



ELECTRONIC TUBE REFERENCE

13J10

Power - Beam (NOT sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

BEAMPOWER-PENTODE

Duodecar combination tube integrating limiter, discriminator, and audio power-output functions for FM radio and television receivers, including 10.7 MHz discriminator operation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	12
NOMINAL HEATER	13.2 V / 450 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.0065 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	110 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM CATHODE CURRENT	13 mA
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

SECTION2 Beam Power	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.0065 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	275 V
MAXIMUM PLATE DISSIPATION	10 W
MAXIMUM SCREEN DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	13 A
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

Duodecar types used as a combined limiter, discrimi- nator, and audio power-output tube in FM radio and television receivers. Outlines section, 8C; require duodecar 12-contact socket. Types 10Z10, and 13Z10/ 13J10 are identical with type 6Z10/6J10 except for 12BT heater ratings. 6Z10/6J10 10Z10 13Z10/13J10



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DiscriminatorTransconductance	6500 μ S	Section1



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1966 Tung Sol Electronic Tubes 3 of 4

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1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate supply voltage	285 V	Discriminator
Typical grid 2 voltage	100 V	Discriminator
Typical cathode current	9.8 mA	Discriminator
Input signal center frequency	10.7 MHz	Discriminator
Maximum plate voltage	330 V	PromotedValue
Maximum screen voltage	110 V	PromotedValue
Maximum cathode current	13 mA	PromotedValue

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 1 to grid 3 capacitance	0.01 pF	Discriminator

Section 2 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	250 V	ClassA
Typical screen voltage	250 V	ClassA
Typical plate current	35 mA	ClassA
Power output	4.2 W	ClassA
Maximum plate voltage	275 V	PromotedValue
Maximum screen voltage	275 V	PromotedValue
Maximum plate dissipation	10 W	PromotedValue
Maximum screen dissipation	2 W	PromotedValue

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.2 pF	—
Input capacitance	11 pF	—
Output capacitance	7 pF	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	100000 ohm	PromotedValue
Transconductance	0.0065 A/V	PromotedValue



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 5 of 7

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Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC)	6 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Voltage (AC or DC)	3 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Voltage (AC or DC)	0.6 V	Published table value column 3 Inherited from explicitly referenced 6J10.
Current at heater volts =	6.3 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Current at heater volts =	0.95 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Heater negative with respect to cathode	200 V	Published table value Inherited from explicitly referenced 6J10.
Heater positive with respect to cathode	200 V	Published table value Inherited from explicitly referenced 6J10.
Grid No.1 to plate	0.2 pF	Published table value Inherited from explicitly referenced 6J10.
Input: G	11 K	Published table value Inherited from explicitly referenced 6J10.
Output: PB to (K D+G	7 K	Published table value Inherited from explicitly referenced 6J10.
Grid No	1 pF	Published table value column 1 Inherited from explicitly referenced 6J10.
Grid No	0.01 pF	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Supply Voltage	330 V	Published table value Inherited from explicitly referenced 6J10.
Grid-No	2 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Grid-No	110 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Cathode Current	13 mA	Published table value Inherited from explicitly referenced 6J10.
Plate Supply Voltage	270 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Plate Supply Voltage	85 V	Published table value column 2 Inherited from explicitly referenced 6J10.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Supply Voltage	285 V	Published table value column 3 Inherited from explicitly referenced 6J10.
Plate Voltage	62 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Plate Voltage	121 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Voltage	122 V	Published table value column 3 Inherited from explicitly referenced 6J10.
Grid-No	100 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Grid-No	55 V	Published table value column 3 Inherited from explicitly referenced 6J10.
Grid-No	100 V	Published table value column 4 Inherited from explicitly referenced 6J10.
Peak AF Output Voltage	16.8 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Peak AF Output Voltage	6 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Peak AF Output Voltage	16.6 V	Published table value column 3 Inherited from explicitly referenced 6J10.
Plate Current	0.44 mA	Published table value column 1 Inherited from explicitly referenced 6J10.
Plate Current	0.25 mA	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Current	0.49 mA	Published table value column 3 Inherited from explicitly referenced 6J10.
Grid-No	2 mA	Published table value column 1 Inherited from explicitly referenced 6J10.
Grid-No	10 mA	Published table value column 2 Inherited from explicitly referenced 6J10.
Grid-No	4.1 mA	Published table value column 3 Inherited from explicitly referenced 6J10.
Grid-No	9.8 mA	Published table value column 4 Inherited from explicitly referenced 6J10.
Plate Load Resistor	0.33 MΩ	Published table value column 1 Inherited from explicitly referenced 6J10.
Plate Load Resistor	0.085 MΩ	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Load Resistor	0.33 MΩ	Published table value column 3 Inherited from explicitly referenced 6J10.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	275 V	Published table value Inherited from explicitly referenced 6J10.
Grid-No	275 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Dissipation	10 W	Published table value Inherited from explicitly referenced 6J10.
Grid-No	2 W	Published table value column 1 Inherited from explicitly referenced 6J10.
Grid-No	2 W	Published table value column 2 Inherited from explicitly referenced 6J10.
Plate Voltage	250 V	Published table value Inherited from explicitly referenced 6J10.
Grid-No	250 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Grid-No.1 (Control-Grid) Voltage	-8 V	Published table value Inherited from explicitly referenced 6J10.
Peak AF Grid-No	1 V	Published table value column 1 Inherited from explicitly referenced 6J10.
Peak AF Grid-No	8 V	Published table value column 2 Inherited from explicitly referenced 6J10.
Zero-Signal Plate Current	35 mA	Published table value Inherited from explicitly referenced 6J10.
Max.-Signal Plate Current	39 mA	Published table value Inherited from explicitly referenced 6J10.
Zero-Signal Grid No	2 mA	Published table value column 1 Inherited from explicitly referenced 6J10.
Zero-Signal Grid No	2.5 mA	Published table value column 2 Inherited from explicitly referenced 6J10.
Max.-Signal Grid No	2 mA	Published table value column 1 Inherited from explicitly referenced 6J10.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Resistances	200 Ω	Published table value column 1 Inherited from explicitly referenced 6J10.
Resistances	-400 Ω	Published table value column 2 Inherited from explicitly referenced 6J10.
Resistances	200 Ω	Published table value column 3 Inherited from explicitly referenced 6J10.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Resistances	-400 Ω	Published table value column 4 Inherited from explicitly referenced 6J10.



