

ELECTRONIC TUBE REFERENCE

6BD11

Voltage Dual Triode Pentode electronic tube

CONSOLIDATED TECHNICAL DATA

3 SECTIONS

CONSTRUCTION

PENTODE-TRIODE-TRIODE

Compactron combining high-mu and medium-mu triodes with a sharp-cutoff pentode for television and general-purpose signal-amplifier circuits.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12DP	BASE PINS	12
NOMINAL HEATER	6.3 V / 1.05 A	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

12DP - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	–	H – Heater	CONNECTED
PIN2	A	P – Plate (Anode)	CONNECTED
PIN3	C	G1 – Control Grid	CONNECTED
PIN4	C	P – Plate (Anode)	CONNECTED
PIN5	B	K – Cathode	CONNECTED
PIN6	B	G3 – Suppressor Grid	CONNECTED
PIN7	C	K – Cathode	CONNECTED
PIN7	–	IS – Internal Screen	CONNECTED
PIN8	B	P – Plate (Anode)	CONNECTED
PIN9	A	G3 – Suppressor Grid	CONNECTED
PIN9	A	K – Cathode	CONNECTED
PIN10	A	G2 – Screen Grid	CONNECTED
PIN11	A	G1 – Control Grid	CONNECTED

TERMINAL	SECTION	ELEMENT	STATUS
PIN12	—	H — Heater	CONNECTED

SECTION RATINGS

SECTION1 Triode		
PLATE RESISTANCE		12400 Ω
TRANSCONDUCTANCE		0.0055 S
AMPLIFICATION FACTOR		68
MAXIMUM PLATE VOLTAGE		330 V
MAXIMUM PLATE DISSIPATION		1.5 W
<i>High-mu triode, source Section 1.</i>		

SECTION2 Triode		
PLATE RESISTANCE		9400 Ω
TRANSCONDUCTANCE		0.0044 S
AMPLIFICATION FACTOR		41
MAXIMUM PLATE VOLTAGE		330 V
MAXIMUM PLATE DISSIPATION		2 W
<i>Medium-mu triode, source Section 2.</i>		

SECTION3 Pentode		
PLATE RESISTANCE		45000 Ω
TRANSCONDUCTANCE		0.0104 S
MAXIMUM PLATE VOLTAGE		330 V
MAXIMUM PLATE DISSIPATION		4 W
MAXIMUM SCREEN DISSIPATION		1.1 W
<i>Pentode section; ratings and characteristics retained in parameter rows where not safely promotable.</i>		

Dual triode with high-mu and medium-mu units plus a sharp-cutoff pentode. The supplied datasheet was read for heater data, maximum ratings, operating characteristics, and interelectrode capacitances where published.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 General Electric Co

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1968 GENERAL ELECTRIC CO

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	200 V	—
Grid Voltage	-2 V	—
Plate Current	7 mA	—
GridVoltageAtPlateCurrent100uA	-5.5 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid To Plate Capacitance	1.9 pF	—
Input Capacitance	3 pF	—
Output Capacitance	2.2 pF	—

1968 GENERAL ELECTRIC CO

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	200 V	—
Cathode Bias Resistance	220 ohm	—
Plate Current	9.2 mA	—
GridVoltageAtPlateCurrent100uA	-6.5 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid To Plate Capacitance	3.6 pF	—
Input Capacitance	2.4 pF	—
Output Capacitance	3.8 pF	—

Section 3 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Supply Voltage	330 V	—
HeaterCathodePositiveDC	100 V	—
HeaterCathodeTotalDCPeak	200 V	—
Plate Voltage	35 V	Pentode; PlateVoltage=35V; ScreenVoltage=135V
Screen Voltage	135 V	Pentode; PlateVoltage=35V; ScreenVoltage=135V
Grid1 Voltage	0 V	Pentode; PlateVoltage=35V; ScreenVoltage=135V
Plate Voltage	135 V	Pentode; PlateVoltage=135V; ScreenVoltage=135V
Screen Voltage	135 V	Pentode; PlateVoltage=135V; ScreenVoltage=135V
Cathode Bias Resistance	100 ohm	Pentode; PlateVoltage=135V; ScreenVoltage=135V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	34 mA	Pentode; PlateVoltage=35V; ScreenVoltage=135V
Screen Current	13 mA	Pentode; PlateVoltage=35V; ScreenVoltage=135V
Plate Current	17 mA	Pentode; PlateVoltage=135V; ScreenVoltage=135V
Screen Current	4 mA	Pentode; PlateVoltage=135V; ScreenVoltage=135V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1 To Plate Capacitance	0.13 pF	—
Input Capacitance	11 pF	—
Output Capacitance	4.6 pF	—



