



ELECTRONIC TUBE REFERENCE

6AL11

Power - Beam (NOT sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

BEAMPOWER-PENTODE

Duodecar combination tube containing a beam-power section and sharp-cutoff pentode for television FM detection and audio-frequency output amplification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12BU	BASE PINS	12
NOMINAL HEATER	6.3 V / 900 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

12BU - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	–	H – Heater	CONNECTED
PIN2	B	K – Cathode	CONNECTED
PIN3	B	G1 – Control Grid	CONNECTED
PIN4	B	G3 – Suppressor Grid	CONNECTED
PIN5	–	IS – Internal Screen	CONNECTED
PIN6	B	P – Plate (Anode)	CONNECTED
PIN7	B	G2 – Screen Grid	CONNECTED
PIN8	A	G1 – Control Grid	CONNECTED
PIN9	A	G3 – Suppressor Grid	CONNECTED
PIN9	A	K – Cathode	CONNECTED
PIN10	A	G2 – Screen Grid	CONNECTED
PIN11	A	P – Plate (Anode)	CONNECTED
PIN12	–	H – Heater	CONNECTED

SECTION RATINGS

SECTION1 Beam Power	
MAXIMUM PLATE VOLTAGE	275 V
MAXIMUM SCREEN VOLTAGE	275 V
MAXIMUM PLATE DISSIPATION	10 W
<i>Power pentode section.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.0065 S
MAXIMUM PLATE VOLTAGE	30 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	1.7 W
<i>Dual-control detector pentode section.</i>	

Duodecar combination beam-power tube and sharp-cutoff pentode used for FM detection and audio-frequency output in television receivers.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	—
Grid2 Voltage	250 V	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3 9.8	12.6 V	Published in approved 6AL11 target entry; Section1
Heater Current 0.9 0.6	450 mA	Published in approved 6AL11 target entry; Section1
Heater Warm-up Time (Average) – 11	11 seconds	Published in approved 6AL11 target entry; Section1
Pentode Plate to Beam Power Plate	0.12 pF	Published in approved 6AL11 target entry; Section1
Plate Voltage	275 V	Published in approved 6AL11 target entry; Section1
Grid-No.2 (Screen-Grid) Voltage	275 V	Published in approved 6AL11 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation	10 W	Published in approved 6AL11 target entry; Section1
Grid-No.2 Input	2 W	Published in approved 6AL11 target entry; Section1
Plate Voltage	250 V	Published in approved 6AL11 target entry; Section1
Grid-No.2 Voltage	250 V	Published in approved 6AL11 target entry; Section1
Grid-No.1 (Control-Grid) Voltage	-8 V	Published in approved 6AL11 target entry; Section1
Peak AF Grid-No.1 Voltage	8 V	Published in approved 6AL11 target entry; Section1
Zero-Signal Plate Current	35 mA	Published in approved 6AL11 target entry; Section1
Maximum-Signal Plate Current	39 mA	Published in approved 6AL11 target entry; Section1
Zero-Signal Grid-No.2 Current	2.5 mA	Published in approved 6AL11 target entry; Section1
Maximum-Signal Grid-No.2 Current	7 mA	Published in approved 6AL11 target entry; Section1
Plate Resistance (Approx.)	0.1 MΩ	Published in approved 6AL11 target entry; Section1
Transconductance	6500 μS	Published in approved 6AL11 target entry; Section1
Load Resistance	5000 Ω	Published in approved 6AL11 target entry; Section1
Total Harmonic Distortion	10 %	Published in approved 6AL11 target entry; Section1
Maximum-Signal Power Output 4	-2 W	Published in approved 6AL11 target entry; Section1
For fixed-bias operation	0.25 MΩ	Published in approved 6AL11 target entry; Section1
For cathode-bias operation	0.5 MΩ	Published in approved 6AL11 target entry; Section1
Plate Supply Voltage	150 V	Published in approved 6AL11 target entry; Section1
Grid-No.3 (Suppressor-Grid) Voltage	0 V	Published in approved 6AL11 target entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	100 V	Published in approved 6AL11 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode-Bias Resistor	560 Ω	Published in approved 6AL11 target entry; Section1
Plate Resistance (Approx.)	0.15 MΩ	Published in approved 6AL11 target entry; Section1
Plate Voltage	330 V	Published in approved 6AL11 target entry; Section1
Grid-No.3 Voltage	28 V	Published in approved 6AL11 target entry; Section1
Grid-No.2 Supply Voltage	330 V	Published in approved 6AL11 target entry; Section1
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 6AL11 target entry; Section1
Plate Dissipation 1	-7 W	Published in approved 6AL11 target entry; Section1
For grid-No.2 voltages up to	165 V	Published in approved 6AL11 target entry; Section1
For grid-No.2 voltages up to 165 volts	1.1 W	Published in approved 6AL11 target entry; Section1
For grid-No.2 voltages between 165 and	330 V	Published in approved 6AL11 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.26 pF	Published in approved 6AL11 target entry; Section1
and Internal Shield	11 pF	Published in approved 6AL11 target entry; Section1
and Internal Shield	12 pF	Published in approved 6AL11 target entry; Section1
Grid No.1 to Plate	0.034 pF	Published in approved 6AL11 target entry; Section1
Grid No.3 to Plate	3.2 pF	Published in approved 6AL11 target entry; Section1
and Internal Shield	6.5 pF	Published in approved 6AL11 target entry; Section1
Plate, and Internal Shield	7.5 pF	Published in approved 6AL11 target entry; Section1
Grid No.1 to Grid No.3	0.24 pF	Published in approved 6AL11 target entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance, Grid No.1 to Plate	1000 μS	Published in approved 6AL11 target entry; Section1
Plate Current	1.3 mA	Published in approved 6AL11 target entry; Section1
Grid-No.2 Current	2.1 mA	Published in approved 6AL11 target entry; Section1

