



*Excellence in Electronics*

**TYPE**  
**5ABP1**  
**5ABP7**  
**5ABP11**

The 5ABP— is a 5" electrostatic focus and deflection cathode ray tube designed for oscilloscope applications. The 5ABP— has very high sensitivity and low capacitance of the vertical deflecting electrodes making the tube well suited for wide band amplifiers with their characteristics low signal output and low capacitance load requirement. The gun features a small spot size of high brilliance, as well as a cutoff voltage not effected by focusing changes.

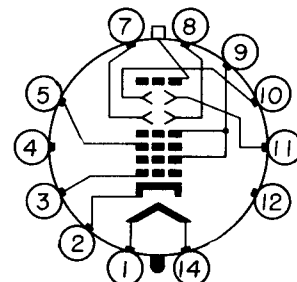
**MECHANICAL DATA**

BASE: Medium Shell Diheptal 12-pin No. B12-37

TERMINAL CONNECTIONS:

- |                                  |                                      |
|----------------------------------|--------------------------------------|
| Pin 1 Heater                     | Pin 8 Deflecting Electrode D4        |
| Pin 2 Cathode                    | Pin 9 Anode #1 (Grid #2 and #4)      |
| Pin 3 Grid #1                    | Pin 10 Deflecting Electrode D2       |
| Pin 4 No Connection (Do not use) | Pin 11 Deflecting Electrode D1       |
| Pin 5 Grid #3                    | Pin 12 No Connection                 |
| Pin 7 Deflecting Electrode D3    | Pin 14 Heater                        |
|                                  | Cap Anode #2 (Grid #5 and Collector) |

MOUNTING POSITION: Any



BOTTOM VIEW

**GENERAL DATA**

	<u>5ABP1</u>	<u>5ABP7</u>	<u>5ABP11</u>
Phosphor	Green	Blue	Blue
Fluorescence	-----	Yellow	-----
Phosphorescence	Medium	Long	Short
Persistence			
Focusing Method	Electrostatic		
Deflection Method	Electrostatic		

**ELECTRICAL DATA**

DIRECT INTERELECTRODE CAPACITANCES: ( $\mu\text{fds.}$ ) (approx.)

Grid #1 to all other electrodes	8
Cathode to all other electrodes	5
D1 to D2	2.5
D3 to D4	1.3
D1 to all other electrodes except D2	9
D2 to all other electrodes except D1	9
D3 to all other electrodes except D4	5.0
D4 to all other electrodes except D3	6

DESIGN CENTER MAXIMUM RATINGS

Heater Current	0.6 ± 10% amperes
Peak Heater - Cathode Voltage, Max. (Note 1)	
Heater Negative with respect to cathode	125 volts
Heater Positive with respect to cathode	125 volts
Anode #2 Voltage	6000 volts DC
Anode #1 Voltage	2600 volts DC
Grid #1 Voltage	
Negative - Bias Value	200 volts DC
Positive - Bias Value (Note 1)	0
Positive - Peak Value	2
Peak Voltage Between Anode #2 and Any Deflecting Electrode	500 volts DC

CHARACTERISTICS AND TYPICAL OPERATION:

Heater Voltage	6.3	6.3	6.3 volts
Anode #2 Voltage	2000	3000	4000 volts DC
Anode #1 Voltage (Note 2)	2000	1500	2000 volts DC
Grid #3 Voltage (Focusing Electrode)	400 to 690	400 to 515	400 to 690 volts DC
Grid #1 Voltage	-52 to -87	-33 to -65	-52 to -87 volts DC
Deflection Factors			
D1 - D2	43 to 58	40 to 54	53 to 72 volts DC/inch
D3 - D4	29 to 39	27 to 36	36 to 48 volts DC/inch
Spot Position (undeflected) (Note 4)			0.5 inch

Tentative Data

**RAYTHEON MANUFACTURING COMPANY**

RAYTHEON CATHODE RAY TUBE OPERATIONS



CATHODE RAY TUBE

ELECTRICAL DATA (Cont'd)

MAXIMUM CIRCUIT VALUES:

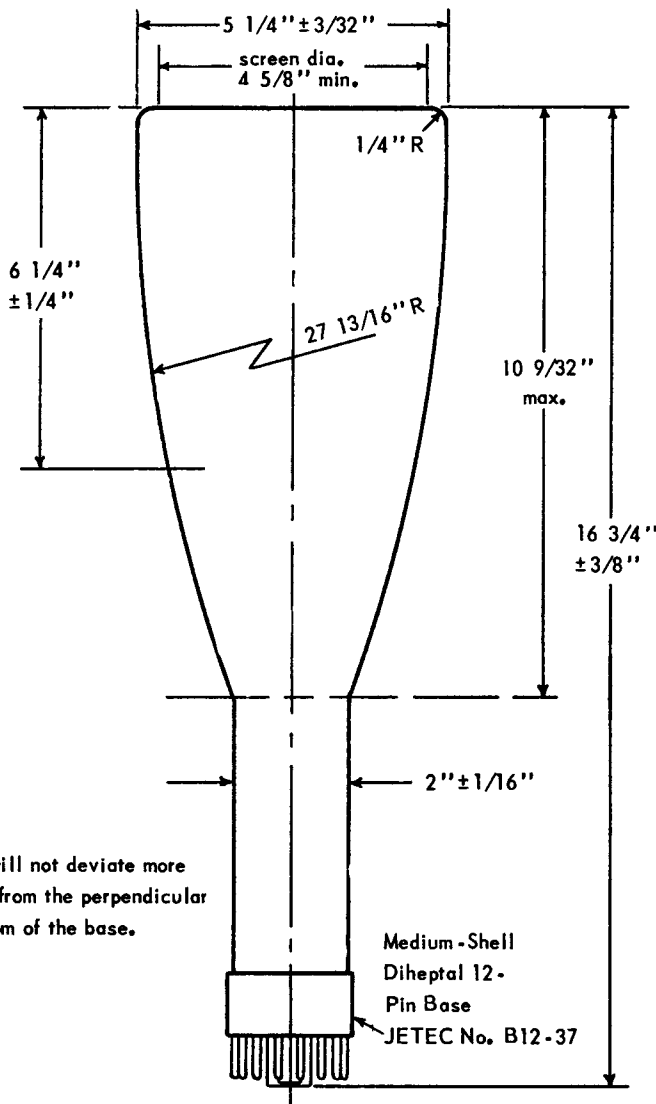
Grid #1 Circuit Resistance	1.5 meg.
Resistance in any deflecting electrode current (Note 3)	5.0 meg.

Note 1 At or near this rating, the effective resistance of the collector supply should be adequate to limit the collector input power to 6 watts.

Note 2 Visual extinction of undeflected focused spot.

Note 3 It is recommended that the deflecting - electrode - circuit resistances be approximately equal.

Note 4 With anode #2 at 4000 volts, anode #1 at 2000 volts, grid #3 adjusted for focus, grid #1 adjusted for barely perceptible spot, each deflecting electrode connected thru a 1 megohm resistor to collector, the center of the undeflected focused spot will fall within a circle of 1/2 inch radius concentric with the center of the tube face, with tube shielded.



The center line of bulb will not deviate more than  $2^\circ$  in any direction from the perpendicular erected at center of bottom of the base.