1971 RCA HB3 Binder 4 of 7

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 RCA HB3 BINDER 4 OF 7
Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) ±	3 V	Section1;PublishedColumn1
Voltage (AC or DC) ±	0.6 V	Section1;PublishedColumn2
Current at	6.3 V	Section1
Peak	200 V	Section1
DC component	100 V	Section1
Plate Supply Voltage	200 V	Section1;PublishedColumn1
Grid Voltage	-2 V	Section1
Cathode Resistor	220 ohm	Section1
Plate Resistance (Approx.)	12400 ohm	Section1;PublishedColumn1
Plate Resistance (Approx.)	9400 ohm	Section1;PublishedColumn2
Transconductance	5500 µS	Section1;PublishedColumn1
Transconductance	4400 µS	Section1;PublishedColumn2
Plate Current	7 mA	Section1;PublishedColumn1
Plate Current	9.2 mA	Section1;PublishedColumn2
Grid Voltage for plate µa =	-5.5 V	Section1;PublishedColumn1
Grid Voltage for plate µa =	-6.5 V	Section1;PublishedColumn2
Plate Supply Voltage	35 V	Section1;PublishedColumn1
Plate Supply Voltage	135 V	Section1;PublishedColumn2
Grid-No. Supply Voltage	135 V	Section1;PublishedColumn1
Cathode Resistor	100 ohm	Section1
Plate Resistance (Approx.)	45000 ohm	Section1
Transconductance	10400 µS	Section1
Plate Current b	34 mA	Section1;PublishedColumn1
Plate Current b	17 mA	Section1;PublishedColumn2
► Grid-No. Currerit b	13 mA	Section1;PublishedColumn1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
► Grid-No. Currenit b	4 mA	Section1;PublishedColumn2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	1.9 pF	Section1
Input: GT to (KTL KT + IS, Kp+G p + 'I S, H)	3 pF	Section1;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	3 pF	Section1;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	2.2 pF	Section1;PublishedColumn2
Grid to plate	3.6 pF	Section1
Input: GT to (KT + IS, Kp+G p+ IS, H)	3 pF	Section1;PublishedColumn1
Input: GT to (KT + IS, Kp+G p+ IS, H)	2.4 pF	Section1;PublishedColumn2
Output: PT to (K + IS, Kp+G p+ IS, H)	3 pF	Section1;PublishedColumn1
Output: PT to (K + IS, Kp+G p+ IS, H)	3.8 pF	Section1;PublishedColumn2
Grid No. to plate	1 pF	Section1;PublishedColumn1
Grid No. to plate	0.13 pF	Section1;PublishedColumn2
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	2 pF	Section1;PublishedColumn1
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	11 pF	Section1;PublishedColumn2
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	2 pF	Section1;PublishedColumn1
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	4.6 pF	Section1;PublishedColumn2
PentodeplatetoplateofiriodeNo max	2 pF	Section1;PublishedColumn1
PentodeplatetoplateofiriodeNo max	0.045 pF	Section1;PublishedColumn2
PlateoftriodeNo.ltoplateoftriodeNo. . max,	2 pF	Section1;PublishedColumn1
PlateoftriodeNo.ltoplateoftriodeNo. . max,	0.075 pF	Section1;PublishedColumn2

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) $\pm$	3 V	Section2;PublishedColumn1
Voltage (AC or DC) $\pm$	0.6 V	Section2;PublishedColumn2
Current at	6.3 V	Section2
Peak	200 V	Section2
DC component	100 V	Section2
Plate Supply Voltage	200 V	Section2;PublishedColumn1
Grid Voltage	-2 V	Section2
Cathode Resistor	220 ohm	Section2
Plate Resistance (Approx.)	12400 ohm	Section2;PublishedColumn1
Plate Resistance (Approx.)	9400 ohm	Section2;PublishedColumn2
Transconductance	5500 μ S	Section2;PublishedColumn1
Transconductance	4400 μ S	Section2;PublishedColumn2
Plate Current	7 mA	Section2;PublishedColumn1
Plate Current	9.2 mA	Section2;PublishedColumn2
Grid Voltage for plate μ a =	-5.5 V	Section2;PublishedColumn1
Grid Voltage for plate μ a =	-6.5 V	Section2;PublishedColumn2
Plate Supply Voltage	35 V	Section2;PublishedColumn1
Plate Supply Voltage	135 V	Section2;PublishedColumn2
Grid-No. Supply Voltage	135 V	Section2;PublishedColumn1
Cathode Resistor	100 ohm	Section2
Plate Resistance (Approx.)	45000 ohm	Section2
Transconductance	10400 μ S	Section2
Plate Current b	34 mA	Section2;PublishedColumn1
Plate Current b	17 mA	Section2;PublishedColumn2
► Grid-No. Currerit b	13 mA	Section2;PublishedColumn1
► Grid-No. Currerit b	4 mA	Section2;PublishedColumn2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	1.9 pF	Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input: GT to (KTL KT + IS, Kp+G p + 'I S, H)	3 pF	Section2;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	3 pF	Section2;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	2.2 pF	Section2;PublishedColumn2
Grid to plate	3.6 pF	Section2
Input: GT to (KT + IS, Kp+G p+ IS, H)	3 pF	Section2;PublishedColumn1
Input: GT to (KT + IS, Kp+G p+ IS, H)	2.4 pF	Section2;PublishedColumn2
Output: PT to (K + IS, Kp+G p+ IS, H)	3 pF	Section2;PublishedColumn1
Output: PT to (K + IS, Kp+G p+ IS, H)	3.8 pF	Section2;PublishedColumn2
Grid No. to plate	1 pF	Section2;PublishedColumn1
Grid No. to plate	0.13 pF	Section2;PublishedColumn2
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	2 pF	Section2;PublishedColumn1
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	11 pF	Section2;PublishedColumn2
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	2 pF	Section2;PublishedColumn1
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	4.6 pF	Section2;PublishedColumn2
PentodeplatetoplateofiriodeNo max	2 pF	Section2;PublishedColumn1
PentodeplatetoplateofiriodeNo max	0.045 pF	Section2;PublishedColumn2
PlateoftriodeNo.ltoplateoftriodeNo. . max,	2 pF	Section2;PublishedColumn1
PlateoftriodeNo.ltoplateoftriodeNo. . max,	0.075 pF	Section2;PublishedColumn2

