6FS5

"SHADOW-GRID" BEAM PENTODE

DESCRIPTION AND RATING

FOR VHF RF AMPLIFIER APPLICATIONS

The 6FS5 is a miniature tube, similar in construction to a beam pentode, with an internally connected grid between the control grid and the screen grid, which serves to reduce the ratio of screen current to plate current. The tube is designed for use as a radio-frequency amplifier in VHF television receivers.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential		
Heater Voltage, AC or DC*	6.3 ± 0.6	Volts
Heater Current†	0.2	Amperes

	With Shield	Without Shield‡	
Direct Interelectrode Capacitances			
Grid Number 1 to Plate: (g1 to p)	0.016	0.03	pf
Input: g1 to (h+k+g2+g3+b.p.	4.8	4.8	pf
Output: p to (h+k+g2+g3+b.p.)	2.8	2.0	pf

MECHANICAL

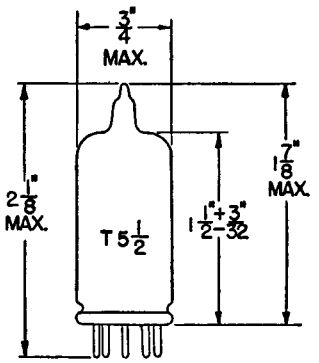
Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	300	Volts
Screen Voltage	150	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
Negative DC Grid-Number 1 Voltage	50	Volts
Plate Dissipation	3.25	Watts
Screen Dissipation	0.15	Watts
DC Cathode Current	20	Milliamperes
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 Fixed Bias	0.5	Megohms

PHYSICAL DIMENSIONS

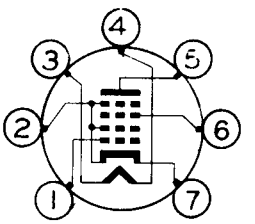


EIA 5-2

TERMINAL CONNECTIONS

Pin 1—Grid Number 1 (Control Grid)
Pin 2—Cathode, Grid Number 2 ("Shadow Grid"), and Beam Plate
Pin 3—Heater
Pin 4—Heater
Pin 5—Plate
Pin 6—Grid Number 3 (Screen Grid)
Pin 7—Cathode, Grid Number 2 ("Shadow Grid"), and Beam Plate

BASING DIAGRAM



EIA 7GA

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	275	Volts
Screen Voltage	135	Volts
Grid-Number 1 Voltage	−0.2	Volts
Plate Resistance, approximate	0.24	Megohms
Transconductance	10000	Micromhos
Plate Current	9.0	Milliamperes
Screen Current	0.17	Milliamperes
Grid-Number 1 Voltage, approximate Gm = 100 Micromhos	−5	Volts

* 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.

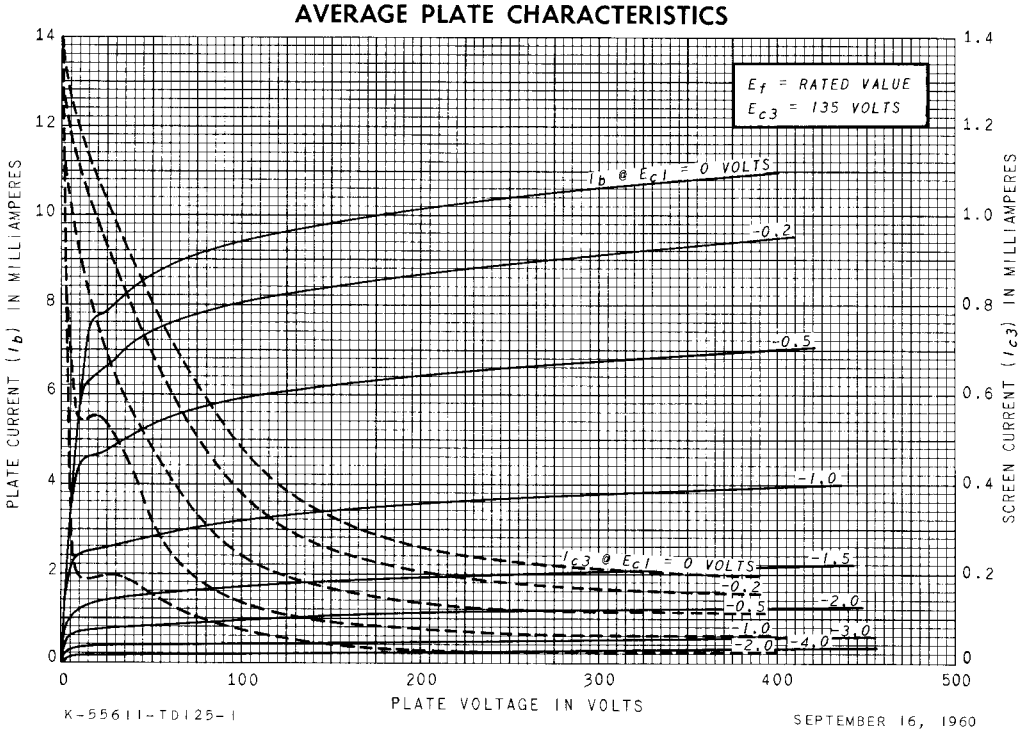
‡ With external shield (EIA 316) connected to pin 7.

