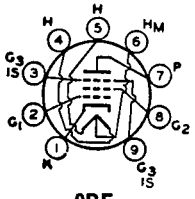
For replacement use type 12BS3A/12DW4A.	**12BS3A**
Refer to type 6BS3A.	**12BS3A/12DW4A**
Refer to chart at end of section.	**12BT3**
Refer to chart at end of section. For replacement use type 12BY7A/12BV7/12DQ7.	**12BV7**
Refer to type 6BV11.	**12BV11**
Refer to chart at end of section.	**12BW4**
Refer to chart at end of section. For replacement use type 12BY7A/12BV7/12DQ7.	**12BY7**
For replacement use type 12BY7A/12BV7/12DQ7.	**12BY7A**



9BF

SHARP-CUTOFF PENTODE

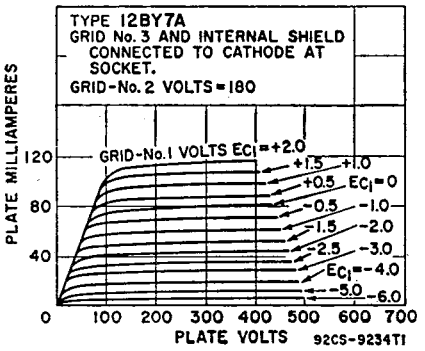
12BY7A/ 12BV7/ 12DQ7

Miniature types used as video amplifier in television receivers. **Outlines section,** 6E; require miniature 9-contact socket.

	Series	Parallel	
Heater Arrangement:			
Heater Voltage (ac/dc)	12.6	6.3	volts
Heater Current	0.3	0.6	ampere
Heater Warm-up Time (Average)	—	11	seconds
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts
Direct Interelectrode Capacitances:			
Grid No.1 to Plate		0.063	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		10.2	pF
Plate to Cathode, Heater, Grid No.2, and Internal Shield		3.5	pF

Class A_1 Amplifier

MAXIMUM RATINGS (Design-Maximum Values)		
Plate Supply Voltage	330	volts
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0	volts
Grid-No.2 (Screen-Grid) Voltage	190	volts
Grid-No.1 (Control-Grid) Voltage		
Negative-bias value	55	volts
Positive-bias value	0	volts
Plate Dissipation	6.5	watts
Grid-No.2 Input	1.2	watts



CHARACTERISTICS

Plate Supply Voltage	250	volts
Grid No.3	Connected to cathode at socket	
Grid-No.2 Supply Voltage	180	volts
Cathode-Bias Resistor	100	ohms
Plate Resistance (Approx.)	93000	ohms
Transconductance	11000	μmhos
Plate Current	26	mA
Grid-No.2 Current	5.75	mA
Grid-No.1 Voltage (Approx.) for plate current of 20 μA	—11.6	volts

MAXIMUM CIRCUIT VALUES

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

12BZ6 Refer to type 6BZ6.

12BZ7 Refer to chart at end of section.

12C5 Refer to type 6CU5.

12C8 Refer to chart at end of section.

12CA5 Refer to type 6CA5.

12CK3 Refer to chart at end of section.

12CL3 Refer to type 6CL3.

12CN5 Refer to chart at end of section.

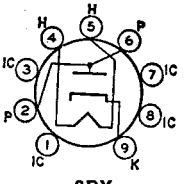
12CR6 Refer to chart at end of section.

12CS6 Refer to type 6CS6.

12CT3

17CT3, 25CT3

HALF-WAVE VACUUM RECTIFIER



9RX

Miniature type used as damper tube in horizontal-deflection circuits of black-and-white and small-screen color television receivers. **Outlines section,** 6H; requires miniature 9-contact socket. Socket terminals 1, 3, 7, and 8 should not be used as tie points for external-circuit components. This tube, like other power-handling tubes, should be adequately ventilated. Types 17CT3 and 25CT3 are identical with type 12CT3 except for heater ratings.

	12CT3	17CT3	25CT3	
Heater Voltage (ac/dc)	6.3	16.8	25.3	volts
Heater Current	0.6	0.45	0.3	amperes
Heater Warm-up Time (Average)	11	11	11	seconds
Direct Interelectrode Capacitances (Approx.):				
Plate to Cathode and Heater			12	pF
Cathode to Plate and Heater			9.5	pF
Heater to Cathode			2.8	pF

Damper Service

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#		5000	volts
Peak Plate Current		1200	mA
Average Plate Current		250	mA
Plate Dissipation		4.75	watts
Heater-Cathode Voltage:			
Peak value	+300	—5000	volts
Average value	+100	—900	volts
Bulb Temperature (At hottest point)		220	°C

CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 350 mA	16	volts

Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

Refer to chart at end of section.	**12CT8**
Refer to type 6CU5.	**12CU5/12C5**
For replacement use type 12BQ6GTB/12CU6.	**12CU6**
Refer to chart at end of section.	**12CX6**
Refer to chart at end of section.	**12D4**
Refer to chart at end of section.	**12DB5**
Refer to chart at end of section.	**12DE8**
Refer to type 6DK6.	**12DK6**
Refer to chart at end of section.	**12DK7**
Refer to chart at end of section.	**12DL8**
Refer to chart at end of section.	**12DM4** **12DM4A**
Refer to chart at end of section.	**12DQ6A**
Refer to chart at end of section. For replacement use type 12GW6/12DQ6B.	**12DQ6B**
Refer to chart at end of section. For replacement use type 12BY7A/12BV7/12DQ7.	**12DQ7**
Refer to chart at end of section.	**12DS7** **12DS7A**
Refer to type 6DT5.	**12DT5**
Refer to type 6DT8.	**12DT8**
Refer to chart at end of section.	**12DU7**
Refer to chart at end of section.	**12DV8**
Refer to chart at end of section. For replacement use type 12BS3A/12DW4A.	**12DW4A**
Refer to chart at end of section.	**12DW7**
Refer to chart at end of section.	**12DY8**
Refer to chart at end of section. For replacement use type 12EK6/12DZ6/12EA6.	**12DZ6**
Refer to chart at end of section. For replacement use type 12EK6/12DZ6/12EA6.	**12EA6**
Refer to chart at end of section.	**12EC8**
Refer to chart at end of section.	**12ED5**
Refer to chart at end of section.	**12EG6**
Refer to chart at end of section.	**12EH5**
Refer to chart at end of section.	**12EK6/12DZ6/12EA6**
Refer to chart at end of section.	**12EL6**
Refer to chart at end of section.	**12EM6**
Refer to chart at end of section.	**12EN6**
Refer to chart at end of section.	**12EQ7**
Refer to chart at end of section.	**12F5GT**
Refer to chart at end of section.	**12F8**