

# JOINT ELECTRON TUBE ENGINEERING COUNCIL



SUITE 1015  
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NEW YORK 36, N. Y.  
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E. I. A.  
REGISTRATION  
FILE

Announcement  
of  
Electron Device Type Registration

Release No. 1336

July 30, 1954

The Joint Electron Tube Engineering Council announces the registration of the following tube type designation

2P22

according to the ratings and characteristics found on the attached data sheet on the application of

Radio Corporation of America  
Harrison, New Jersey

RCA  
2P22  
IMAGE ORTHICON

Obsolete type--data are presented for JETEC Registration Records only

DATA

General:

Heater, for Unipotential Cathode:		
Voltage (AC or DC) . . . . .	6.3 ± 10%	volts
Current . . . . .	0.6	Ampere
Direct Interelectrode Capacitance:		
Anode to All Other Electrodes . . . . .	9.5	μmf
Photocathode, Semitransparent:		
Response . . . . .	See Accompanying Curve	
Useful Image Size (1 x 1 aspect ratio) . . . . .	1-1/32" Max. Diagonal	
Focusing Method . . . . .	Magnetic	
Deflection Method . . . . .	Magnetic	
Overall Length . . . . .	8-13/16" ± 1/4"	
Maximum Bulb Radius . . . . .	1-3/32"	
Base . . . . .	Small-Button Trihexal 18-Pin	
Mounting Position . . . . .	Any	
Focusing Coil Length . . . . .	6"	
Deflecting-Coil Length . . . . .	3-3/16"	
Alignment-Coil Length† . . . . .	29/32"	
Photocathode Distance Inside End of Focus Coil . . . . .	0.6"	
Deflection Coil Distance Inside End of Focus Coil . . . . .	3"	

Maximum Ratings, Absolute Values:

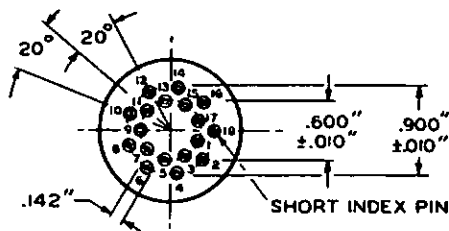
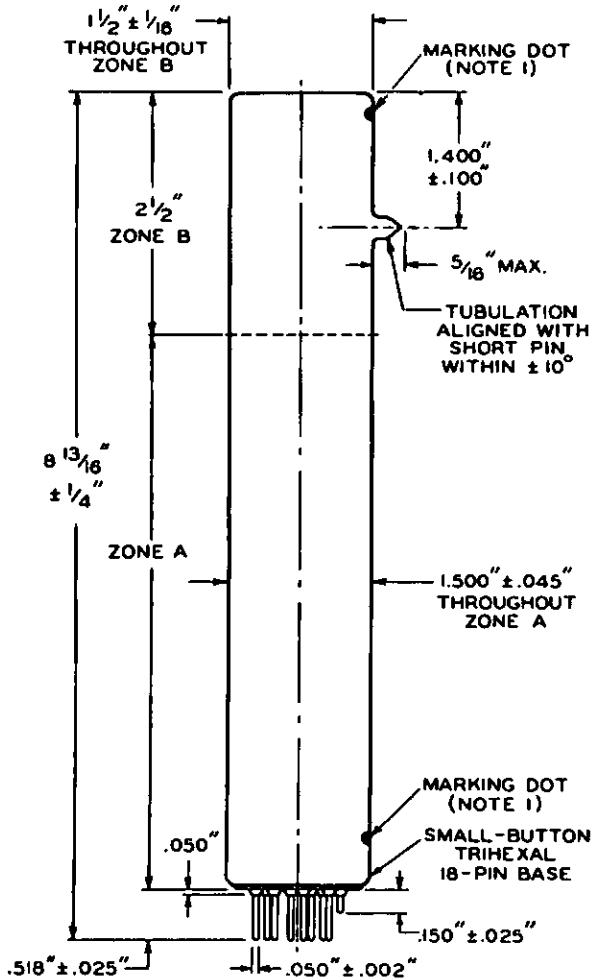
PHOTOCATHODE:		
Voltage . . . . .	-400 max.	volts
Illumination . . . . .	10 max.	ft-c
AMBIENT TEMPERATURE . . . . . 60 max. °C		
TARGET & GRID-NO.6 VOLTAGE:		
Positive Value . . . . .	50 max.	volts
Negative Value . . . . .	50 max.	volts
GRIDS No.4 & No.5 VOLTAGE . . . . .	200 max.	volts
GRIDS No.2 & No.3 & DYNODE-No.1 VOLTAGE . . . . .	300 max.	volts
GRID-No.1 VOLTAGE:		
Negative bias value . . . . .	50 max.	volts
Positive bias value . . . . .	0 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode . . . . .	125 max.	volts
Heater positive with respect to cathode . . . . .	10 max.	volts
ANODE-SUPPLY VOLTAGE* . . . . .	1650 max.	volts
VOLTAGE PER MULTIPLIER STAGE . . . . .	350 max.	volts

