ELECTRONIC INNOVATIONS IN ACTION

TUBES

—PRODUCT INFORMATION—

Beam Pentode

6JE6-C

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

COLOR TV TYPE | NOVAR CONSTRUCTION | T–12 ENVELOPE | WING FIN CONSTRUCTION

The 6JE6C is a beam pentode featuring Novar construction with a special plate fin. The fin provides improved heat distribution and a greater plate dissipation capability. This in turn increases reliability under rated conditions. It is designed for use as horizontal deflection amplifiers in color television receivers.

GENERAL

ELECTRICAL

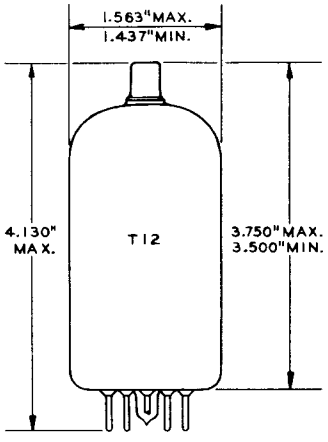
Cathode – Coated Unipotential

Heater Characteristics and ratings
Heater Voltage, AC or DC * . . . . . 6.3±0.6 Volts
Heater Current • . . . . . 2.5 Amperes
Heater Circuit . . . . . Parallel
Maximum Heater Cathode Voltage
Heater Negative with Respect to Cathode
Total DC and Peak . . . . . 200 Volts
Heater Positive with Respect to Cathode
DC . . . . . 100 Volts
Total DC and Peak . . . . . 200 Volts

MECHANICAL

Operating Position – Any
Envelope T–12
Base E9–88 (With Exhaust Tip) or
E9–76 (Without Exhaust Tip)
Top Cap C1–1
Outline Drawing EIA 12–116
Maximum Diameter . . . . . 1.563 Inches
Maximum Seated Height . . . . . 3.750 Inches
Maximum Overall Length . . . . . 4.130 Inches

PHYSICAL DIMENSIONS

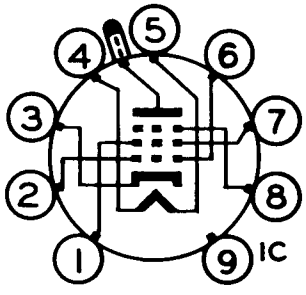


EIA 12–116

TERMINAL CONNECTIONS

Pin 1 – Grid Number 2
Pin 2 – Grid Number 1
Pin 3 – Cathode
Pin 4 – Heater
Pin 5 – Heater
Pin 6 – Grid Number 1
Pin 7 – Grid Number 2
Pin 8 – Grid Number 3 (Beam Plates)
Pin 9 – Internal Connection (Do not use)
Top Cap– Plate

BASING DIAGRAM



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MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE— DESIGN-MAXIMUM VALUES

DC Plate Supply Voltage (Boost DC Power Supply)	990	Volts	Maximum
Peak Positive Plate Pulse Voltage (Absolute Maximum)	7500	Volts	Maximum
Peak Negative Plate Pulse Voltage	1200	Volts	Maximum
Positive Grid Number 3 Voltage	75	Volts	Maximum
Grid Number 2 D.C. Voltage	220	Volts	Maximum
Peak Negative Grid Number 1 Voltage	330	Volts	Maximum
Plate Dissipation ▲ ⊕	30	Watts	Maximum
Grid Number 2 Dissipation ⊕	5	Watts	Maximum
Average Cathode Current	350	Milliamperes	Maximum
Peak Cathode Current	1200	Milliamperes	Maximum
Grid Number 1 Circuit Resistance			
With Grid Bias Feedback HV Regulation	0.47	Megohms	Maximum
With DC or Pulse Shunt HV Regulation	10	Megohms	Maximum
Bulb Temperature (At hottest point)	250	°C	Maximum

