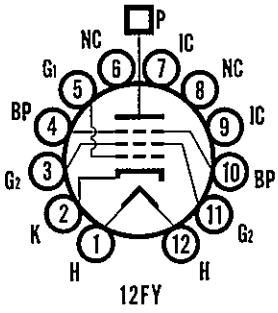
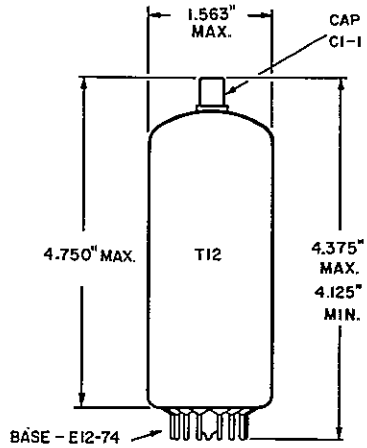
SYLVANIA

RECEIVING TUBES

- COLOR TV TYPE
- BEAM POWER PENTODE
- COMPACTRON CONSTRUCTION
- WING FIN CONSTRUCTION
- T-12 ENVELOPE
- 12 PIN BASE





DESCRIPTION

Sylvania types 6MB6, 23MB6 and 30MB6 are beam pentodes featuring compactron construction with a plate fin radiator. The fin radiator provides improved heat distribution and a greater plate dissipation capability. This in turn increases reliability under rated conditions. They are designed for use as horizontal deflection amplifiers in color television receivers.

MECHANICAL DATA

Envelope	T-12
Base	E12-74(Button 12 Pin)
Outline	See Drawing
Maximum Diameter	1.563 Inches
Maximum Seated Height	4.375 Inches
Maximum Overall Length	4.750 Inches
Cathode	Coated Unipotential
Operating Position	Any
Top Cap	C1-1
Basing	12FY

MECHANICAL DATA (Continued)

Terminal Connections

Pin No. 1 - Heater	Pin No. 7 - Internal Connection (Do Not Use)
Pin No. 2 - Cathode	Pin No.8 - No Connection
Pin No. 3 - Grid No. 2	Pin No.9 - Internal Connection (Do Not Use)
Pin No. 4 - Beam Plates	Pin No.10 - Beam Plates
Pin No. 5 - Grid No. 1	Pin No.11 - Grid No.2
Pin No. 6 - No Connection	Pin No.12 - Heater

Top Cap - Plate

ELECTRICAL DATA

HEATER CHARACTERISTICS AND RATINGS (Design Maximum Rating System) (1)

	30MB6	23MB6	6MB6	
Heater Circuit	Series (2)	Series (2)	Parallel (3)	
Heater Voltage	30.0 (4)	23.0 (5)	6.3±0.6(6)	Volts
Heater Current	0.450±0.03 (6)	0.600±0.04 (6)	2.25(7)	Amperes
Heater Warm-up Time (8)	11	11	-	

Maximum Heater Cathode Voltage		
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Heater Positive with Respect to Cathode		
DC	100	Volts
Total DC and Peak	200	Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Grid to Plate g1 to p	0.5	pf
Input: g1 to (h+k+g2+g3)	35.0	pf
Output: p to (h+k+g2+g3)	17.0	pf

RATINGS (Design Maximum Rating System) (1)

Horizontal Deflection Amplifier (9)

DC Plate Supply Voltage (Boost + DC Power Supply)	990	Volts	Max
Peak Positive Plate Pulse Voltage (Absolute Maximum)	8000	Volts	Max
Peak Negative Plate Pulse Voltage	100	Volts	Max
Positive Grid No.3 Voltage	35	Volts	Max
Grid No.2 DC Voltage	225	Volts	Max
Peak Negative Grid No.1 Voltage	300	Volts	Max
Plate Dissipation (10) (13)	38.0	Watts	Max
Grid No.2 Dissipation (13)	7.0	Watts	Max
Average Cathode Current	400	Ma	Max
Peak Cathode Current	1400	Ma	Max

RATINGS (Design Maximum Rating System) (1) (Continued)

Grid No.1 Circuit Resistance		
with Grid Bias Feedback HV Regulation	1.2	Meg. Max.
with DC or Pulse Shunt HV Regulation	10	Meg. Max.
Bulb Temperature (At Hottest Point)	280	°C Max.

AVERAGE CHARACTERISTICS

Plate Voltage	150	60	Volts
Grid No.2 Voltage	110	110	Volts
Grid No.1 Voltage	-20	0	Volts
Grid No.3 Voltage	(12)	(12)	Volts
Plate Current	110	660	Ma(11)
Grid No.2 Current	2.0	42	Ma(11)
Transconductance	14,000		μmhos
Triode Amplification Factor (Grid No.2 Connected to Plate) (Eb = Ec2 = 125 Volts; Ec1 = -25 Volts)	3.5		
Plate Resistance (Approx.)	5000		Ohms
Grid No.1 Voltage for Ib = 1 Ma (Approx.)	-40		Volts

HIGH VOLTAGE CUTOFF CHARACTERISTICS

Peak Positive Plate Pulse Voltage	5500	6000	7000	8000	Volts
Grid No.2 Voltage	175	175	175	175	Volts
Grid No.3 Voltage	0	0	0	0	Volts
Grid No.1 Voltage (Approx.) Ib = 75 μa	185	197	223	247	Volts
Grid No.1 Voltage (Approx.) Ib = 1 Ma	135	-	-	-	Volts

MINIMUM RECOMMENDED GRID DRIVE (See Chart)

Peak Positive Plate Pulse Voltage	5500	6000	7000	8000	Volts
Peak Negative Grid No.1 Voltage	220	232	258	282	Volts

NOTES:

(1) Design Maximum Ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowances for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the

NOTES (Continued)

(2) Operated with the heater connected in series with the heaters of other tubes having the same bogey heater current.

(3) Operated with the heater connected in parallel with the heaters of other tubes having the same bogey heater voltage.

(4) Heater voltage for a bogey tube at If = 0.450 ampere.

(5) Heater voltage for a bogey tube at If = 0.600 ampere.

(6) For series/parallel heater operation, the equipment designer should design the equipment so that heater current/voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater current/voltage within the specified tolerance.

(7) Heater current for a bogey tube at Ef = 6.3 volts.

(8) Heater warm-up time is the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times the rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater current.

(9) For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice of Television Broadcasting Stations, Federal Communications Commission," the duty cycle of the voltage pulse is not to exceed 15% of one horizontal scanning cycle.

(10) In stages operating with a grid leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

(11) Values measured by a method involving a recurrent waveform such that the plate and screen dissipations will be kept within ratings in order to prevent damage to the tube.

(12) Grid No.3 (Beam Plate) returned to cathode. (At Socket)

(13) Preferred Operation Dissipation Values: (Watts-Max.)

Pp	Pg2
38	5.0
36	5.5
34	6.0
32	6.5
30	7.0

CHART OF RECOMMENDED MINIMUM PEAK NEGATIVE GRID VOLTAGE
VS PEAK POSITIVE PLATE PULSE VOLTAGE