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1975 RCA RC30

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

1975 RCA RC30

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc)	13.2 volts	Published value from supplied target entry
Heater Current	0.45 ampere	Published value from supplied target entry
Heater Warm-up Time (Average)	11 seconds	Published value from supplied target entry
Plate Supply Voltage	330 volts	Published value from supplied target entry
Grid-No	330 volts	Published value from supplied target entry
Grid-No.1 Voltage, Peak positive value	60 volts	Published value from supplied target entry
Average Cathode Current	13 mA	Published value from supplied target entry
Plate Voltage	135 volts	Published value from supplied target entry
Grid-No	0 volts	Published value from supplied target entry
Grid-No	280 volts	Published value from supplied target entry
Grid-No	75 volts	Published value from supplied target entry
Grid No	0 volts	Published value from supplied target entry
Grid-No	33	Published value from supplied target entry
Transconductance, Grid No.1 to Plate	360	Published value from supplied target entry
Transconductance, Grid No	700	Published value from supplied target entry
Average Plate Current	5	Published value from supplied target entry
Grid-No	4.5 mA	Published value from supplied target entry
Grid No	3	Published value from supplied target entry

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No	275 volts	Published value from supplied target entry
Plate Dissipation	10 watts	Published value from supplied target entry
Grid-No	2 watts	Published value from supplied target entry
Plate Voltage	250 volts	Published value from supplied target entry
Grid-No	250 volts	Published value from supplied target entry
Grid-No.1 (Control-Grid) Voltage	-8 volts	Published value from supplied target entry
Peak AF Grid-No.1 Voltage	8 volts	Published value from supplied target entry
Zero-Signal Plate Current	35 mA	Published value from supplied target entry
Zero-Signal Grid-No	3 mA	Published value from supplied target entry
Plate Resistance (Approx.)	0.1 megohm	Published value from supplied target entry
Transconductance G5	0	Published value from supplied target entry
Load Resistance	5000 ohms	Published value from supplied target entry
Grid-No	1	Published value from supplied target entry

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate to Cathode, Heater, Grid No	7.5 pF	Published value from supplied target entry

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum-Signal Plate Current	39 mA	Published value from supplied target entry
Maximum-Signal Grid-No	13 mA	Published value from supplied target entry

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