1971 RCA HB3 BINDER 4 OF 7

Section 3 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) ±	3 V	Section3;PublishedColumn1
Voltage (AC or DC) ±	0.6 V	Section3;PublishedColumn2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current at	6.3 V	Section3
Peak	200 V	Section3
DC component	100 V	Section3
Plate Supply Voltage	200 V	Section3;PublishedColumn1
Grid Voltage	-2 V	Section3
Cathode Resistor	220 ohm	Section3
Plate Resistance (Approx.)	12400 ohm	Section3;PublishedColumn1
Plate Resistance (Approx.)	9400 ohm	Section3;PublishedColumn2
Transconductance	5500 μ S	Section3;PublishedColumn1
Transconductance	4400 μ S	Section3;PublishedColumn2
Plate Current	7 mA	Section3;PublishedColumn1
Plate Current	9.2 mA	Section3;PublishedColumn2
Grid Voltage for plate μ a =	-5.5 V	Section3;PublishedColumn1
Grid Voltage for plate μ a =	-6.5 V	Section3;PublishedColumn2
Plate Supply Voltage	35 V	Section3;PublishedColumn1
Plate Supply Voltage	135 V	Section3;PublishedColumn2
Grid-No. Supply Voltage	135 V	Section3;PublishedColumn1
Cathode Resistor	100 ohm	Section3
Plate Resistance (Approx.)	45000 ohm	Section3
Transconductance	10400 μ S	Section3
Plate Current b	34 mA	Section3;PublishedColumn1
Plate Current b	17 mA	Section3;PublishedColumn2
► Grid-No. Currerit b	13 mA	Section3;PublishedColumn1
► Grid-No. Currerit b	4 mA	Section3;PublishedColumn2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	1.9 pF	Section3
Input: GT to (KTL KT + IS, Kp+G p + 'I S, H)	3 pF	Section3;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	3 pF	Section3;PublishedColumn1
Output: PTL to (KTL KT + IS, Kp+G p+ IS, H)	2.2 pF	Section3;PublishedColumn2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	3.6 pF	Section3
Input: GT to (KT + IS, Kp+G p+ IS, H)	3 pF	Section3;PublishedColumn1
Input: GT to (KT + IS, Kp+G p+ IS, H)	2.4 pF	Section3;PublishedColumn2
Output: PT to (K + IS, Kp+G p+ IS, H)	3 pF	Section3;PublishedColumn1
Output: PT to (K + IS, Kp+G p+ IS, H)	3.8 pF	Section3;PublishedColumn2
Grid No. to plate	1 pF	Section3;PublishedColumn1
Grid No. to plate	0.13 pF	Section3;PublishedColumn2
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	2 pF	Section3;PublishedColumn1
Input: G pto(KT +IS, Kp+G p+IS, G p, H)	11 pF	Section3;PublishedColumn2
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	2 pF	Section3;PublishedColumn1
Output: Pp to (KT + IS, Kp+G p+ IS, G p, H)	4.6 pF	Section3;PublishedColumn2
PentodeplatetoplateofiriodeNo max	2 pF	Section3;PublishedColumn1
PentodeplatetoplateofiriodeNo max	0.045 pF	Section3;PublishedColumn2
PlateoftriodeNo.ltoplateoftriodeNo. . max,	2 pF	Section3;PublishedColumn1
PlateoftriodeNo.ltoplateoftriodeNo. . max,	0.075 pF	Section3;PublishedColumn2