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 CHARACTERISTICS

Plate Voltage	175	60	Volts
Grid Number 2 Voltage	125	125	Volts
Grid Number 1 Voltage	−25	0	Volts
Grid Number 3 Voltage	§	§	Volts
Plate Current	130	600 ♦	Milliamperes
Grid Number 2 Current	2.8	30 ♦	Milliamperes
Transconductance	10,500		μ mhos
Triode Amplification Factor (Grid Number 2 Connected to Plate) (Eb = Ec2 = 125 Volts ; Ec1 = −25 Volts)	3.0		
Plate Resistance (Approximate)	5500		Ohms
Grid Number 1 Voltage for Ib = 1Ma (Approximate)	−54		Volts

CUTOFF CHARACTERISTICS

Peak Positive Plate Pulse Voltage	5000	5500	5500	6000	Volts
Grid Number 2 Voltage	125	125	125	125	Volts
Grid Number 3 Voltage	0	0	0	0	Volt
Grid Number 1 Voltage (Approximate) Ib = 75μa		−145	−155	−165	Volts
Grid Number 1 Voltage (Approximate) Ib = 1 Ma	−125				Volts

MINIMUM RECOMMENDED GRID DRIVE (See Chart)

Peak Positive Plate Pulse Voltage	5000	5000	6000	Volts
Peak Negative Grid Number 1 Voltage	210	225	240	Volts

AVERAGE CHARACTERISTICS (Cont'd)

SPECIAL TESTS AND RATINGS

Primary Beam – Plate Emission □		
Initial Maximum	100	μa
After 1000 Hrs. of Operation Within Ratings (Maximum)	100	μa

NOTES

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

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

▲ In stages operating wtth a grid leak bias, an adequate cathode–bias resistor or other suitable means is required to protect the tube in the absence of excitation.

♦ Values measured by a method involving a recurrent waveform such that the plate and screen dissipations will be kept within ratings in order to prevent damage to the tube.

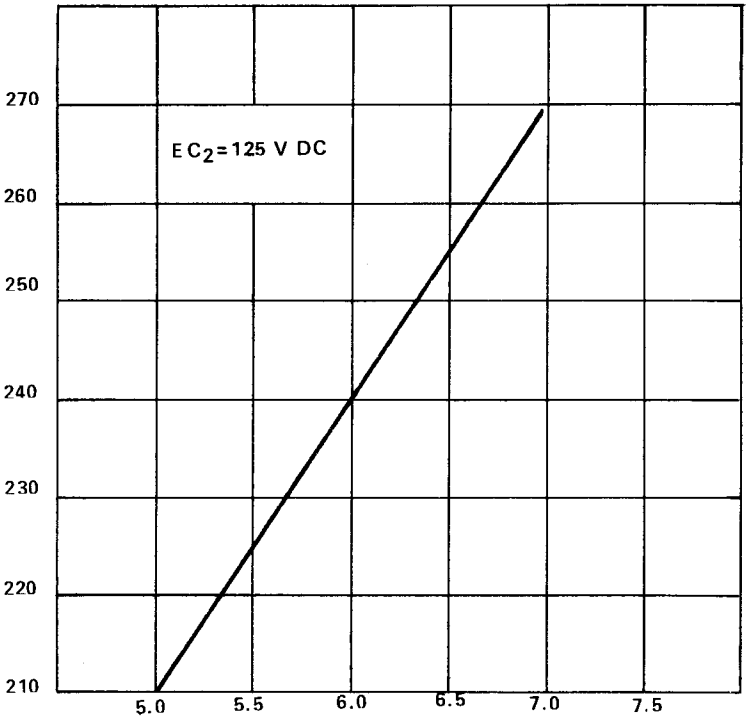
§ Grid Number 3 (Beam Plate) returned to cathode. (At socket)

⊕ Preferred Operation Dissipation Values (Watts – Max.)

