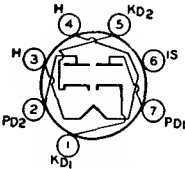


Damper Service

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).



6BT

MHz. Outlines section, 5B; requires miniature 7-contact socket. Types 3AL5 and 12AL5 are identical with type 6AL5 except for heater ratings.

TWIN DIODE

6AL5

3AL5, 12AL5

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

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

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

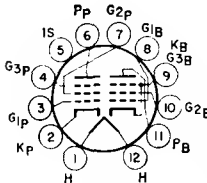
MAXIMUM RATINGS (Design-Center Values)			
Peak Inverse Plate Voltage	330	volts	
Peak Plate Current (Per Plate)	54	mA	
Average Output Current (Per Plate)	9	mA	

TYPICAL OPERATION

AC Plate Voltage per Plate (rms)	117	volts
Min. Total Effective Plate-Supply Impedance per Plate	300	ohms
Average Output Current per Plate	9	mA

Refer to chart at end of section.

6AL7GT



12BU

BEAM POWER TUBE—
SHARP-CUTOFF PENTODE

6AL11

10AL11, 12AL11

Duodecar type used as FM detector and audio-frequency output amplifier in television receivers. Outlines section, 8C; requires duodecar 12-contact socket. Types 10AL11 and 12AL11 are identical with type 6AL11 except for heater ratings.

	6AL11	10AL11	12AL11	
Heater Voltage (ac/dc)	6.3	9.8	12.6	volts
Heater Current	0.9	0.6	0.45	ampere
Heater Warm-up Time (Average)	—	11	11	seconds

Heater-Cathode Voltage:

Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts

Direct Interelectrode Capacitance:

Beam Power Unit:

Grid No.1 to Plate	0.26	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	11	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	12	pF

Pentode Unit:

Grid No.1 to Plate	0.034	pF
Grid No.3 to Plate	3.2	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	6.5	pF
Grid No.3 to Cathode, Heater, Grid No.1, Grid No.2, Plate, and Internal Shield	7.5	pF
Grid No.1 to Grid No.3	0.24	pF
Pentode Plate to Beam Power Plate	0.12	pF

Beam Power Unit as Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	275	volts
Grid-No.2 (Screen-Grid) Voltage	275	volts
Plate Dissipation	10	watts
Grid-No.2 Input	2	watts

TYPICAL OPERATION

Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-Grid) Voltage	—8	volts
Peak AF Grid-No.1 Voltage	8	volts
Zero-Signal Plate Current	35	mA
Maximum-Signal Plate Current	39	mA
Zero-Signal Grid-No.2 Current	2.5	mA
Maximum-Signal Grid-No.2 Current	7	mA
Plate Resistance (Approx.)	0.1	megohm
Transconductance	6500	μ mhos
Load Resistance	5000	ohms
Total Harmonic Distortion	10	per cent
Maximum-Signal Power Output	4.2	watts

MAXIMUM CIRCUIT VALUE

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	0.5	megohm

Pentode Unit as Class A₁ Amplifier

CHARACTERISTICS

Plate Supply Voltage	150	volts
Grid-No.3 (Suppressor-Grid) Voltage	0	volts
Grid-No.2 (Screen-Grid) Supply Voltage	100	volts
Cathode-Bias Resistor	560	ohms
Plate Resistance (Approx.)	0.15	megohm
Transconductance, Grid No.1 to Plate	1000	μ mhos
Transconductance Grid No.3 to Plate	400	μ mhos
Plate Current	1.3	mA
Grid-No.2 Current	2.1	mA
Grid-No.1 Voltage (Approx.) for plate current of 30 μ A	—4.5	volts
Grid-No.3 Voltage (Approx.) for plate current of 50 μ A	—4.5	volts

Pentode Unit as FM Detector

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	330	volts
Grid-No.3 Voltage	28	volts
Grid-No.2 Supply Voltage	330	volts
Grid-No.2 Voltage	See curve page 300	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	volts
Plate Dissipation	1.7	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 300	

6AM4

Refer to chart at end of section.

6AM6/EF91

Refer to chart at end of section.