

	2BN4A	3BN4A	6BN4A	
Heater Voltage (ac/dc)	2.35	3	6.3	volts
Heater Current	0.6	0.45	0.2	ampere
Heater Warm-up Time (Average)	11	11	—	seconds
Peak Heater-Cathode Voltage	±100 max	±100 max	±100 max	volts
Direct Interelectrode Capacitances (Approx.):*				
Grid to Plate			1.2	pF
Grid to Cathode and Heater			3.2	pF
Plate to Cathode and Heater			1.4	pF

* With external shield connected to cathode.

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	275	volts
Grid Voltage, Positive-bias value	0	volts
Cathode Current	22	mA
Plate Dissipation	2.2	watts

CHARACTERISTICS

Plate-Supply Voltage	150	volts
Cathode-Bias Resistor	220	ohms
Amplification Factor	43	
Plate Resistance (Approx.)	5400	ohms
Transconductance	7700	μmhos
Plate Current	9	mA
Grid Voltage (Approx.) for plate current of 100 μA	—6	volts

MAXIMUM CIRCUIT VALUE

Grid-Circuit Resistance	0.5	megohm
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6BN6

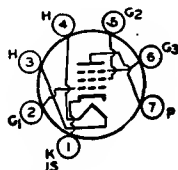
Refer to chart at end of section.

6BN6/6KS6

3BN6, 4BN6

BEAM TUBE

Miniature type used as combined limiter, discriminator, and audio-voltage amplifier in intercarrier television and FM receivers. Outlines section, 5D; requires miniature 7-contact socket. Types 3BN6 and 4BN6 are identical with type 6BN6/6KS6 except for heater ratings.



7DF

	3BN6	4BN6	6BN6/6KS6	12BN6	
Heater Voltage (ac/dc)	3.15	4.2	6.3	12.6	volts
Heater Current	0.6	0.45	0.3	0.15	ampere
Heater Warm-up Time (Average)	11	11	—	—	seconds
Peak Heater-Cathode Voltage:	±200 max	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	100 max	volts
Direct Interelectrode Capacitances:					
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield				4.2	pF
Grid No.3 to Cathode, Heater, Grid No.1, Grid No.2, and Internal Shield				3.3	pF
Cathode to Grid No.1				0.004 max	pF

Limiter and Discriminator Service

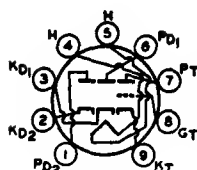
MAXIMUM RATINGS (Design-Maximum Values)

Plate-Supply Voltage	330	volts
Cathode Current	110	volts
Grid-No.1 Voltage, Positive peak value	60	volts
Cathode Current	13	mA

TWIN DIODE— HIGH-MU TWIN TRIODE

6BN8

8BN8



9ER

Miniature type used in color and black-and-white television receiver applications. The triode unit is used in burst-amplifier, afc amplifier, and low-frequency oscillator applications. The diode units are used in phase-detector, ratio-detector or discriminator, and horizontal afc discriminator circuits. Outlines section, 6E; requires miniature 9-contact socket. Type 8BN8 is identical with type 6BN8 except for heater ratings.

Heater Voltage (ac/dc)	6.3	8.4	volts
Heater Current	0.6	0.45	ampere
Heater Warm-up Time (Average)	11	11	seconds
Heater-Cathode Voltage:			
Peak value	±200 max	±200 max	volts
Average value	100 max	100 max	volts
Direct Interelectrode Capacitances:			
Triode Grid to Triode Plate		2.5	pF
Triode Grid to Cathode and Heater		3.6	pF
Triode Plate to Cathode and Heater		0.25	pF
Plate of Diode Unit No.1 to Triode Grid		0.06 max	pF
Plate of Diode Unit No.2 to Triode Grid		0.1 max	pF
Plate of Diode Unit No.1 to Plate of Diode Unit No.2		0.07 max	pF
Diode Cathode to All Other Electrodes (Each Diode Unit)		5	pF
Diode Plate to Diode Cathode and Heater (Each Diode Unit)		1.9	pF
Diode Cathode to Diode Plate and Heater (Each Diode Unit)		4.8	pF
Diode Plate to All Other Electrodes (Each Diode Unit)		3	pF

Triode Unit as Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	330	volts
Grid Voltage, Positive-bias value	0	volts
Plate Dissipation	1.7	watts

CHARACTERISTICS

Plate Voltage	100	250	volts
Grid Voltage	-1	-3	volts
Amplification Factor	75	70	
Plate Resistance (Approx.)	21000	28000	ohms
Transconductance	3500	2500	μmhos
Plate Current	1.5	1.6	mA
Grid Voltage (Approx.) for plate current of 10 μA	-2.5	-5.5	volts

MAXIMUM CIRCUIT VALUE

Grid-Circuit Resistance	1	megohm
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Diode Units

MAXIMUM RATINGS (Design-Maximum Values)

Plate Current (Each Unit):		
Peak	54	mA
Average	9	mA

