

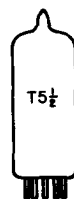
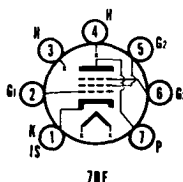
Color Television Type

GATED BEAM DISCRIMINATOR**6BN6/6KS6**

3BN6, 4BN6, 12BN6

Pentode

Construction Miniature T-5½
 Base Button 7 Pin, E7-1
 Basing 7DF
 Outline 5-3
 Maximum Diameter 0.750 In.
 Maximum Seated Height 2.375 In.
 Maximum Overall Height 2.625 In.

**ELECTRICAL DATA****HEATER OPERATION**

	3BN6	4BN6	12BN6	6BN6/6KS6
Heater Voltage.....	3.16	4.2	12.6	6.3 Volts
Heater Current	600	450	150	300 Ma
Heater Warm-up Time	11	11	—	— Seconds
Maximum Heater-Cathode Voltage				
Heater Negative with Respect to Cathode				
Total DC and Peak.....				200 Volts
Heater Positive with Respect to Cathode				
DC				100 Volts
Total DC and Peak.....				200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Grid No. 1 to All Other Electrodes.....	4.2 Pf
Grid No. 3 to All Other Electrodes.....	3.3 Pf
Grid No. 1 to Grid No. 3 (Max.).....	0.004 Pf

RATINGS (Design Center Rating System)

Plate Supply Voltage (Max.)	300 Volts
Grid No. 2 Voltage (Accelerator) (Max.)	100 Volts
Peak Positive Grid No. 1 Voltage (Limiter) (Max.).....	55 Volts
Total Cathode Current (Max.).....	11.5 Ma

CHARACTERISTICS AND TYPICAL OPERATION**Limiter-Discriminator Service**

Plate Supply Voltage.....	85	285	270 Volts
Plate Voltage	63	122	121 Volts
Grid No. 2 Voltage	55	100	100 Volts
Cathode Bias Resistor (Variable) ⁽¹⁾	200-400	200-400	200-400 Ohms
Plate Current	0.25	0.49	0.44 Ma
Grid No. 2 Current	4.1	9.8	10.0 Ma
Plate Load Resistor	85,000	330,000	330,000 Ohms
Plate Linearity Resistor.....	470	1500	1000 Ohms
Integrating Capacitor	0.002	0.001	0.001 µf
Coupling Capacitor	0.25	0.01	0.25 µf
Input Signal Center Frequency	10.7	10.7	4.5 Megahertz
Frequency Deviation	± 75	± 75	± 25 Kiloherztz
Minimum Signal Voltage for Limiting Action			
(RMS) ⁽²⁾	1.25	1.25	1.25 Volts
Input Signal Level for AM Rejection			
Adjustment ⁽¹⁾	1.25	2.0	2.0 Volts
AM Rejection at Esig = 2.0 Volts (RMS)	31	20	25 Decibels
AM Rejection at Esig = 3.0 Volts (RMS)	30	29	30 Decibels
Total Harmonic Distortion	2.0	1.6	1.8 Percent
Peak Audio Output Voltage	6.0	16.6	16.8 Volts

NOTES:

- The cathode resistor should be adjusted for maximum AM rejection in the output of the limiter-discriminator stage at the specified signal level. AM rejection is measured with an applied signal containing 30% AM and 30% FM.
- At signal levels above specified value, limiting is within ± 2 decibels. Adequate shielding between components of the limiter grid and the quadrature grid must be used to insure proper phasing of the voltage developed at the quadrature grid. Standard de-emphasis requirements for FM are included. The Q of the quadrature grid circuit should be high enough to develop a minimum of 4 volts (RMS) signal with 2 volts (RMS) of the center-frequency signal applied to the limiter grid. It is recommended that the coil be shunted by a minimum of 10 Pf. The capacitance may be composed of tube input capacitance, stray capacitance, and distributed capacitance, as well as physical capacitance.