ELECTRONIC INNOVATIONS IN ACTION

TUBES

# Compactron Beam Pentode

**6JS6C**

**FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS**

COLOR TV TYPE | 30 WATT PLATE DISSIPATION | T–12 ENVELOPE | 12 PIN BASE

**The 6JS6C is a compactron beam power pentode designed for use as a horizontal deflection amplifier in color television sets.**

## GENERAL

### ELECTRICAL

Cathode – Coated Unipotential

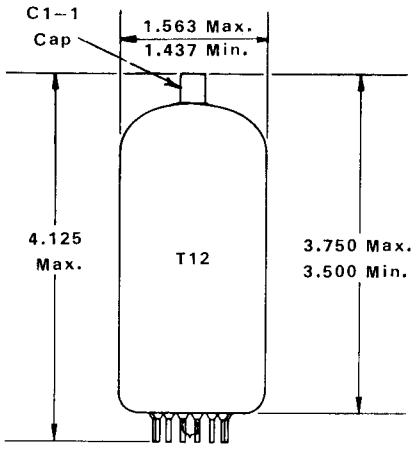
HEATER CHARACTERISTICS AND RATINGS

| | | |
|---|---|---|
| Heater Circuit | Parallel | |
| Heater Voltage ● | 6.3±0.6 | Volts |
| Heater Current ▲ | 2.25 | Amperes |
| 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 |
| Direct Interelectrode Capacitances, approximate | | |
| Grid–Number 1 to Plate (g1 to p) | 0.7 | pf |
| Input g1 to (h+k+g2+g3) | 24 | pf |
| Output p to (h+k+g2+g3) | 10 | pf |
| Bulb Temperature (At hottest point) | 225°C | Max. |

### MECHANICAL

Operating Position – Any
Envelope – T–12
Base – E12–74, Button 12–Pin
Top Cap – C1–1, Small
Outline Drawing – EIA 12–89

| | |
|---|---|
| Maximum Diameter | 1.563 Inches |
| Maximum Seated Height | 3.750 Inches |
| Maximum Overall Length | 4.125 Inches |

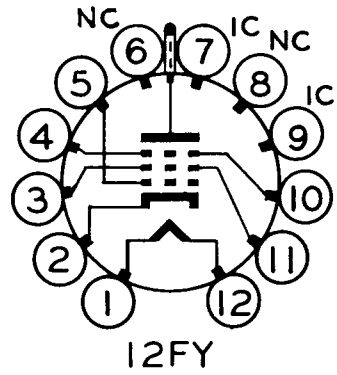



BASE E12 – 74

### TERMINAL CONNECTIONS

Pin No. 1 – Heater
Pin No. 2 – Cathode
Pin No, 3 – Grid No. 2
Pin No. 4 – Beam Plates
Pin No. 5 – Grid No. 1
Pin No. 6 – No. Connection
Pin No. 7 – Internal Connection ( Do Not Use )
Pin No. 8 – No Connection
Pin No. 9 – Internal Connection ( Do Not Use )
Pin No. 10 – Beam Plates
Pin No. 11 – Grid No. 2
Pin No. 12 – Heater
Top Cap – Plate

### BASING DIAGRAM

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## DESIGN-MAXIMUM VALUES UNLESS OTHERWISE INDICATED

| | | | |
|---|---|---|---|
| DC Plate Supply Voltage (Boost + DC Power Supply) | 990 | Volts | Max. |
| Peak Positive Plate Pulse Voltage ( Absolute Maximum ) | 7500 | Volts | Max. |
| Peak Negative Plate Pulse Voltage | 1200 | Volts | Max. |
| Positive Grid No. 3 Voltage | 75 | Volts | Max. |
| Grid No. 2 DC Voltage | 220 | Volts | Max. |
| Peak Negative Grid No. 1 Voltage | 330 | Volts | Max. |
| Plate Dissipation ♦ ⊕ | 30 | Watts | Max |
| Grid No. 2 Dissipation ⊕ | 5.5 | Watts | Max. |
| Average Cathode Current | 350 | Milliamperes | Max. |
| Peak Cathode Current | 1200 | Milliamperes | Max. |
| Grid No. 1 Circuit Resistance | | | |
| with Grid Bias Feedback HV Regulation | 0.47 | Megohms | Max. |
| with DC or Pulse Shunt HV Regulation | 10 | Megohms | Max. |

