

## Bivicon

1-1/2 Inch Vidicon With Two Separate Guns and Targets

The C23244 Bivicon is a newly developed 1-1/2 inch vidicon containing two separate guns and targets within a single envelope. The tube has been designed to allow simultaneous scanning of two side-by-side (or over/under) images within a single deflection/focus structure. The inherently good geometric fidelity of such an arrangement makes this tube suitable for use requiring good registration capability. Possible uses include electro-optic comparators, two-raster color and, perhaps, stereo video.

The output signals are provided from two small metal contact buttons on the tube's faceplate. Field mesh contact is made through the faceplate flange. Other electrical connections are brought out through the tube base.

A typical raster format is 1/2" by 3/8" (12.8 mm x 9.6 mm) with a center-to-center spacing of 0.41" (10.4 mm). The two rasters are scanned in parallel so two simultaneous output signals are generated. The two output signals can be superimposed on each other with good registry.

Figure 1, a typical response curve, shows the relative peak-to-peak square-wave response at raster center, without aperture correction, for 500 nanoampere highlight signal current and 20 nanoampere dark current for each target.

The Bivicon is particularly well suited for generating color signals utilizing a two-frame system in which the luminance portion of the picture is projected onto one target and the chrominance information, in suitably encoded form, onto the other. Excellent color pictures have been produced from: (a) a laser-illuminated holographic film with electronic encoding, and (b) a color film and transparencies using optical encoding within the camera.

Many other applications of the Bivicon exist in cameras designed to produce two simultaneous optical images which can be played back on separate monitors or superimposed on a single monitor. The tube will also be useful in unattended operation where its double-beam feature provides a desirable degree of redundancy. In all applications, only a single focus-deflection component is required.

### General Data

Heater:	
Voltage .....	6.3 V
Current .....	0.6 A
Spectral Response .....	RCA PCII
Raster Geometry .....	See Figure 2
Focusing Method .....	Magnetic
Deflection Method .....	Magnetic
Dimensions .....	See Figure 3
Base .....	JEDEC B12-244
Socket .....	RCA 126893 Kine, lead assembly or equivalent
Focusing-Alignment Assembly .....	Cleveland Electronics® No. 15-VFA-259, or equivalent
Deflection Yoke .....	Cleveland Electronics® No. 15-VY-258, or equivalent

### Maximum Operation and Performance Data

For scanned areas (2) of 1/2" x 3/8" (12.8 mm x 9.6 mm).	
Grid-No.4 Voltage .....	1500 V
Grid-No.3 Voltage .....	1500 V
Grid-No.2 Voltage .....	550 V
Grid-No.1 Voltage:	
Negative bias .....	300 V
Positive bias .....	0 V

For further information or application assistance on this device, contact your RCA Sales Representative or write Camera Tube Marketing, RCA, Lancaster, PA 17604.

### Maximum Operation and Performance Data (Cont'd)

Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode	125 V
Heater positive with respect to cathode	10 V
Target Voltage	70 V
Dark Current (each target)	250 nA
Peak Target Current (each target)	750 nA
Faceplate:	
Uniform white illumination	1000 fc
Temperature	71 °C

### Typical Operation and Performance Data

For scanned areas (2) of 1/2" x 3/8" (12.8 mm x 9.6 mm) and faceplate temperature of 30 ± 2°C.

Grid-No.4 (Decelerator) Voltage	1400 V
Grid-No.3 (Beam-Focus) Voltage	800 to 1000 V
Grid-No.2 (Accelerator) Voltage	300 V
Grid-No.1 Voltage For Picture Cutoff	-45 to -100 V
Average "Gamma" of Transfer Characteristic for Signal Output Current Between 20 and 600 nA	0.65

### Recommended Peak-to-Peak Blanking Voltage:

When applied to grid-No.1	75 V
When applied to cathode	20 V

### Limiting Resolution:

At center of each raster	650 TV Lines
At corner of each raster	350 TV Lines

### Amplitude Response to 400 TV Line Square-Wave Test Pattern at Center of Each Raster

Field Strength at Center of Focus Coil (Approx.)	46 G
Field Strength of Adjustable Alignment Coil	0 to 4 G

### Peak Deflecting Coil Current for Specified Deflecting Yoke:

Horizontal	180 mA
Vertical	33 mA

### For Average-Sensitivity Operation

Faceplate Illumination (Highlight)	1.0 fc
Dark Current	20 nA
Target Voltage	20 to 40 V
Signal-Output Current (Typical)	200 nA

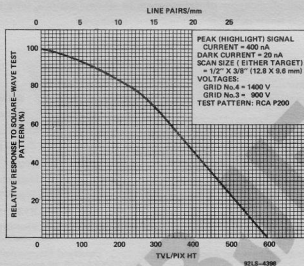


Figure 1 — Horizontal Square-Wave Response of Bivicon

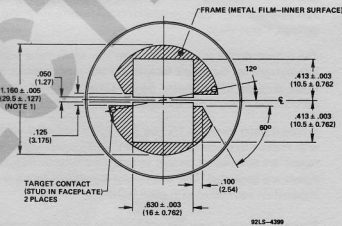
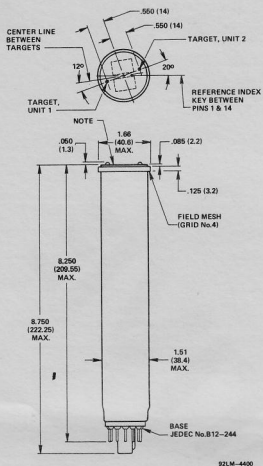
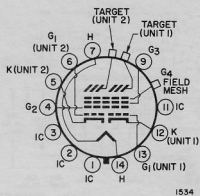


Figure 2 — Bivicon Raster Geometry



Note: Faceplate thickness  $0.100 \pm 0.006$

Figure 3 — Outline Drawing



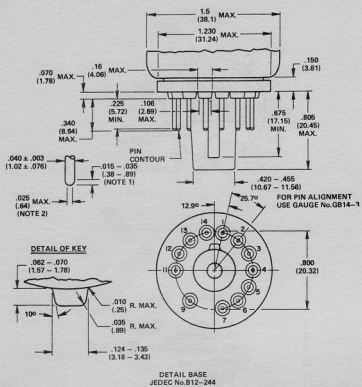
Pin No.	Element
1	I.C.
2	I.C.
3	I.C.
4	G2
5	K (Unit 2)
6	G1 (Unit 2)
7	H
8	Pin Omitted
9	G3 (Isolated Pin)
10	Pin Omitted
11	I.C.
12	K (No.1) (Unit 1)
13	G1 (No.1) (Unit 1)
14	H

Flange: G4

Faceplate Button on Pin 2 Radius: Target No.1

Faceplate Button on Pin 9 Radius: Target No.2

Figure 4 — Basing Schematic



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**Note 1** - This dimension may vary within the limits shown around the periphery of any individual pin. This surface of the pin shall be convex or conical in shape and shall not be brought to a sharp point.

**Note 2** - This surface shall be flat.

**Figure 5** - Base Dimensions