6GK5

FRAME-GRID TRIODE

DESCRIPTION AND RATING

The 6GK5 is a frame-grid, gain-controlled triode designed for use as a VHF RF amplifier.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3 ± 0.6	Volts
Heater Current†	0.18	Amperes
Direct Interelectrode Capacitances‡		
Grid to Plate: (g to p)	0.52	pf
Input: g to (h+k+i.s.)	5.0	pf
Output: p to (h+k+i.s.)	3.5	pf
Heater to Cathode: (h to k)	2.5	pf

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin
Outline Drawing—EIA 5-2

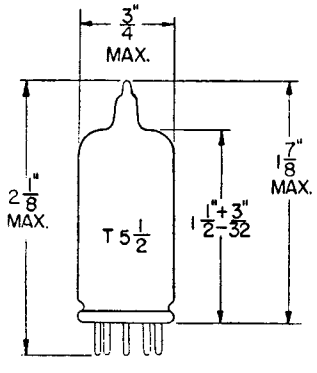
Maximum Diameter	¾	Inches
Maximum Over-all Length	2⅛	Inches
Maximum Seated Height	1⅞	Inches

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	200	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	2.5	Watts
DC Cathode Current	22	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

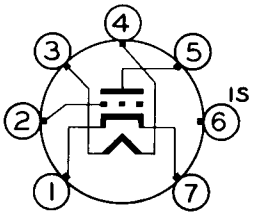


EIA 5-2

TERMINAL CONNECTIONS

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

BASING DIAGRAM



EIA 7FP

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

CLASS A_1 AMPLIFIER

Plate Voltage	135	Volts
Grid Voltage	−1.0	Volts
Amplification Factor	78	
Plate Resistance, approximate	5400	Ohms
Transconductance	15000	Micromhos
Plate Current	11.5	Milliamperes
Grid Voltage, approximate Gm = 150 Micromhos	−4.2	Volts
Grid Voltage, approximate Gm = 1500 Micromhos	−2.5	Volts
Hot Input Resistance (200 MC)§	275	Ohms
Hot Input Capacitance (200 MC)§	11.2	pf
Noise Figure (200 MC)¶	4.7	db

* 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.

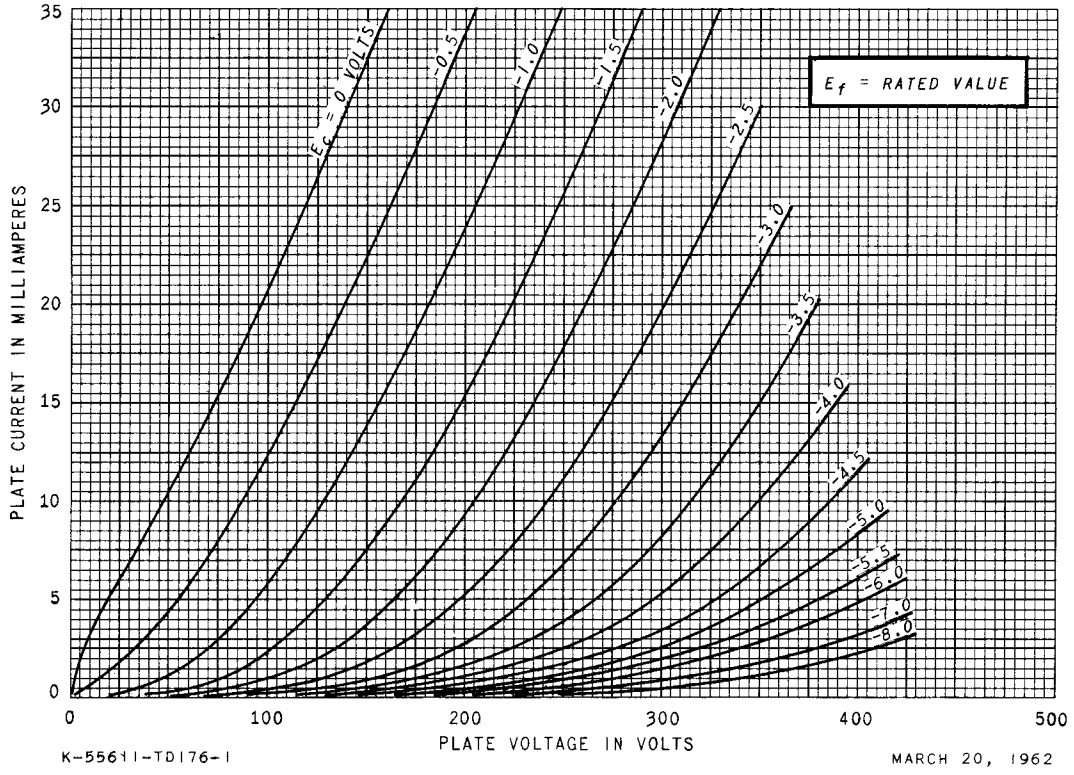
† Heater current of a bogey tube at Ef = 6.3 volts.

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

§ Measured under grounded-plate conditions.

¶ Optimized neutralized triode RF amplifier stage, noise matched.

