**12DA****TWIN DIODE—TWIN TRIODE****6AG11****30AG11**

Duodecar type containing two diodes and two high-mu triodes, used primarily in FM stereo multiplex service. Outlines section, 8A; requires duodecar 12-contact socket. Type 30AG11 is identical with type 6AG11 except for heater ratings.

Heater Voltage	6AG11	30AG11	
Heater Current	6.3	30	volts
Heater Cathode Voltage:	0.75	0.15	ampere
Peak value	±200 max	±200 max	volts
Average	100 max	100 max	volts

Class A₁ Amplifier**MAXIMUM RATINGS (Design-Maximum Values)**

Plate Voltage	330	volts
Plate Dissipation	2	watts

CHARACTERISTICS

Plate Voltage	125	volts
Grid Voltage	—1	volt
Amplification Factor	66	
Plate Resistance (Approx.)	8500	ohms
Transconductance	7800	μmhos
Plate Current	7.5	mA
Grid Voltage (Approx.) for plate current of 30 μA	—5	volts

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

Plate Current	5	mA
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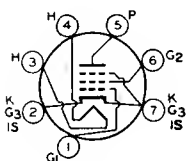
CHARACTERISTICS

Tube Voltage Drop for plate current of 18 mA	5	volts
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Refer to chart at end of section.

6AH4GT

Refer to chart at end of section.

6AH6**7BD****SHARP-CUTOFF PENTODE****6AK5
6AK5/
EF95**

Miniature types used as rf or if amplifiers especially in high-frequency wide-band applications at frequencies up to 400 MHz. Outlines section, 5B; require miniature 7-contact socket.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.175	ampere
Peak Heater-Cathode Voltage	±90 max	volts
Direct Interelectrode Capacitances (Approx.):*		
Grid No.1 to Plate	0.02 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	4	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	2.8	pF

* With external shield connected to pin 2 or 7.

Class A₁ Amplifier**MAXIMUM RATINGS (Design-Center Values)**

Plate Voltage	180	volts
Grid-No.2 (Screen-Grid) Voltage	See curve page 98	
Grid-No.2 Supply Voltage	180	volts
Grid-No.1 Voltage, Positive-bias value	0	volts
Plate Dissipation	1.7	watts

Grid-No.2 Input:

For grid-No.2 voltages up to 90 volts

0.5 watt

For grid-No.2 voltages between 90 and 180 volts

See curve page 98

Cathode Current

18 mA

CHARACTERISTICS

Plate Supply Voltage	120	180	volts
Grid-No.2 Supply Voltage	120	120	volts
Cathode-Bias Resistor	180	180	ohms
Plate Resistance (Approx.)	0.3	0.5	megohm
Transconductance	5000	5100	μmhos
Plate Current	7.5	7.7	mA
Grid-No.2 Current	2.5	2.4	mA
Grid-No.1 Voltage for plate current of 10 μA	-8.5	-8.5	volts

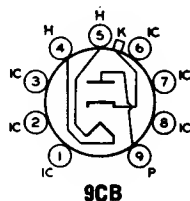
6AL3

Refer to chart at end of section.

6AL3/EY88

HALF-WAVE
VACUUM RECTIFIER

Miniature type used as damper tube in horizontal-deflection circuits of black-and-white television receivers. Outlines section, 7D; requires miniature 9-contact socket. Socket terminals 1, 2, 3, 6, 7, and 8 should not be used as tie points. It is especially important that this tube, like other power-handling tubes, be adequately ventilated. Heater: volts (ac/dc), 6.3; amperes, 1.55.



Damper Service

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

MAXIMUM RATINGS (Design-Center Values)

Peak Inverse Plate Voltage# (Absolute maximum)	7500*	volts
Peak Plate Current	550	mA
Average Plate Current	220	mA
Plate Dissipation	5	watts
Peak Heater-Cathode Voltage	6600	volts

* Under no circumstances should this absolute value be exceeded.

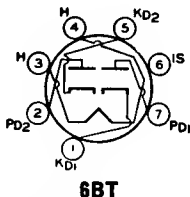
Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

6AL5

3AL5, 12AL5

TWIN DIODE

Miniature, high-perveance type used as detector in FM and television circuits, especially as a ratio detector in ac-operated FM receivers. Each diode section can be used independently of the other, or the two sections can be combined in parallel or full-wave arrangement. Resonant frequency of each unit is approximately 700 MHz. Outlines section, 5B; requires miniature 7-contact socket. Types 3AL5 and 12AL5 are identical with type 6AL5 except for heater ratings.



Heater Voltage (ac/dc)	3AL5	6AL5	12AL5	volts
Heater Current	3.15	6.3	12.6	ampere
Heater Warm-up Time (Average)	0.6	0.3	0.15	seconds
Peak Heater-Cathode Voltage	11	—	—	volts
	±330 max	±330 max	±330 max	

Direct Interelectrode Capacitances:

Plate No.1 to Cathode No.1, Heater, and Internal Shield	2.5	pF
Plate No.2 to Cathode No.2, Heater, and Internal Shield	2.5	pF
Cathode No.1 to Plate No.1, Heater, and Internal Shield	3.4	pF
Cathode No.2 to Plate No.2, Heater, and Internal Shield	3.4	pF
Plate No.1 to Plate No.2	0.068 max	pF

Half-Wave Rectifier

MAXIMUM RATINGS (Design-Center Values)

Peak Inverse Plate Voltage	330	volts
Peak Plate Current (Per Plate)	54	mA
Average Output Current (Per Plate)	9	mA