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 No. 2 Voltage | 125 | 125 | Volts |
| Grid No. 1 Voltage | −25 | 0 | Volts |
| Grid No. 3 Voltage | § | § | Volts |
| Plate Current | 130 | 600 * | Milliamperes |
| Grid No. 2 Current | 2.8 | 32 * | Milliamperes |
| Transconductance | 11500 | | μumhos |
| Triode Amplification Factor ( Grid No. 2 Connected to Plate ) (Eb = Ec2 = 125 Volts ; Ec1 = −25 Volts) | 3.0 | | |
| Plate Resistance (Approximate) | 5500 | | Ohms |
| Grid No. 1 Voltage for Ib = 1 Ma (Approximate) | −54 | | Volts |
| Ratio ( Plate Current / Grid No. 2 Current ) | 18.5:1 | | |

## HIGH VOLTAGE CUTOFF CHARACTERISTICS

| | | | | | |
|---|---|---|---|---|---|
| Peak Positive Plate Pulse Votlage | 5000 | 5000 | 5500 | 6000 | Volts |
| Grid No. 2 Voltage | 125 | 125 | 125 | 125 | Volts |
| Grid No. 3 Voltage | 0 | 0 | 0 | 0 | Volt |
| Grid No. 1 Voltage (Approximate) Ib. = 75 μa | | −145 | −155 | −165 | Volts |
| Grid No. 1 Voltage (Approximate) Ib = 1 Ma | −125 | | | | Volts |

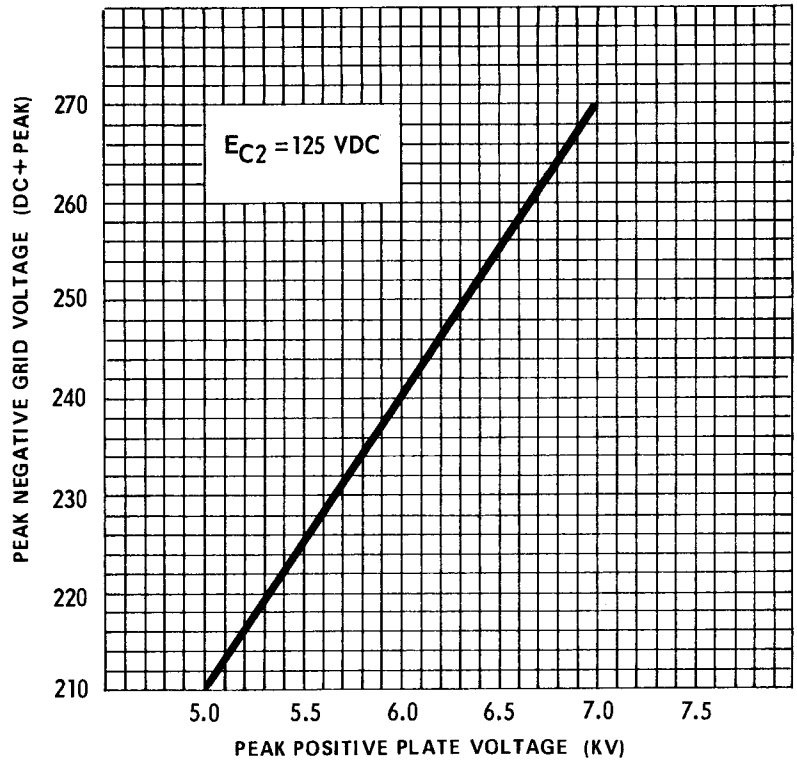
## MINIMUM RECOMMENDED GRID DRIVE

| | | | | |
|---|---|---|---|---|
| Peak Positive Plate Pulse Voltage | 5000 | 5500 | 6000 | Volts |
| Peak Negative Grid No. 1 Voltage | 210 | 225 | 240 | Volts |

