CATHODE RAY

THE 19JP4 IS A DIRECT VIEW PICTURE TUBE DESIGNED FOR USE IN TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

- GREY FILTER FACEPLATE
- MAGNETIC FOCUS AND DEFLECTION
- RECTANGULAR GLASS CONSTRUCTION
- UNIPOTENTIAL CATHODE
- 12" X 16" RASTER SIZE
- EXTERNAL SINGLE FIELD ION TRAP

ELECTRICAL DATA

FOCUSBNG METHOD
DEFLECTING METHOD
DEFLECTION ANGLE (APPROX.)
HORIZONTAL
DIAGONAL
DIRECT INTERELECTRODE CAPACITANCES (APPROX.)
CATHODE TO ALL OTHER ELECTRODES
GRID #1 TO ALL OTHER ELECTRODES

MAGNETIC
MAGNETIC
66 DEGREES
70 DEGREES
5 µµf
6 µµf

OPTICAL DATA

PHOSPHOR NUMBER
FLUORESCENT COLOR
PHOSPHORESCENT COLOR
PERSISTENCE
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)

NO. 4
WHITE
WHITE
MEDIUM
66 PERCENT

MECHANICAL DATA

OVERALL LENGTH
GREATEST DIMENSIONS OF BULB
DIAGONAL
WIDTH
DIAGONAL
WIDTH
HEIGHT
BULB CONTACT
BASE
BASING
BULB CONTACT ALIGNMENT

20 13/16 ± 3/8 INCHES
18 5/8 ± 1/8 INCHES
17 1/16 ± 1/8 INCHES
17 21/32 INCHES
16 INCHES
12 INCHES
RECESSED SMALL CAVITY CAP
SMALL SHELL DUODECAL 5 PIN
120
J4-24
BS-57

PIN CONNECTIONS

PIN 1 - HEATER
PIN 2 - GRID NO. 1
PIN 10 - GRID NO. 2
PIN 11 - CATHODE
PIN 12 - HEATER ANODE CAP

CONTINUED ON FOLLOWING PAGE
RATINGS
DESIGN CENTER VALUES

<table>
<thead>
<tr>
<th>Rating</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>HEATER VOLTAGE</td>
<td>6.3 V</td>
</tr>
<tr>
<td>HEATER CURRENT</td>
<td>0.6 A</td>
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<tr>
<td>MAXIMUM DC ANODE VOLTAGE</td>
<td>18000 V</td>
</tr>
<tr>
<td>MAXIMUM DC GRID #2 VOLTAGE</td>
<td>410 V</td>
</tr>
<tr>
<td>MAXIMUM GRID #1 VOLTAGE</td>
<td></td>
</tr>
<tr>
<td>DC NEGATIVE-BIAS VALUE</td>
<td>125 V</td>
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<tr>
<td>DC POSITIVE-BIAS VALUE</td>
<td>0 V</td>
</tr>
<tr>
<td>POSITIVE-PeAK VALUE</td>
<td>2 V</td>
</tr>
<tr>
<td>MAXIMUM DC PEAK HEATER-CATHODE VOLTAGE</td>
<td></td>
</tr>
<tr>
<td>HEATER NEGATIVE WITH RESPECT TO CATHODE</td>
<td></td>
</tr>
<tr>
<td>DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS</td>
<td>410 V</td>
</tr>
<tr>
<td>AFTER EQUIPMENT WARM-UP PERIOD</td>
<td>150 V</td>
</tr>
<tr>
<td>HEATER POSITIVE WITH RESPECT TO CATHODE</td>
<td>150 V</td>
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</table>

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>DC ANODE VOLTAGE</td>
<td>12000 V</td>
</tr>
<tr>
<td>DC GRID #2 VOLTAGE</td>
<td>300 V</td>
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<tr>
<td>DC GRID #1 VOLTAGE^A</td>
<td>-33 to -77 V</td>
</tr>
<tr>
<td>DC FOCUSING COIL CURRENT^B (APPROX.)</td>
<td>95 ± 20% MA.</td>
</tr>
<tr>
<td>DC ION TRAP CURRENT STANDARD COIL #11</td>
<td>75 ± 50% MA.</td>
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</table>

^A VISUAL EXTINCTION OF UNDEFOCTED FOCUSED SPOT.

^B FOR STANDARD FOCUS COIL #309, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 30 FOOT LAMBERTS ON A 32" X 18" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP OR FOCUS COIL SHALL BE 3.0 INCHES.

CIRCUIT VALUES

<table>
<thead>
<tr>
<th>Circuit Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM GRID #1 CIRCUIT RESISTANCE</td>
<td>1.5 MΩ</td>
</tr>
</tbody>
</table>

PLATE #3470  NOVEMBER 1, 1953  TUNG-SOL ELECTRIC INC.  ELECTRON TUBE DIVISION  NEWARK, NEW JERSEY, U.S.A.