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RCA-6JT6, 12JT6, 17JT6

BEAM POWER TUBES

NOVAR TYPES

T12 Bulb
RCA Dark Heater

For Horizontal-Deflection-Amplifier Service in Black-and-White TV Receivers

Controlled Heater Warm-Up Time

RCA-6JT6, 12JT6, and 17JT6 are single-ended, high-perveance beam power tubes of the novar type having a T12 bulb. These types are useful in high-efficiency horizontal-deflection-amplifier circuits of black-and-white television receivers.

These tubes have exceptionally good knee-current characteristics, permitting them to draw a plate current of 390 milliamperes with zero grid-No.1 bias and only 60 volts on the plate. The 6JT6, 12JT6, and 17JT6 also have a high ratio of plate current to grid-No.2 current. These features, in addition to high voltage ratings and high dissipation ratings, permit the design of horizontal-deflection-amplifier circuits capable of providing full deflection for systems employing wide-angle or high-voltage picture tubes.

A separate base-pin terminal is provided to permit the application of a positive voltage to grid No.3 to minimize interference from "snivets" which may occur in both vhf and uhf television receivers.

Two base-pin terminals are provided for grid No.2 to increase the grid-No.2-dissipation capability and to provide added flexibility in circuit design.

The 6JT6, 12JT6, and 17JT6 utilize the RCA Dark Heater for long life and dependable performance.

The 6JT6 has a 6.3-volt/1.200-ampere heater. The 12JT6 and 17JT6 are identical to the 6JT6 except that the 12JT6 has a 0.600-ampere/12.6-volt heater and the 17JT6 has a 0.450-ampere/16.8-volt heater. The heaters of the 12JT6 and the 17JT6 have a controlled 11-second warm-up time for use in series heater-string arrangements.

GENERAL DATA

Electrical:

Heater Ratings and Characteristics:

	6JT6	*12JT6*	*17JT6*	
Voltage (AC or DC).	6.3 ± 0.6[a]	12.6	16.8	volts
Current at bogey voltage	1.200	0.600[b]	0.450[b]	amp
Warm-up time (Average)	-	11	11	sec
Peak heater-cathode voltage:				
Heater negative with respect to cathode.		200	max.	volts
Heater positive with respect to cathode.		200[c]	max.	volts
Direct Interelectrode Capacitances (Approx.):[d]				
Grid No.1 to plate:		0.26		pf
Input: G1 to (K,G3,G2,H).		15.0		pf
Output: P to (K,G3,G2,H).		6.5		pf

Characteristics, Class A_1 Amplifier:

	Triode Connection[e]			
Plate Voltage . .	150	60	250	volts
Grid No.3	-	*Connected to cathode at socket*		
Grid-No.2 Voltage	150	150	150	volts
Grid-No.1 Voltage	-22.5	0	-22.5	volts
Amplification Factor.	4.4	-	-	
Plate Resistance (Approx.) . . .	-	-	15000	ohms
Transconductance.	-	-	7100	μmhos
Plate Current . .	-	390[f]	70	ma
Grid-No.2 Current	-	32[f]	2.1	ma
Grid-No.1 Voltage (Approx.) for plate ma = 1. .	-	-	-42	volts

[a] For operation of the heater of this tube in parallel with the heaters of other tubes.

[b] When the heater of this tube is operated in series with the heaters of other tubes, the heater current of the 12JT6 must be limited to 0.600 ± 0.040 ampere; that of the 17JT6 to 0.450 ± 0.030 ampere.

[c] The dc component must not exceed 100 volts.

[d] Without external shield.

[e] With grid No.2 connected to plate at socket.

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HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, *Design-Maximum Values:*

For operation in a 525-line, 30-frame system[g]

DC Plate Supply Voltage	770 max.	volts
Peak Positive-Pulse Plate Voltage[h]	6500 max.	volts
Peak Negative-Pulse Plate Voltage	1500 max.	volts
DC Grid-No.3 (Suppressor-Grid) Voltage[j]	70 max.	volts
DC Grid-No.2 (Screen-Grid) Voltage	220 max.	volts
DC Grid-No.1 (Control-Grid) Voltage:		
Negative-bias value	55 max.	volts
Peak Negative-Pulse Grid-No.1 Voltage	330 max.	volts
Cathode Current:		
Peak	550 max.	ma
Average	175 max.	ma
Grid-No.2 Input	3.5 max.	watts
Plate Dissipation[k]	17.5 max.	watts
Bulb Temperature (At hottest point on bulb surface)	240 max.	°C

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For grid-resistor-bias operation	1 max.	megohm

[f] This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.

