

Direct Interelectrode Capacitances:

	Unshielded	Shielded*	
Grid to Plate (Each Unit)	1.9	1.9	pF
Plate to Cathode (Each Unit)	0.18	0.17	pF
Heater to Cathode (Each Unit)	3	3a	pF
Plate of Unit No.2 to Plate of Unit No.1	0.04 max	0.015 max	pF
Plate of Unit No.2 to Grid of Unit No.1	0.003 max	0.003 max	pF
Grid of Unit No.1 to Cathode of Unit No.2	0.002 max	0.002 max	pF

* With external shield connected to cathode of unit under test except as noted.

Δ With external shield connected to ground.

Class A₁ Amplifier (Each Unit)

CHARACTERISTICS

Plate Voltage	90	90	90	volts
Grid Voltage	—1.2	—5	—9	volts
Plate Resistance (Approx.)	2500	—	—	ohms
Transconductance	12500	625	125	μmhos
Plate Current	15	—	—	mA

Cascode-Type Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Supply Voltage with plate current of 0 mA	550	volts
Plate Voltage (Each unit)	130	volts
Grid Voltage, Negative-bias value (Each unit)	50	volts
Cathode Current (Each unit)	22	mA
Plate Dissipation (Each unit)	1.8	watts
Heater-Cathode Voltage:		
Unit No.1:°		
RMS voltage between cathode and heater	50	volts
Unit No.2:°		
RMS voltage between cathode and heater*	50	volts
DC voltage between cathode and heater*	130	volts

TYPICAL OPERATION in a cascode-type circuit†

Supply Voltage	180	volts
Plate Current	15	mA
Transconductance	12500	μmhos
Noise Figure*	6.5	dB
Grid Voltage (Approx.) for transconductance of 125 μmhos	—9	volts
Input Voltage for cross-modulation factor of 0.01 and transconductance of 125 μmhos	500	mV

MAXIMUM CIRCUIT VALUES

Grid-Circuit Resistance (Each unit)	1	megohm
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° Grounded-cathode input unit—pins 6, 7, and 8.

■ Grounded-grid output unit—pins 1, 2, and 3.

• Cathode positive with respect to heater.

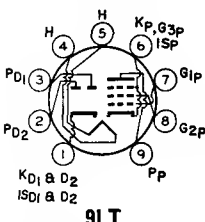
■ With grid of output unit connected to a voltage divider.

* Measured with tube operating in a television tuner.

TWIN DIODE—
SHARP-CUTOFF PENTODE

6ET7
8ET7

Miniature type used in television receiver applications. The pentode unit is used as a video amplifier and the diodes are used as a horizontal phase inverter. Outlines section, 6E; requires miniature 9-contact socket. Type 8ET7 is identical with type 6ET7 except for heater ratings.



Heater Voltage (ac/dc)	6ET7 6.3	8ET7 8	volts
Heater Current	0.75	0.6	ampere
Heater Warm-up Time (Average)	—	11	seconds
Heater-Cathode Voltage:			
Peak value	±200 max	±200 max	volts
Average value	100 max	100 max	volts

Pentode Unit as Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	330	volts
Grid-No.2 Voltage		

See curve page 98

Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	volts
Plate Dissipation	5	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts	1.1	watts
For grid-No.2 voltages between 165 and 330 volts	See curve page 98	

CHARACTERISTICS

Plate Supply Voltage	60	200	volts
Grid-No.2 Supply Voltage	150	150	volts
Grid-No.1 Voltage	0	—	volts
Cathode-Bias Resistor	—	100	ohms
Plate Resistance (Approx.)	—	60000	ohms
Transconductance	—	11500	μ mhos
Plate Current	55 ^{mA}	25	mA
Grid-No.2 Current	18 ^{mA}	5.5	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μ A	—	-10	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1	megohm
For cathode-bias operation	0.25	megohm

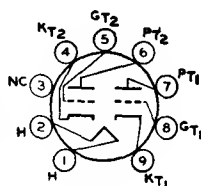
■ This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.

Diode Units (Each Unit)**MAXIMUM RATINGS (Design-Maximum Values)**

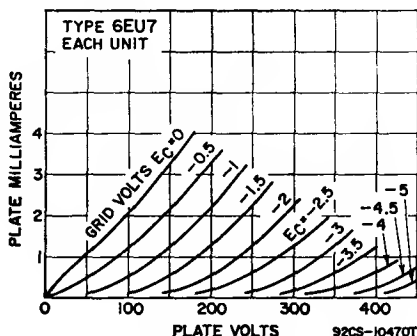
Average Plate Current	3	mA
CHARACTERISTICS, Instantaneous Value		
Tube Voltage Drop for plate current of 1.5 mA	10	volts

6EU7**HIGH-MU TWIN TRIODE**

Miniature type used in high-gain, resistance-coupled, low-level audio-amplifier applications where low-hum and non-microphonic characteristics are important, such as microphone amplifiers and pre-amplifiers for phonographs. Outlines section, 6B; requires miniature 9-contact socket. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section.

**9LS**

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.3	ampere
Heater-Cathode Voltage:		
Peak value	± 200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances (Each Unit, Approx.):		
Grid to Plate	1.5	pF
Grid to Cathode and Heater	1.6	pF
Plate to Cathode and Heater	0.2	pF



92CS-10470T