

Rogers Electronic Tubes & Components

17BTP4

Description: Rectangular television picture tube with filter glass, metal-backed screen, ion trap, electrostatic focusing and 90° magnetic deflection

Heater data

Heater voltage 6.3 volts
Heater current 0.3 amp

Note: (applies to series operation only) The surge heater voltage must not exceed 9.5 volts rms when the supply is switched on. When used in a series chain a current limiting device may be necessary in the circuit to ensure that this voltage is not exceeded.

Direct interelectrode capacitances

Grid No.1 to all other electrodes 7 μF
Cathode to all other electrodes 4 μF
External conductive coating to grid No.4 and 6 max. 1400 μF
min. 900 μF

Screen

Phosphor number (JETEC designation) P4
Fluorescent color white
Persistence short
Light transmission 75 %
Useful diagonal min. 15 3/8 "
Useful width min. 14 1/4 "
Useful height min. 10 3/4 "

Focusing method

electrostatic

Deflection method

double magnetic

Deflection angle, diagonal 90°
Deflection angle, horizontal 85°
Deflection angle, vertical 65°

Mounting position

The socket for the base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The outer circumference of the base will fall within a circle which is concentric with the perpendicular from the centre of the face and which has a diameter of 2 3/16"

Ion trapmagnet

Single magnet, field strength approx. 50 Gauss.

Picture centering magnet

Field intensity perpendicular to the tube axis for centering of the picture: 0-10 gauss.

Maximum distance between centre of field of this magnet and reference line is 70 mm

Ratings (Design Center Values)

Grid No.4 and 6 voltage	18000 max. volts ^{x)} 12000 min. volts
Grid No.3 and 5 voltage	
positive	500 max. volts
negative	500 max. volts
Grid No.2 voltage	500 max. volts 200 min. volts
Grid No.1 voltage	
negative	150 max. volts
positive	0 max. volt
positive peak	2 max. volts
Heater to cathode voltage ^{†)}	
Heater positive with respect to cathode	125 max. volts
Heater negative with respect to cathode	200 max. volts.
Peak value during a warm-up period not exceeding 45 sec.; heater negative	410 max. volts

Maximum circuit values

Grid No.1 circuit resistance	1,5 max. megohms
Grid No.1 circuit impedance at 50 cps	0,5 max. megohms
Circuit resistance between cathode and heater	see ^{o)}

Circuit design values

Negative grid No.3 and 5 current	10 max. microamps
Positive grid No.3 and 5 current	10 max. microamps

^{x)} At zero current

^{†)} In order to avoid excessive hum, the A.C. component of the heater to cathode voltage should be as low as possible and must not exceed 20 volts, rms.

^{o)} When the heater is supplied from a separate transformer, the maximum value of the circuit resistance between cathode and heater = 1 megohm. When the heater is in a series chain or earthed the maximum circuit impedance at 50 cps = 0,1 MΩ

Typical operating conditions

Grids No.4 and 6 voltage	14000	16000	volts
Grids No.3 and 5 voltage at final accelerating electrodes current of 100 microamps	-103 to +203	-75 to +235	volts ^{xx)}
Grid No.2 voltage	300	300	volts
Grid No.1 voltage for visual extinction of undeflected focused spot	-40 to -80	-40 to -80	volts

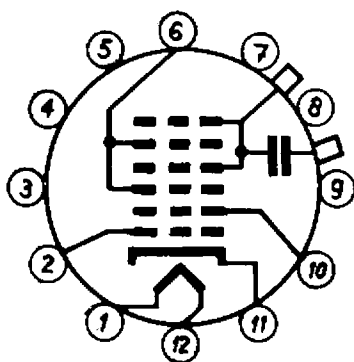
Mechanical data

Overall length	15 5/8"
Greatest dimensions of bulb	
diagonal	16 5/8" ± 1/8"
width	15 3/8" ± 1/8"
height	12 1/4" ± 1/8"
Neck length	6 1/2"
Bulb number (ASA designation)	J 133
Bulb contact (JETEC designation)	J1-21
Base (JETEC designation)	B7-51

^{xx)}At the specified value of grids No.3 and 5 voltage the focusing of the tube is optimum in the centre of the screen. If a uniform focusing over the entire screen is preferred this voltage has to be raised with 100 to 200 volts.

Notes from page 5 and 6

- 1) Reference line, determined by the plane of the upper edge of the flange of the reference gauge JETEC No. 116 when the gauge is resting on the cone.
- 2) Allowable contact area
- 3) Space for deflection coils and centering magnet
- 4) Space for the ion trap magnet
- 5) Distance from reference line to top centre of grid
- 6) Recessed cavity contact
- 7) Ion trap magnet
- 8) This area must be kept clean

BOTTOM VIEW OF BASE

12 AJ

BASE PIN
No.ELEMENT

1	heater
2	grid No.1
6	grid No.3 and 5
10	grid No.2
11	cathode
12	heater
bulb contact	grid no.4 and 6, collector

