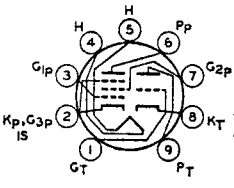
Refer to type 6MF8. **15MF8**

Refer to chart at end of section.
For replacement use type 16A8/PCL82. **16A8**

16A8/ PCL82

HIGH-MU TRIODE— POWER PENTODE

8B8



9EX

Miniature type used in television receiver applications. The triode unit is used as a vertical oscillator or as an af amplifier, and the pentode unit is used as a vertical output tube or as an audio output tube. **Outlines section,** 6G; requires miniature 9-contact socket. Type 8B8 is identical with type 16A8/PCL82 except for heater ratings.

	8B8	16A8/PCL82	
Heater Voltage	8	16	volts
Heater Current	0.6	0.3	ampere
Heater-Cathode Voltage	±200	±200	volts

Class A_1 Amplifier

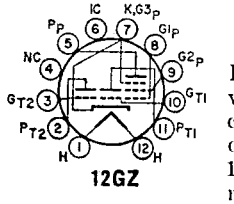
MAXIMUM RATINGS (Design-Maximum Values)	Triode Unit	Pentode Unit	
Plate Supply Voltage	550	550	volts
Peak Plate Voltage•	600	2500	volts
Plate Voltage	250	250	volts
Peak Inverse Plate Voltage	—	500	volts
Grid-No.2 (Screen-Grid) Supply Voltage	—	550	volts
Grid-No.2 Voltage	—	250	volts
Cathode Current	15	50	mA
Plate Dissipation (Frame Output)	—	5	watts
Plate Dissipation (Audio Output)	—	7	watts
Grid-No.2 Input	—	1.8	watts
Peak Grid-No.2 Input	—	3.2	watts

CHARACTERISTICS	Triode Unit	Pentode Unit				
Plate Voltage	100	100	170	200	200	volts
Grid-No.2 Voltage	—	100	170	200	200	volts
Grid-No.1 Voltage	0	—6	—11.5	—12.5	—16	volts
Amplification Factor	70	—	—	—	—	
Mu Factor, Grid No.2 to Grid No.1	—	10	9.5	9.5	9.5	
Plate Resistance	—	15000	16000	20500	20000	ohms
Transconductance	2500	6800	7500	6800	6400	μmhos
Plate Current	3.5	26	41	35	7	mA
Grid-No.2 Current	—	5	8	6.5	35	mA
MAXIMUM CIRCUIT VALUES						
Grid-No.1-Circuit Resistance:						
For fixed-bias operation	1			1		megohm
For cathode-bias operation	3			2		megohms

• With a maximum duty factor of 0.04 and maximum pulse duration of 0.8 milliseconds.

16AK9

DUAL TRIODE— BEAM POWER TUBE



12GZ

Duodecar type used in vertical-deflection-amplifier, vertical oscillator and sync-clipper applications, in color television receivers. **Outlines section,** 15A; requires duodecar 12-contact socket. **Heater:** volts (ac/dc), 16.4; amperes, 0.6; average warm-up time, 11 seconds; maximum heater-cathode volts, ±200 peak, 100 average.

Class A_1 Amplifier

CHARACTERISTICS	Triode Unit No. 1	Triode Unit No.2	Beam Power Unit		
Plate Voltage	150	150	60	150	volts
Grid-No.2 (Screen-Grid) Voltage	—	—	125	150	volts
Grid-No.1 (Control-Grid) Voltage	—2	—5	0	—14	volts
Plate Resistance (Approx.)	11000	8500	—	16400	ohms
Transconductance	3900	2350	—	6200	μmhos
Plate Current	5.4	5.5	140	49	mA
Grid-No.2 Current	—	—	18	3.5	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μA	—5.7	—11	—	—33	volts
Amplification Factor	43	20	—	—	

Vertical-Deflection Oscillator and Amplifier

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

MAXIMUM RATINGS (Design-Maximum Values)	Triode Unit No. 1 Amplifier	Triode Unit No. 2 Oscillator	Beam Power Unit Amplifier	
Plate Voltage	330	330	350	volts
Peak Positive-Pulse Plate Voltage#	—	—	2500	volts
Grid-No.2 Voltage	—	—	250	volts
Peak Negative-Pulse Grid-No.1 Voltage	—	400	150	volts
Grid Voltage, Positive-bias value	0	—	—	volt
Plate Dissipation	1.25	1	10	watts
Grid-No.2 Input	—	—	2	watts
Peak Plate Current	—	70	245	mA
Average Plate Current	—	20	80	mA
Peak Grid-No.2 Current	—	—	245	mA
Average Grid-No.2 Current	—	—	80	mA
MAXIMUM CIRCUIT VALUES				
Grid-No.1 Circuit Resistance:				
For fixed-bias operation	0.5	1	1	megohm
For degenerative-bias operation*	—	2.2	2.2	megohms

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

* A cathode resistor or any feedback system which achieves an equivalent reduction in gain.

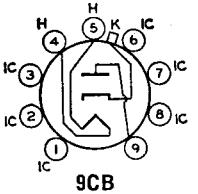
16AQ3

Refer to chart at end of section.
For replacement use type 16AQ3/XY88.

16AQ3/ XY88

20AQ3/LY88

DIODE



9CB

Miniature type used as booster diodes in line-time-base circuits of transformerless television receivers. **Outlines section,** 7D; requires miniature 9-contact socket. Type 20AQ3/LY88 is identical with type 16AQ3/XY88 except for heater ratings.

	16AQ3/ XY88	20AQ3/ LY88	
Heater Voltage (ac/dc)	16.4	20.2	volts
Heater Current	0.6	0.45	ampere
Peak Heater-Cathode Voltage	6600	6600	volts
MAXIMUM RATINGS (Design-Center Values)			
Supply Voltage at zero current		550	volts
Supply Voltage		250	volts
Peak Plate Current		550	mA
Average Plate Current		220	mA
Plate Dissipation		5	watts
Peak Negative-Pulse Plate Voltage*		6000#	volts

* Under no conditions should an absolute maximum value of 7500 volts be exceeded.

The pulse duration must not exceed 22 per cent of a cycle, or a maximum of 18 microseconds

16BQ11

Refer to type 8BQ11.