Typical Operation:

Photocathode Voltage (Image Focus)* . . . . .	-250	volts
Target & Grid No.6 Voltage <sup>o</sup> . . . . .	0	volts
Grids-No.5 (Decelerator) & No.4 (Beam Focus) Voltage* . . . . .	90	volts
Grids-No.3 & No.2 & Dynode-No.1 Voltage . . . . .	210	volts
Grid-No.1 Voltage for Picture Cutoff <sup>o</sup> . . . . .	-15	volts
Dynode-No.2 Voltage . . . . .	520	volts
Dynode-No.3 Voltage . . . . .	830	volts
Dynode-No.4 Voltage . . . . .	1140	volts
Dynode-No.5 Voltage . . . . .	1450	volts
Anode Voltage . . . . .	1500	volts
Anode Current (DC) . . . . .	15	μamp
Target Temperature Range . . . . .	35 to 45	°C
Ratio of Peak-to-Peak Highlight Video Signal to RMS Noise Current (Approx.) . . . . .	15	
Minimum Peak-to-Peak Blanking Voltage . . . . .	10	volts
Field Strength at Center of Focusing Coil . . . . .	75	gausses

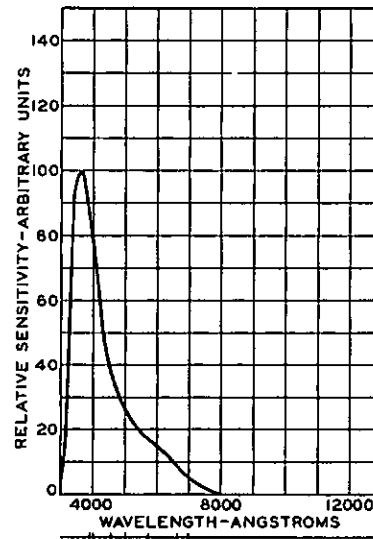
- † Coil is provided with two opposite sets of windings, and should permit adjustment from 0 to 45 ampere turns. Adjust current and rotation for brightest picture.
- Ratio of dynode voltages is shown under Typical Operation.
- \* Adjustable within +40% and -30% of this value.
- Adjustable within ±3 volts of indicated value, with blanking voltage off.
- # Adjustable within ±22.5% of indicated value.
- ⊕ Adjustable within ±67% of indicated value.

### DIMENSIONAL OUTLINE



**BOTTOM VIEW**

NOTE 1: MARKING DOTS ARE ALIGNED WITH SHORT PIN (N<sup>o</sup> 18) AND INDICATE PROPER DIRECTION OF INSERTION IN FOCUS COIL.

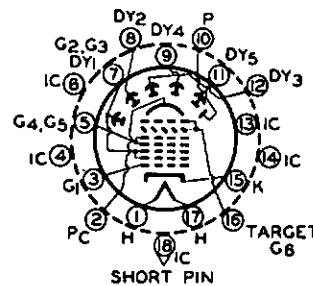


92CM-6877T

*Spectral Sensitivity Characteristic of Type 2P22 for Equal Values of Radiant Flux at all Wavelengths*

### SOCKET CONNECTIONS Bottom View

DIRECTION OF LIGHT:  
PERPENDICULAR TO  
FACE OF TUBE



- PIN 1: HEATER
- PIN 2: PHOTOCATHODE
- PIN 3: GRID NO. 1
- PIN 4: INTERNAL CONNECTION—DO NOT USE
- PIN 5: GRID NO. 4, GRID NO. 5
- PIN 6: INTERNAL CONNECTION—DO NOT USE
- PIN 7: GRID NO. 2, GRID NO. 3, DYNODE NO. 1
- PIN 8: DYNODE NO. 2
- PIN 9: DYNODE NO. 4
- PIN 10: ANODE
- PIN 11: DYNODE NO. 5
- PIN 12: DYNODE NO. 3
- PIN 13: INTERNAL CONNECTION—DO NOT USE
- PIN 14: INTERNAL CONNECTION—DO NOT USE
- PIN 15: CATHODE
- PIN 16: TARGET, GRID NO. 6
- PIN 17: HEATER
- PIN 18: INTERNAL CONNECTION—DO NOT USE