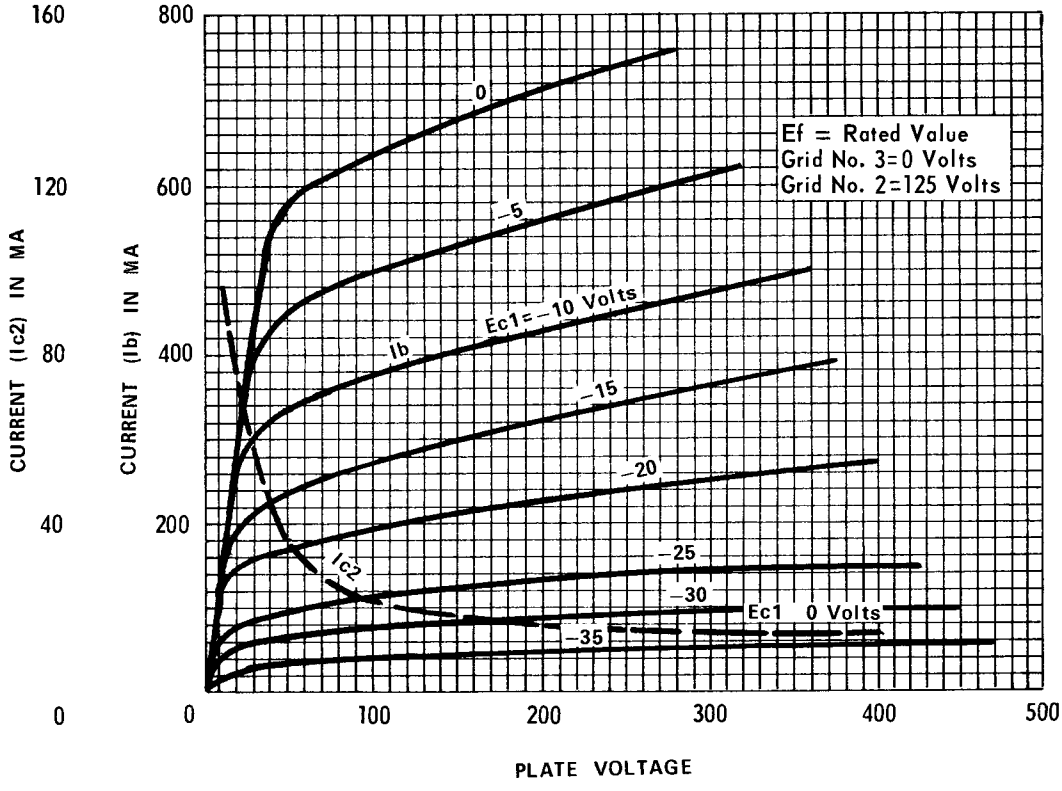
## SPECIAL TESTS AND RATINGS

| | | |
|---|---|---|
| Primary Beam – Plate Emission # | | |
| Initial Maximum | 100 | μa |
| After 100 Hrs. of Operation within Ratings (Maximum) | 100 | μa |

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




AVERAGE PLATE CHARACTERISTICS



# 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.

♦ In stages operating with 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 wave form such that the plate and screen dissipations will be kept within ratings in order to prevent damage to the tube.

§ Grid No. 3 (Beam Plate) returned to cathode. (At Socket)

⊕ Preferred Operation Dissipation Values: (Watts–Max.)

| Pp | Pg2 |
|---|---|
| 30 | 4.0 |
| 28 | 4.5 |
| 26 | 5.0 |
| 24 | 5.5 |

# Primary beam plate (Grid No. 3) emission is measured by operating the tube at a plate dissipation of 40 watts for not more than 5 minutes with the beam plate returned to ground through a current meter.