Twin Pentode

FOR COLOR DEMODULATOR APPLICATIONS

**PRODUCT INFORMATION**

- **COLOR TV TYPE**
- **HIGH LEVEL OUTPUT**
- **INTERNAL MATRIXING**
- **11000 MICROMHOS**

The 6LE8 is a miniature twin pentode having separate plates and number-3 grids for the two sections with a common screen, number-1 grid, and cathode. It is primarily designed for use as a color demodulator in color television receivers.

The high current of the 6LE8 provides enough voltage output to drive the grids of color picture tubes without further amplification. The common screen grid provides internal matrixing of the red and blue information to provide sufficient drive to the green gun.

The characteristics of the 6LE8 are such that it may be used in either of two modes; (1) chroma information to grid number 1 and two phases of reference signal to the two number-3 grids, or (2) reference signal to grid number 1 and two different phases of chroma information to the two number-3 grids.

### GENERAL

#### ELECTRICAL
- **Cathode** - Coated Unipotential
- **Heater Characteristics and Ratings**
  - **Heater Voltage, AC or DC** 6.3±0.6 Volts
  - **Heater Current** 0.75 Amperes
- **Direct Interelectrode Capacitances**
  - Grid-Number 1 to Plate: Each Section 2.9 pf
  - Grid-Number 1 to All: 15 pf
  - Grid-Number 3 to All: Each Section 6.5 pf
  - Plate (Each Section) to All: 4.2 pf
  - Grid-Number 3 (Section 1) to Grid-Number 3 (Section 2), maximum 0.12 pf

#### MECHANICAL
- **Operating Position** - Any
- **Envelope** - T-6 1/2, Glass
- **Base** - E9-1, Small Button 9-Pin
- **Outline Drawing** - EIA 6-4
  - Maximum Diameter: 0.875 Inches
  - Maximum Over-all Length: 3.063 Inches
  - Maximum Seated Height: 2.813 Inches

#### PHYSICAL DIMENSIONS
- 0.875 MAX.
- 0.750 MIN.
- 3.062 MAX.
- 2.534 MAX.
- 2.812 MAX.

#### TERMINAL CONNECTIONS
- Pin 1 - Plate (Section 2)
- Pin 2 - Grid Number 3 (Section 2)
- Pin 3 - Cathode
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - Plate (Section 1)
- Pin 7 - Grid Number 3 (Section 1)
- Pin 8 - Grid Number 2 (Screen)
- Pin 9 - Grid Number 1

#### BASING DIAGRAM

EIA 9QZ

**GENERAL ELECTRIC**

Supersedes Pages 1 and 2 of 6LE8 PI Sheet dated 5-66
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage, Each Section ............................................. 300 Volts
Screen Voltage .......................................................... 150 Volts
Plate Dissipation, Each Section ...................................... 2.0 Watts
Screen Dissipation ...................................................... 2.0 Watts
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 ............................................. 300 Volts

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, plates tied ............................................ 100 Volts
Screen Voltage ........................................................ 100 Volts
Grid-Number 1 Voltage ............................................... -2.5 Volts
Grid-Number 3 Voltage ................................................ 0 Volts
Transconductance ..................................................... 11000 Micromhos
Plate Current ......................................................... 17 Milliamperes
Screen Current ....................................................... 10.5 Milliamperes
Grid-Number 1 Voltage, approximate
  Ib = 100 Microamperes ............................................. -7 Volts
Plate Current, maximum
  Eb = 250 volts, Ec2 = 100 volts, Ec1 = -2.5 volts, Ec3 = -35 volts .. . 2.0 Milliamperes

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.
§ Without external shield.

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