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.

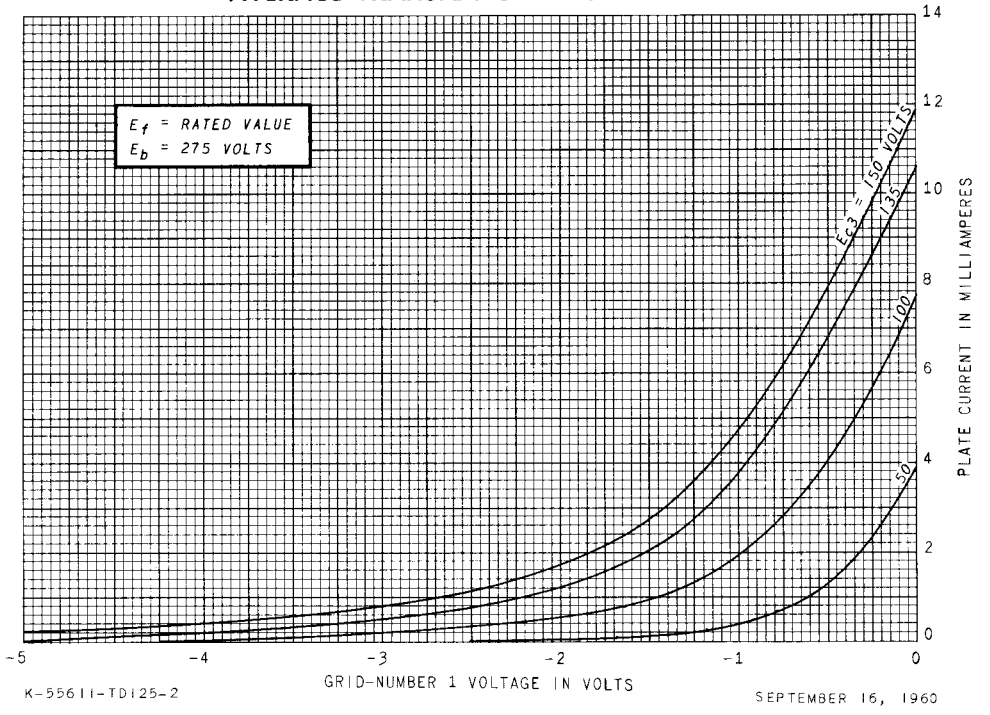
The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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.

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



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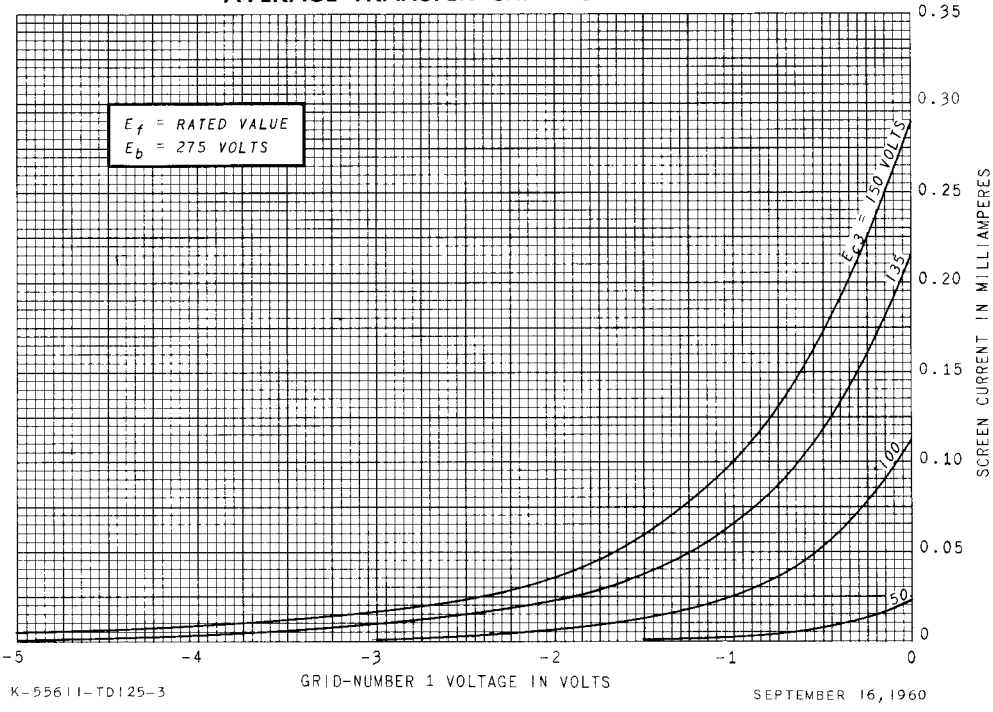

AVERAGE TRANSFER CHARACTERISTICS