



TELEVISION PICTURE TUBE

DESCRIPTION

The 7JP4 is an electrostatic focus and deflection direct-view picture tube for television applications. It provides 4 by 5½-inch pictures. A feature of

this tube is the zero-first-anode-current electron gun. The 7JP4 is also suitable for use in oscillograph service.

TECHNICAL INFORMATION

GENERAL CHARACTERISTICS

Electrical

Heater voltage	6.3	volts
Heater current	0.6 ± 10%	amperes
Focusing method—Electrostatic		
Deflecting method—Electrostatic		
Phosphor—P4		
Fluorescence—White		
Persistence—Medium		
Direct interelectrode capacitances, nominal		
Cathode to all other electrodes	9.5	uuf
Grid No. 1 to all other electrodes	8.5	uuf
D1 to D2	3.5	uuf
D3 to D4	2.0	uuf
D1 to all other electrodes except D2	7.5	uuf
D2 to all other electrodes except D1	7.5	uuf
D3 to all other electrodes except D4	6.0	uuf
D4 to all other electrodes except D3	6.0	uuf


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Mechanical:

Over-all length	14 $\frac{1}{2}$ $\pm$ $\frac{3}{8}$ inches
Greatest diameter of bulb	7 $\pm$ $\frac{1}{8}$ inches
Minimum useful screen diameter	6 inches
Base	Medium shell diheptal 12-pin B12-37
Basing	14G
Base alignment	
D1-D2 Trace aligns with Pin No. 5 and tube axis	± 10 degrees
Positive voltage on D1 deflects beam approximately toward Pin No. 5	
Positive voltage on D3 deflects beam approximately toward Pin No. 2	

MAXIMUM RATINGS

Design center values:

Anode No. 2 voltage	6000 max	volts d-c
Anode No. 1 voltage	2800 max	volts d-c
Grid No. 1 voltage		
Negative-bias value	200 max	volts d-c
Positive-bias value*	0 max	volts d-c
Positive-peak value	2 max	volts

Peak heater-cathode voltage**

Heater negative with respect to cathode

During equipment warm-up period not to exceed 15 seconds	410 max	volts d-c
After equipment warm-up period	125 max	volts d-c

Heater positive with respect to cathode	125 max	volts d-c
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Peak voltage between anode No. 2 and any deflecting electrode	750 max	volts
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*With 0 volts on grid No. 1 and 4000 to 6000 volts on anode No. 2 the effective resistance of the anode No. 2 supply must be adequate to limit the anode No. 2 input power to 6 watts.

**Cathode should be returned to one side or to the midtap of heater-transformer winding.

RECOMMENDED OPERATING CONDITIONS

Anode No. 2 voltage	3000	6000 volts
Anode No. 1 voltage (for focus)#	810 to 1200	1620 to 2400 volts
Grid No. 1 voltage##	-36 to -84	-72 to -168 volts
Deflection factors		
D1 and D2 δ	31 to 41	volts d-c per inch per kilovolt of Eb ₂
D3 and D4	25 to 34	volts d-c per inch per kilovolt of Eb ₂
For anode No. 2 voltage between 3000 and 6000 volts		
Anode No. 1 voltage	27% to 40% of Eb ₂	volts
Grid No. 1 voltage##	1.2% to 2.8% of Eb ₂	volts
Anode No. 1 current for any operating condition	-15 to +10	microamperes

#With the combined grid No. 1 bias voltage and video-signal voltage adjusted for a highlight brightness of 12 foot-lamberts on a 4 by 5 $\frac{1}{2}$ -inch picture area.

##For visual extinction of undeflected focused spot.

δ To obtain maximum deflection sensitivity, deflecting electrodes D1 and D2 are designed to produce less than full screen deflection. It is therefore recommended that for television service these electrodes be used for vertical deflection.

MAXIMUM CIRCUIT VALUES

Grid No. 1 circuit resistance	1.5 max	megohms
Resistance in any deflecting-electrode circuit***	5.0 max	megohms

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

OUTLINE 7JP4

