

HORIZONTAL AMPLIFIER BEAM-POWER PENTODE TYPES 6JM6, 12JM6 AND 17JM6

The 6JM6, 12JM6 and 17JM6 are 12-Pin, button-based beam-power pentode types designed for service as output amplifier in horizontal deflection circuits in television receivers. These types are characterized by high zero bias plate current, high plate current to grid 2 current ratio and high DC plate supply voltage ratings. These features with a plate dissipation rating of 17.5 watts make this tube especially desirable for its designed service. Separate beam plate terminals can be used to suppress snivets.

The 12JM6 and 17JM6 have been designed for use in receivers which employ series connected heaters. When employed in this type of circuit heater voltage surges are minimized inasmuch as heater warm-up characteristic is controlled.

ELECTRICAL

Cathode.....	Coated Unipotential		
Filament:	6JM6	12JM6	17JM6
Voltage (ac or dc) . . .	6.3 ± 0.6	12.6	16.8
Current	1.20	0.60 ± 0.04	0.45 ± 0.03
Warm-up Time (Note 1) . .	—	11	11
Direct Interelectrode Capacitances (Unshielded):			
Grid to Plate			0.6 pF
Input			16 pF
Output			7 pF

MECHANICAL

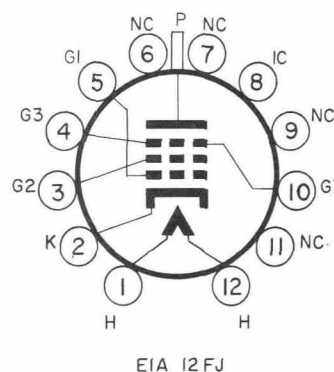
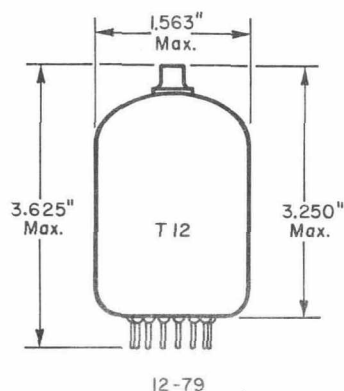
Bulb	T-12
Base	12-Pin Button (EIA E12-74)
Outline	EIA 12-79
Basing	12FJ
Top Cap.	C1-3, Skirted Miniature
Mounting Position	Any

HORIZONTAL DEFLECTION AMPLIFIER (Note 2)

MAXIMUM RATINGS

Design Maximum Values (Note 3)

DC Plate Supply Voltage		
(Boost + DC Power Supply)	770 max.	Volts
Peak Positive Plate Voltage	6500 max.	Volts
Peak Negative Pulse Plate Voltage	1500 max.	Volts
Positive DC Beam Plate Voltage	70 max.	Volts
Plate Dissipation (Note 4)	17.5 max.	Watts
Negative DC Grid 1 Voltage	55 max.	Volts
Peak Negative Grid 1 Voltage	330 max.	Volts
DC Grid 2 Voltage	220 max.	Volts
Grid 2 Dissipation	3.5 max.	Watts
Average Cathode Current	175 max.	mA
Peak Cathode Current	550 max.	mA
Grid 1 Circuit Resistance (Note 5)	1.0 max.	Megohm
Bulb Temperature (At Hottest Point)	220 max.	°C
Heater-Cathode Voltage:		
Heater Negative with Respect to Cathode		
Total DC + Peak	200 max.	Volts
Heater Positive with Respect to Cathode		
DC Component	100 max.	Volts
Total DC + Peak	200 max.	Volts



AVERAGE CHARACTERISTICS

Beam Plates Connected to Cathode at Socket

PENTODE OPERATION

Plate Voltage	250	Volts
Grid 2 Voltage	150	Volts
Grid 1 Voltage	-22.5	Volts
Plate Current	65	mA
Grid 2 Current	1.8	mA
Transconductance	7300	μ mhos
Plate Resistance	18000	Ohms

ZERO BIAS

Plate Voltage (Note 6)	60	Volts
Grid 2 Voltage (Note 6)	150	Volts
Plate Current (Note 7)	345	mA
Grid 2 Current (Note 7)	27	mA

CUTOFF

Plate Voltage	5000	250	Volts
Grid 2 Voltage	150	150	Volts
Plate Current	1	1	mA
Grid 1 Voltage (Approx.)	-100	-42	Volts

TRIODE AMPLIFICATION FACTOR

Plate Voltage	150	Volts
Grid 2 Voltage	Connected to plate	
Grid 1 Voltage	-22.5	Volts
Amplification Factor	4.4	-

NOTES

1. Heater Warm-up Time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three times rated heater voltage divided by rated heater current.
2. For operation in a 525-line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcasting Stations; Federal Communications Commission." The duty cycle of the voltage pulse not to exceed 15% of the scanning cycle.
3. Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur in the types of service for which the tube is rated. Therefore the equipment designed must establish the circuit design so that initially and throughout equipment life no Design-Maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment control adjustment, load variation and environmental conditions.
4. In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.
5. Using grid-leak bias.
6. Applied for short interval (maximum of 2 seconds) so as not to damage tube.
7. These values can be measured by a method involving a recurrent waveform that such the plate and grid 2 dissipation will be kept within ratings to prevent damage to the tube.