

Beam Power Tube

Duodecar Type

For Low B+ Horizontal-Deflection-Amplifier Circuits of Color-TV Receivers

ELECTRICAL CHARACTERISTICS – Bogey Values

Heater Voltage, ac or dc . . .	E_h	6.3	V
Heater Current	I_h	2.85	A
Direct Interelectrode			
Capacitances (approx.): ^d			
Grid No.1 to plate	c_{g1-p}	0.8	pF
Input: G1 to (K,G3,G2,H) . . .	c_i	40	pF
Output: P to (K,G3,G2,H) . . .	c_o	16	pF

For the following characteristics, see Conditions below:

Amplification Factor

(Triode Connection) ^b . . .	μ	—	—	—	4 ^c
Plate Resistance (approx.)	r_p	—	—	—	6000 Ω
Transconductance	g_m	—	—	—	14000 μmho
DC Plate Current	I_b	—	1100 ^d	780 ^d	100 mA
DC Grid-No.2 Current	I_{c2}	—	110 ^d	44 ^d	2 mA
Cutoff DC Grid-No.1 Volt-					

age for $I_b = 1$ mA	$E_{c1(\text{co})}$	-125	—	—	-40	V
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Conditions:

Heater Voltage	E_h	← 6.3 →				V
Peak Positive-Pulse						
Plate Voltage ^e	e_{bm}	5000	—	—	—	V
DC Plate Voltage	E_b	—	45	60	150	V
DC Grid-No.3 Voltage	Connected to cathode at socket					
DC Grid-No.2 Voltage	E_{c2}	110	160	110	110	V
DC Grid-No.1 Voltage	E_{c1}	—	0	0	-22.5	V

MECHANICAL CHARACTERISTICS

Maximum Overall Length	4.625 in (117.47 mm)
Maximum Seated Length	4.250 in (107.95 mm)
Maximum Diameter	1.563 in (39.7 mm)
Dimensional Outline	JEDEC 12-118
Envelope	JEDEC T12
Top Cap ^f	Small (JEDEC C1-1)
Base	Large-Button Duodecar 12-Pin (JEDEC E12-74)

6KD6

Terminal Diagram	JEDEC 12GW
Type of Cathode	Coated Unipotential
Operating Position	Any

MAXIMUM RATINGS – Design-Maximum Values⁹

For operation as a Horizontal-Deflection-Amplifier Tube
in a 525-line, 30-frame system

DC Plate Supply Voltage	E_{bb}	990	V
Peak Positive-Pulse Plate Voltage ^h	e_{bm}	7000 ^k	V
DC Grid-No.3 Voltage ^m	E_{c3}	20	V
DC Grid-No.2 (Screen-Grid) Voltage	E_{c2}	200	V
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage	$-e_{c1m}$	250	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	±200	V
Average ⁿ	E_{hk}	100	V
Heater Voltage, ac or dc	E_h	5.7 to 6.9	V
Cathode Current:			
Peak	i_{km}	1400	mA
Average ⁿ	$I_{k(av)}$	400	mA
Grid-No.2 Input	P_{g2}	5.0	W
Plate Dissipation ^p	P_b	33	W
Envelope Temperature	T_E	225 ^q	°C

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance	R_{g1}	2.2	MΩ
Grid-No.3-Circuit Resistance	R_{g3}	0.01	MΩ

^a Measured without external shield in accordance with the current issue of EIA Standard RS-191.

^b With grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.

^c Conditions: $E_b = E_{c2} = 150$ V, $E_{c1} = -22.5$ V.

^d This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.

^e Under pulse-duration condition specified in Footnote h.

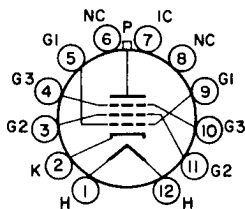
^f Designed to mate with connector of 0.250-inch cap, generally available from your local RCA distributor.

⁹ As defined in the current issue of EIA Standard RS-239, unless otherwise specified.

- h** This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one horizontal scanning cycle is 10 μ s.
- k** Absolute-Maximum Value.
- m** In horizontal-deflection-amplifier service, a positive voltage may be applied to grid No.3 to reduce interference from "snivets," which may occur in both vhf and uhf television receivers. A typical value for this voltage is 20 volts.
- n** Measured with a DC meter.
- p** An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
- q** This rating is applicable when measurement is made using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the envelope. A maximum rating of 240°C is applicable to direct thermocouple measurements taken at the hottest point on the envelope surface.

TERMINAL DIAGRAM (Bottom View)

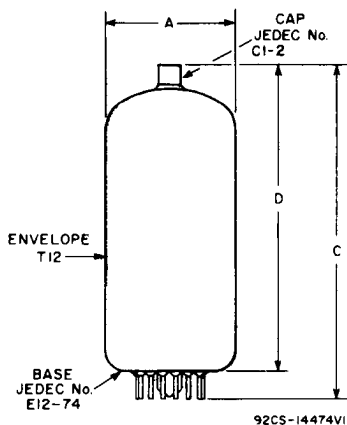
- Pin 1 – Heater
 Pin 2 – Cathode
 Pin 3 – Grid No.2
 Pin 4 – Grid No.3
 Pin 5 – Grid No.1
 Pin 6 – No Connection
 Pin 7 – Do Not Use
 Pin 8 – No Connection
 Pin 9 – Grid No.1
 Pin 10 – Grid No.3
 Pin 11 – Grid No.2
 Pin 12 – Heater
 Cap – Plate



JEDEC 12GW

6KD6

DIMENSIONAL OUTLINE (JEDEC No.12-118)



DIMENSION	INCHES		MILLIMETERS	
	Min.	Max.	Min.	Max.
A	1.437*	1.563	36.5*	39.7
C	—	4.625	—	117.47
D	—	4.250	—	107.95
MILLIMETER DIMENSION DERIVED FROM INCH DIMENSION				
* Applies to the minimum diameter except in the area of the seal.				