

Beam Power Tube

Duodecar Type

For Vertical-Deflection-Amplifier

Circuits in TV Receivers

ELECTRICAL CHARACTERISTICS - Bogey Values

Heater Voltage, ac or dc . . .	E_h	6.3	V
Heater Current	I_h	0.8	A
Direct Interelectrode Capacitances: ^a			
Grid No.1 to plate	c_{g1-p}	0.54	pF
Input: G1 to (K,G3,G2,H)	c_i	9.5	pF
Output: P to (K,G3,G2,H)	c_o	7.0	pF

For the following characteristics, see Conditions below:

Plate Resistance (approx.) . . .	r_p	—	50000	Ω
Transconductance	g_m	—	4100	μmho
DC Plate Current	I_b	180 ^b	43	mA
DC Grid-No.2 Current	I_{c2}	20 ^b	3.5	mA
Cutoff DC Grid-No.1 Voltage for $I_b = 100 \mu\text{A}$	$E_{c1(co)}$	—	-50	V

Conditions:

Heater Voltage	E_h	6.3	6.3	V
DC Plate Voltage	E_b	60	250	V
DC Grid-No.2 Voltage	E_{c2}	250	250	V
DC Grid-No.1 Voltage	E_{c1}	0 ^c	-20	V

MECHANICAL CHARACTERISTICS

Maximum Overall Length	2.875in (73.02 mm)
Maximum Seated Length	2.500in (63.5 mm)
Maximum Diameter	1.188in (30.1 mm)
Dimensional Outline	JEDEC 9-60
Envelope	JEDEC T9
Base	Small-Button Duodecar 12-Pin (JEDEC E12-70)
Terminal Diagram	JEDEC 12EY
Type of Cathode	Coated Unipotential
Operating Position	Any

MAXIMUM RATINGS - Design-Maximum Values^d

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

DC Plate Supply Voltage	E_{bb}	350	V
Peak Positive-Pulse Plate Voltage ^e	e_{bm}	2500	V

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2-69

6HE5

DC Grid-No.2 (Screen-Grid) Voltage .	E_{c2}	300	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	± 200	V
Average	E_{hk}	100	V
Heater Voltage, ac or dc	E_h	5.7 to 6.9	V
Cathode Current:			
Peak	i_{km}	260	mA
Average	$I_{k(av)}$	75	mA
Grid-No.2 Input	P_{g2}	2.75	W
Plate Dissipation ^f	P_b	12	W
Envelope Temperature (at hottest point on envelope surface.)	T_E	200	°C

MAXIMUM CIRCUIT VALUES

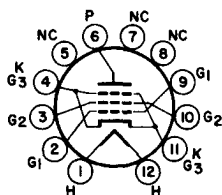
Grid-No.1-Circuit Resistance

With fixed bias	R_{g1}	1.0	$M\Omega$
With cathode bias	R_{g1}	2.2	$M\Omega$

- ^a Measured without external shield in accordance with the current issue of EIA Standard RS-191.
- ^b This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
- ^c Applied for two seconds maximum so as not to damage tube.
- ^d Unless otherwise specified, as defined in the current issue of EIA Standard RS-239.
- ^e This rating is applicable when the duration of the voltage pulse does not exceed 15% of one vertical scanning cycle. In a 525-line, 30-frame system, 15% of one vertical scanning cycle is 2.5 ms.
- ^f An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

TERMINAL DIAGRAM - Bottom View

- Pin 1 - Heater
- Pin 2 - Grid No.1
- Pin 3 - Grid No.2
- Pin 4 - Grid No.3, Cathode
- Pin 5 - No Connection
- Pin 6 - Plate
- Pin 7 - No Connection
- Pin 8 - No Connection
- Pin 9 - Grid No.1
- Pin 10 - Grid No.2
- Pin 11 - Grid No.3, Cathode
- Pin 12 - Heater



JEDEC 12EY