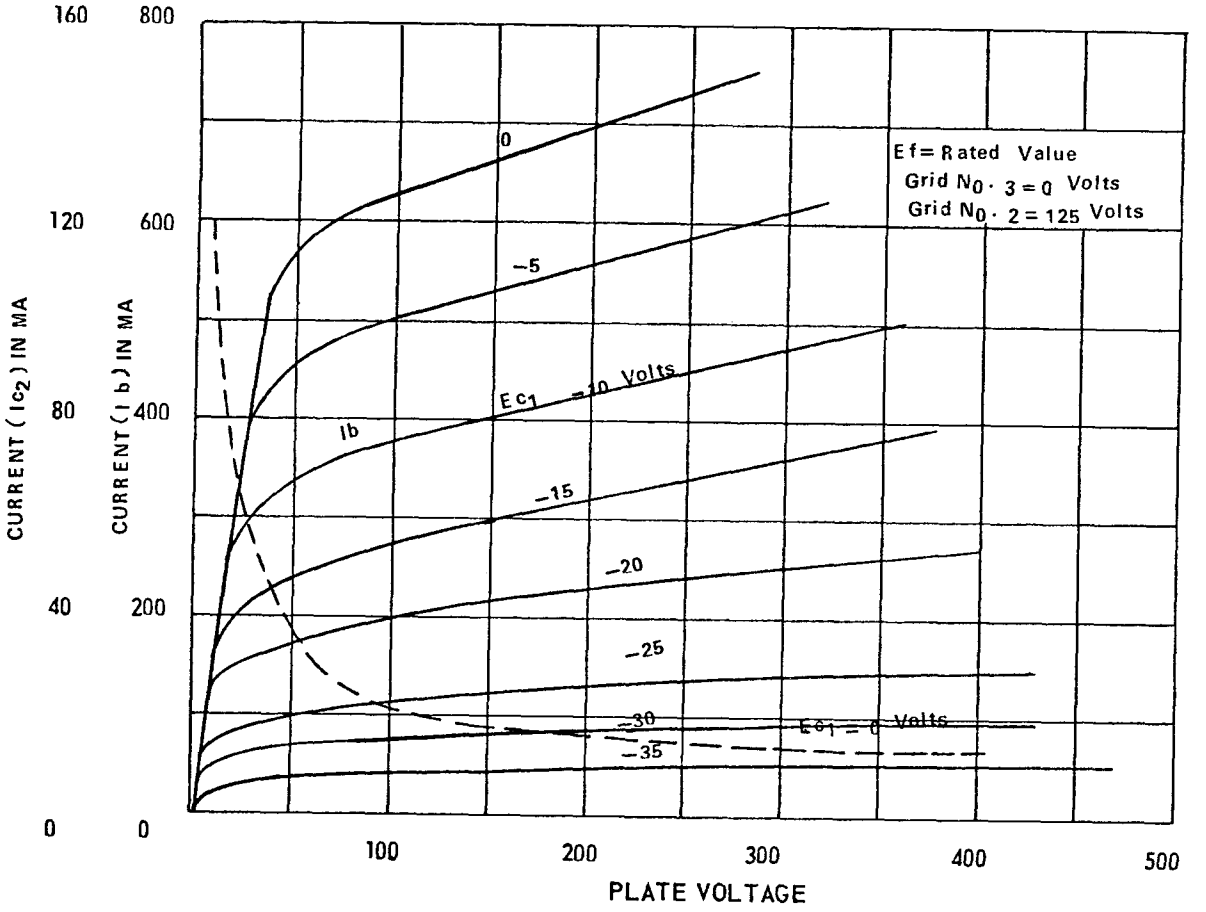
Pp	Pg2
30	3.5
28	4.0
26	4.5
24	5.0

□ Primary beam plate (Grid Number 3) emission is measured by operating the tube at a plate dissipation of 40 watts for mot more than 5 minutes with the beam plate returned to ground through a current meter.

CHART OF RECOMMENDED MINIMUM
PEAK NEGATIVE GRID VOLTAGE VS
PEAK POSITIVE PLATE PULSE VOLTAGE



AVERAGE PLATE CHARACTERISTICS



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