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3 9.8	12.6 V	Published in approved 6AL11 target entry; Section2
Heater Current 0.9 0.6	450 mA	Published in approved 6AL11 target entry; Section2
Heater Warm-up Time (Average) – 11	11 seconds	Published in approved 6AL11 target entry; Section2
Pentode Plate to Beam Power Plate	0.12 pF	Published in approved 6AL11 target entry; Section2
Plate Voltage	275 V	Published in approved 6AL11 target entry; Section2
Grid-No.2 (Screen-Grid) Voltage	275 V	Published in approved 6AL11 target entry; Section2
Plate Dissipation	10 W	Published in approved 6AL11 target entry; Section2
Grid-No.2 Input	2 W	Published in approved 6AL11 target entry; Section2
Plate Voltage	250 V	Published in approved 6AL11 target entry; Section2
Grid-No.2 Voltage	250 V	Published in approved 6AL11 target entry; Section2
Grid-No.1 (Control-Grid) Voltage	-8 V	Published in approved 6AL11 target entry; Section2
Peak AF Grid-No.1 Voltage	8 V	Published in approved 6AL11 target entry; Section2
Zero-Signal Plate Current	35 mA	Published in approved 6AL11 target entry; Section2
Maximum-Signal Plate Current	39 mA	Published in approved 6AL11 target entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Zero-Signal Grid-No.2 Current	2.5 mA	Published in approved 6AL11 target entry; Section2
Maximum-Signal Grid-No.2 Current	7 mA	Published in approved 6AL11 target entry; Section2
Plate Resistance (Approx.)	0.1 MΩ	Published in approved 6AL11 target entry; Section2
Transconductance	6500 μS	Published in approved 6AL11 target entry; Section2
Load Resistance	5000 Ω	Published in approved 6AL11 target entry; Section2
Total Harmonic Distortion	10 %	Published in approved 6AL11 target entry; Section2
Maximum-Signal Power Output 4	-2 W	Published in approved 6AL11 target entry; Section2
For fixed-bias operation	0.25 MΩ	Published in approved 6AL11 target entry; Section2
For cathode-bias operation	0.5 MΩ	Published in approved 6AL11 target entry; Section2
Plate Supply Voltage	150 V	Published in approved 6AL11 target entry; Section2
Grid-No.3 (Suppressor-Grid) Voltage	0 V	Published in approved 6AL11 target entry; Section2
Grid-No.2 (Screen-Grid) Supply Voltage	100 V	Published in approved 6AL11 target entry; Section2
Cathode-Bias Resistor	560 Ω	Published in approved 6AL11 target entry; Section2
Plate Resistance (Approx.)	0.15 MΩ	Published in approved 6AL11 target entry; Section2
Plate Voltage	330 V	Published in approved 6AL11 target entry; Section2
Grid-No.3 Voltage	28 V	Published in approved 6AL11 target entry; Section2
Grid-No.2 Supply Voltage	330 V	Published in approved 6AL11 target entry; Section2
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 6AL11 target entry; Section2
Plate Dissipation 1	-7 W	Published in approved 6AL11 target entry; Section2
For grid-No.2 voltages up to	165 V	Published in approved 6AL11 target entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
For grid-No.2 voltages up to 165 volts	1.1 W	Published in approved 6AL11 target entry; Section2
For grid-No.2 voltages between 165 and	330 V	Published in approved 6AL11 target entry; Section2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.26 pF	Published in approved 6AL11 target entry; Section2
and Internal Shield	11 pF	Published in approved 6AL11 target entry; Section2
and Internal Shield	12 pF	Published in approved 6AL11 target entry; Section2
Grid No.1 to Plate	0.034 pF	Published in approved 6AL11 target entry; Section2
Grid No.3 to Plate	3.2 pF	Published in approved 6AL11 target entry; Section2
and Internal Shield	6.5 pF	Published in approved 6AL11 target entry; Section2
Plate, and Internal Shield	7.5 pF	Published in approved 6AL11 target entry; Section2
Grid No.1 to Grid No.3	0.24 pF	Published in approved 6AL11 target entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance, Grid No.1 to Plate	1000 μS	Published in approved 6AL11 target entry; Section2
Plate Current	1.3 mA	Published in approved 6AL11 target entry; Section2
Grid-No.2 Current	2.1 mA	Published in approved 6AL11 target entry; Section2

TUBE TINKER

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