[g] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

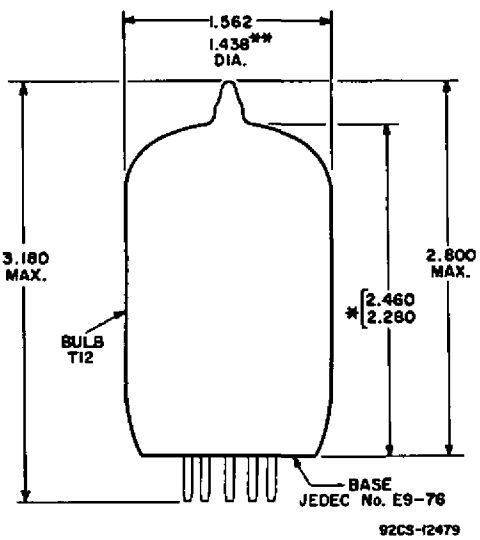
[h] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

[j] A positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in television receivers. A typical value for this voltage is 30 volts.

[k] An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

DIMENSIONAL OUTLINE

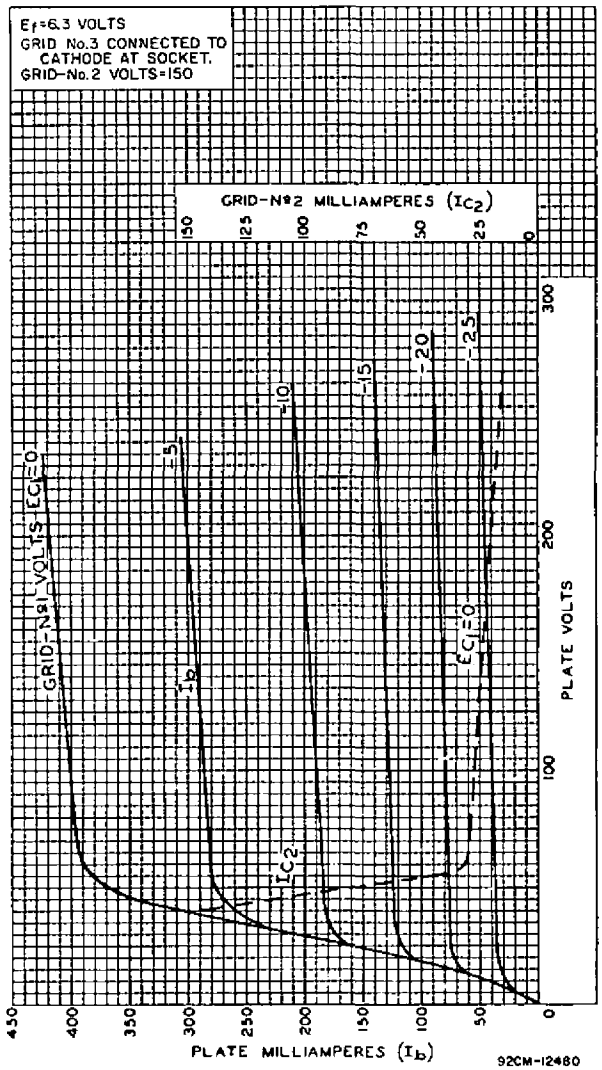
Dimensions in Inches



* Measured from base seat to bulb-top line as determined by a ring gauge of 0.600" inside diameter.

** The minimum applies in the zone starting 0.375" from the base seat.

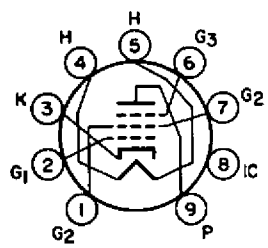
AVERAGE CHARACTERISTICS



For Type 6JT6, and for Types 12JT6 (E_f = 12.6 V) and 17JT6 (E_f = 16.8 V).

TERMINAL DIAGRAM

Bottom View



JEDEC 9QU

Pin 1 – Grid No.2	Pin 6 – Grid No.3
Pin 2 – Grid No.1	Pin 7 – Grid No.2
Pin 3 – Cathode	Pin 8 – Do Not Use
Pin 4 – Heater	Pin 9 – Plate
Pin 5 – Heater	

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