

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 A₁ 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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Electronic Components and Devices
Harrison, N. J.

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6JT6, 12JT6, 17JT6 3-64
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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.

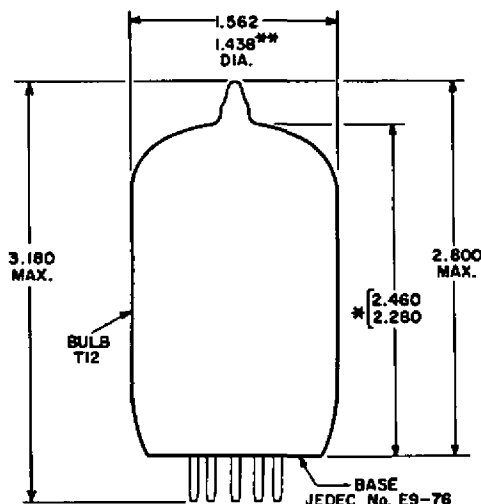
^h This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

^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

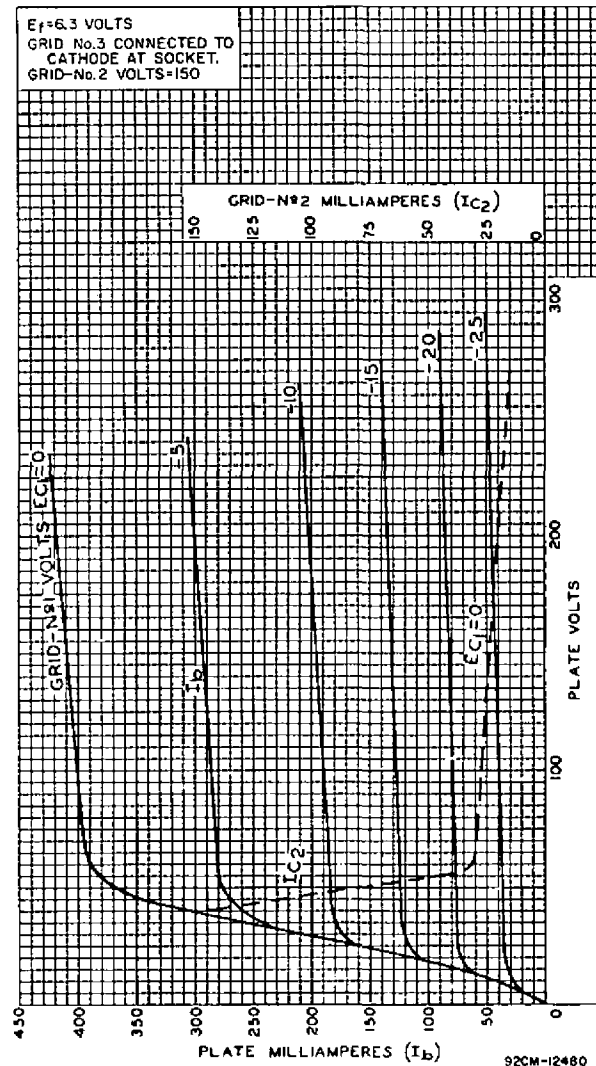


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* Measured from base seat to bulb-top line as determined by a ring gauge of 0.600" inside diameter.

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

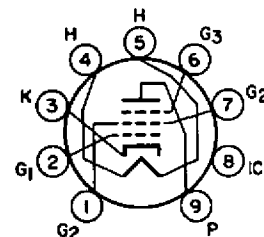
AVERAGE CHARACTERISTICS



For Type 6JT6, and for Types 12JT6 ($E_f = 12.6 \text{ V}$) and 17JT6 ($E_f = 16.8 \text{ V}$).

TERMINAL DIAGRAM

Bottom View



JEDEC 9QU

Pin 1 - Grid No.2

Pin 2 - Grid No.1

Pin 3 - Cathode

Pin 4 - Heater

Pin 5 - Heater

Pin 6 - Grid No.3

Pin 7 - Grid No.2

Pin 8 - Do Not Use

Pin 9 - Plate

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