

## TUNG-SOL

## CATHODE RAY

THE 16SP4 AND 16SP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE GREY FILTER FACEPLATE USED ON THE 16SP4A. THEIR COMMON FEATURES INCLUDE:

|                                |                               |
|--------------------------------|-------------------------------|
| UNIPOTENTIAL CATHODE           | EXTERNAL CONDUCTIVE COATING   |
| ROUND GLASS CONSTRUCTION       | MAGNETIC FOCUS & DEFLECTION   |
| EXTERNAL SINGLE FIELD ION TRAP | 10 1/4" X 14 1/2" RASTER SIZE |

## ELECTRICAL DATA

|                                               |       |               |
|-----------------------------------------------|-------|---------------|
| FOCUSING METHOD                               |       | MAGNETIC      |
| DEFLECTING METHOD                             |       | MAGNETIC      |
| DEFLECTION ANGLE (APPROX.)                    | 70    | DEGREES       |
| DIRECT INTERELECTRODE CAPACITANCES (APPROX.): |       |               |
| MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  | 3 500 | $\mu\text{f}$ |
| MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  | 1 500 | $\mu\text{f}$ |

## OPTICAL DATA

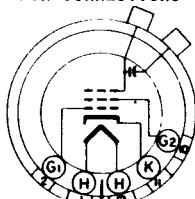
|                      |        |
|----------------------|--------|
| PHOSPHOR NUMBER      | NO. 4  |
| FLUORESCENT COLOR    | WHITE  |
| PHOSPHORESCENT COLOR | WHITE  |
| PERSISTENCE          | MEDIUM |

## MECHANICAL DATA

|                                                            |                            |        |
|------------------------------------------------------------|----------------------------|--------|
| OVERALL LENGTH                                             | 17 5/16 $\pm$ 3/8          | INCHES |
| GREATEST DIAMETER OF BULB                                  | 15 7/8 $\pm$ 1/8           | INCHES |
| MINIMUM USEFUL SCREEN DIAMETER                             | 14 1/2                     | INCHES |
| BULB CONTACT                                               | RECESSED SMALL CAVITY CAP  | J1-21  |
| BASE                                                       | SMALL SHELL DUODECAL 5 PIN | B5-57  |
| BASING                                                     |                            | 12N    |
| BULB CONTACT ALIGNMENT                                     |                            |        |
| J1-21 CONTACT ALIGNS WITH PIN POSITION #3 $\pm$ 10 DEGREES |                            |        |

## PIN CONNECTIONS

PIN 1 - HEATER  
 PIN 2 - GRID NO. 1  
 PIN 10 - GRID NO. 2



PIN 11 - CATHODE  
 PIN 12 - HEATER  
 ANODE CAP

BOTTOM VIEW

CONTINUED ON FOLLOWING PAGE

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**RATINGS**  
DESIGN CENTER VALUES

|                                                |        |       |
|------------------------------------------------|--------|-------|
| HEATER VOLTAGE                                 | 6.3    | VOLTS |
| HEATER CURRENT                                 | 0.6    | AMP.  |
| MAXIMUM DC ANODE VOLTAGE                       | 14 000 | VOLTS |
| MAXIMUM DC GRID #2 VOLTAGE                     | 410    | VOLTS |
| MAXIMUM GRID #1 VOLTAGE:                       |        |       |
| DC NEGATIVE-BIAS VALUE                         | 125    | VOLTS |
| DC POSITIVE-BIAS VALUE                         | 0      | VOLTS |
| POSITIVE-PEAK VALUE                            | 2      | VOLTS |
| MAXIMUM DC PEAK HEATER-CATHODE VOLTAGE:        |        |       |
| HEATER NEGATIVE WITH RESPECT TO CATHODE        |        |       |
| DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS | 410    | VOLTS |
| AFTER EQUIPMENT WARM-UP PERIOD                 | 125    | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE        | 125    | VOLTS |

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

|                                                 |            |       |
|-------------------------------------------------|------------|-------|
| DC ANODE VOLTAGE                                | 12 000     | VOLTS |
| DC GRID #2 VOLTAGE                              | 300        | VOLTS |
| DC GRID #1 VOLTAGE <sup>A</sup>                 | -33 to -77 | VOLTS |
| DC FOCUSING COIL CURRENT (APPROX.) <sup>B</sup> | 110        | MA.   |
| DC ION TRAP CURRENT (APPROX.)                   | 120        | MA.   |

<sup>A</sup> VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.<sup>B</sup> FOR STANDARD FOCUS WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 20 FOOT LAMBERTS ON A 10 1/4" X 14 1/2" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3.25 INCHES.**CIRCUIT VALUES**

|                                    |     |         |
|------------------------------------|-----|---------|
| MAXIMUM GRID #1 CIRCUIT RESISTANCE | 1.5 | MEGOHMS |
|------------------------------------|-----|---------|

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