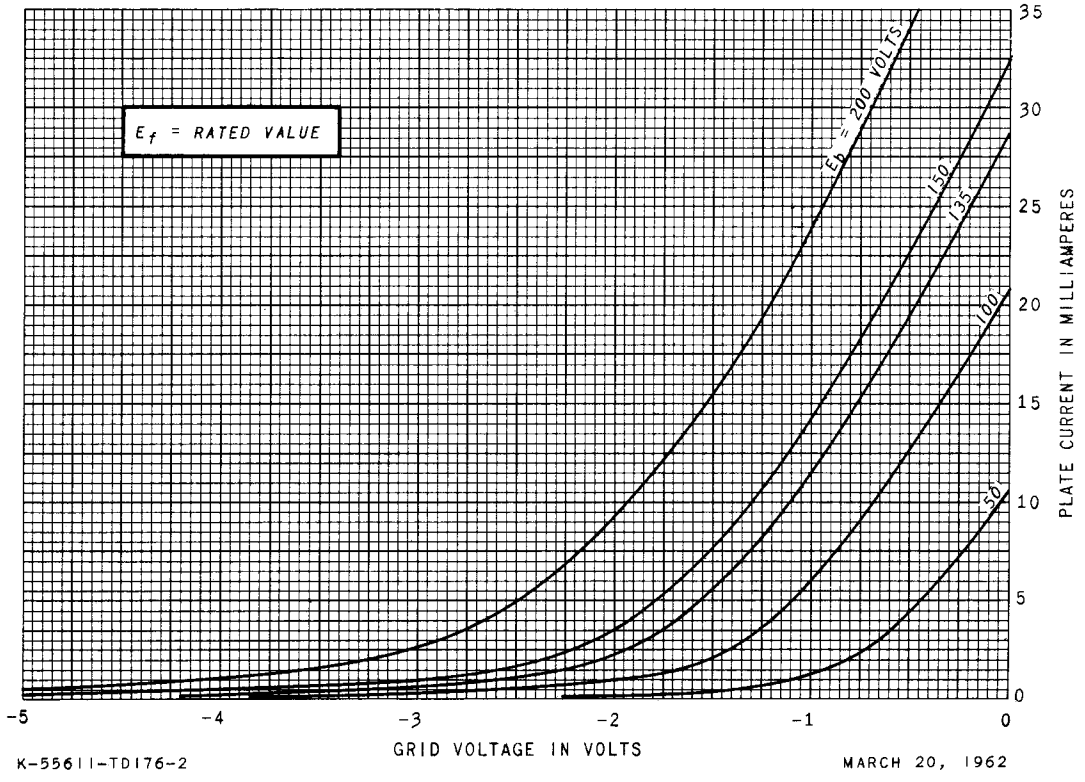
AVERAGE PLATE CHARACTERISTICS



K-5561I-TD176-1

MARCH 20, 1962

AVERAGE TRANSFER CHARACTERISTICS



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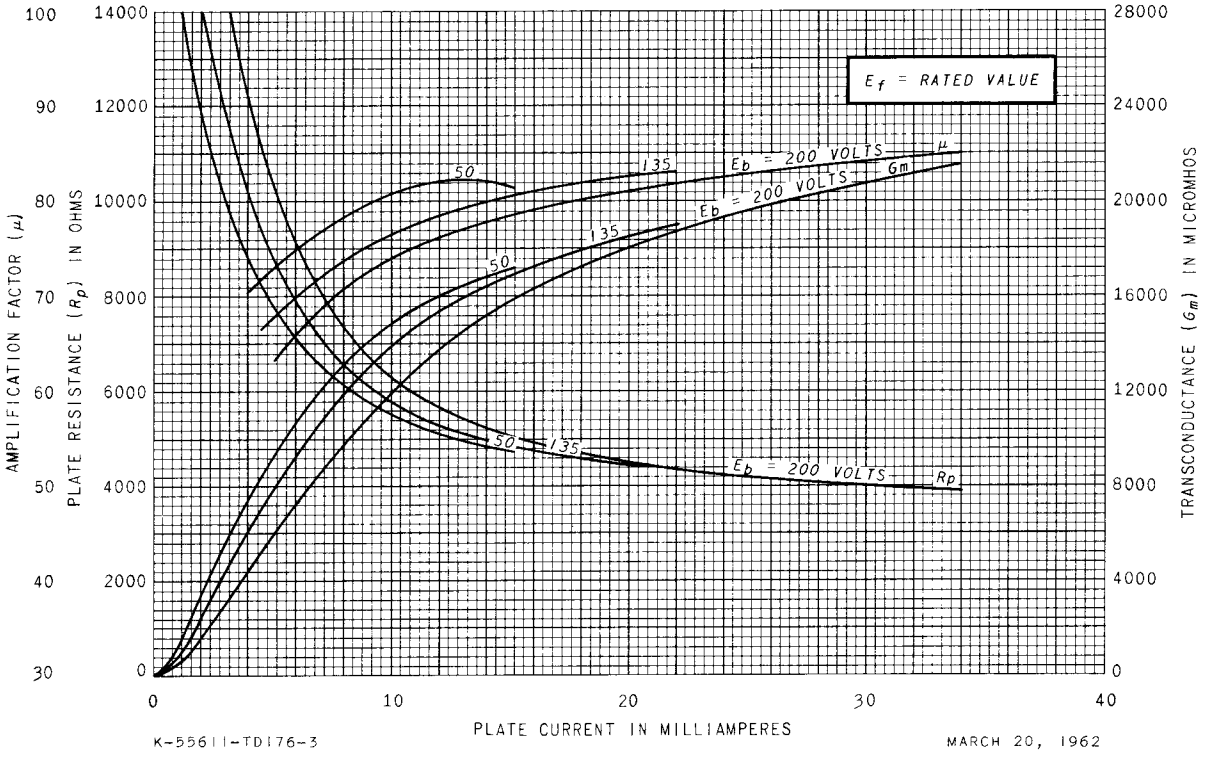
MARCH 20, 1962

AVERAGE CHARACTERISTICS



RECEIVING TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky