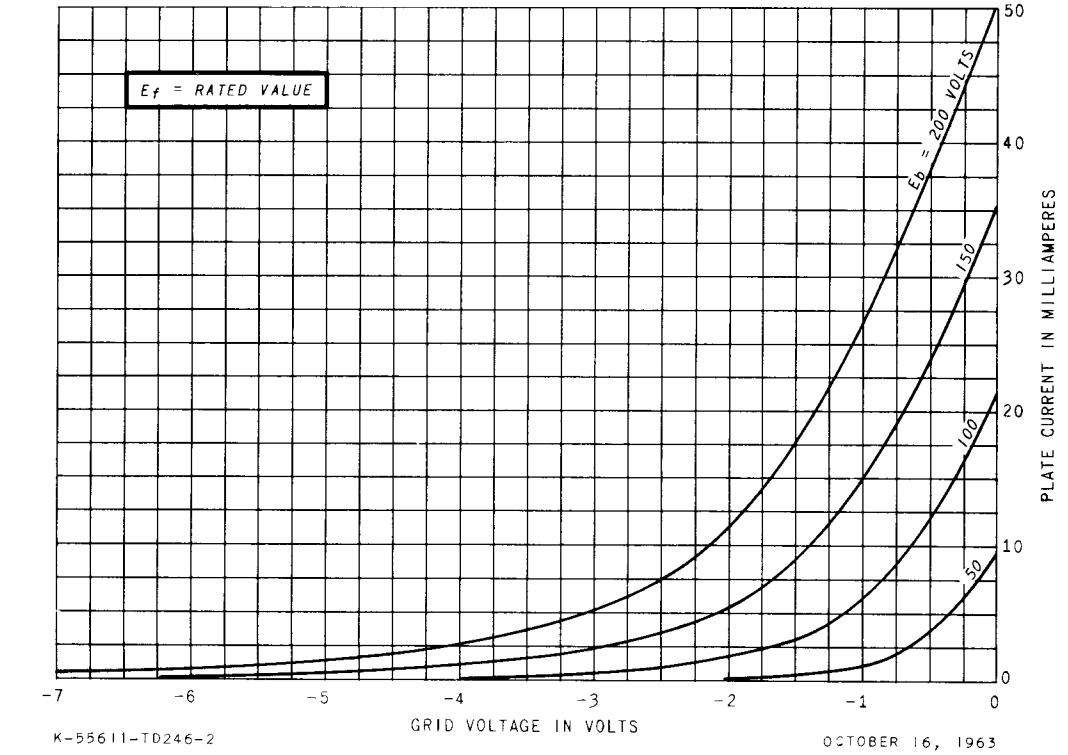
AVERAGE PLATE CHARACTERISTICS



K-55611-TD246-1

OCTOBER 16, 1963

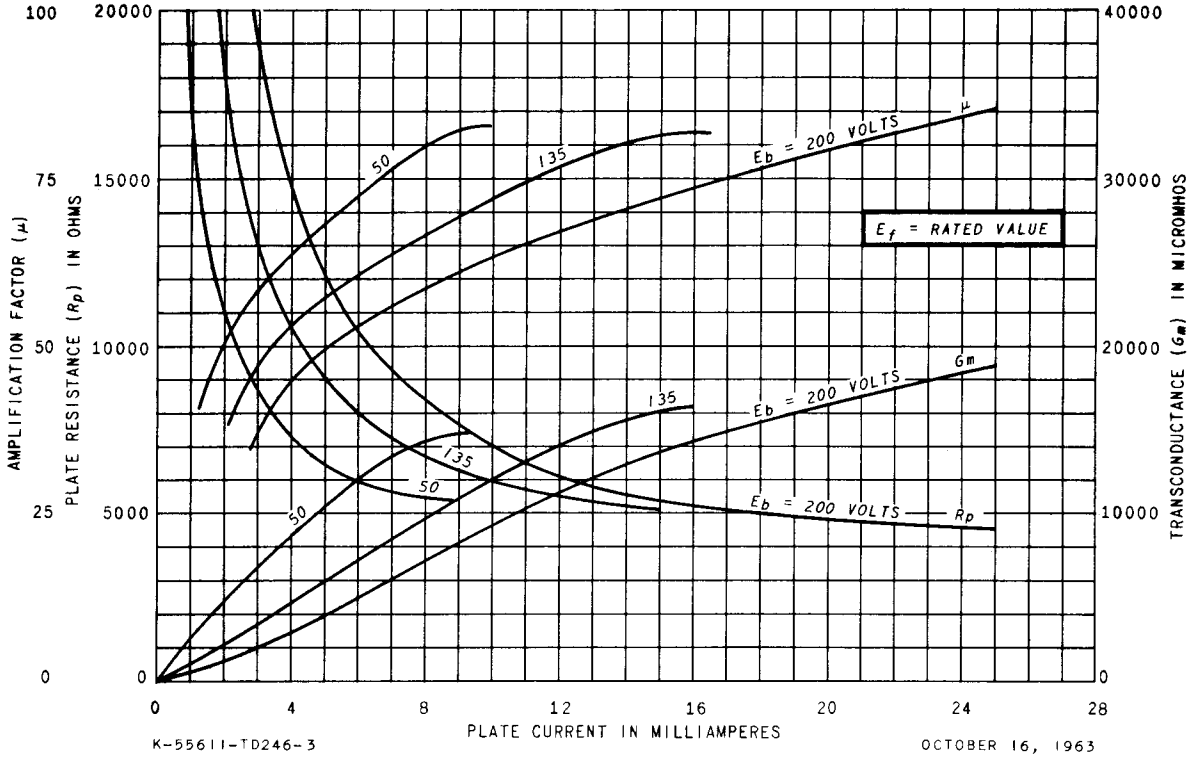
AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD246-2

OCTOBER 16, 1963

AVERAGE CHARACTERISTICS



TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky