

ELECTRONIC TUBE REFERENCE

6BN8

Voltage - Triode (with diode, heptode or hexode) electronic tube

CONSOLIDATED TECHNICAL DATA

3 SECTIONS
CONSTRUCTION
DIODE-DIODE-TRIODE

Multi-section television tube combining twin diodes and high-mu twin triodes for burst, audio and oscillator functions, detector/discriminator service, and horizontal automatic-frequency control.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9ER	BASE PINS	9
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9ER - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	C	P – Plate (Anode)	CONNECTED
PIN2	C	K – Cathode	CONNECTED
PIN3	B	K – Cathode	CONNECTED
PIN4	–	H – Heater	CONNECTED
PIN5	–	H – Heater	CONNECTED
PIN6	B	P – Plate (Anode)	CONNECTED
PIN7	A	P – Plate (Anode)	CONNECTED
PIN8	A	G1 – Control Grid	CONNECTED
PIN9	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Diode	
MAXIMUM PLATE VOLTAGE	125 V
NOMINAL OUTPUT CURRENT	9 mA
PEAK FORWARD CURRENT	54 A
FORWARD VOLTAGE DROP	2.6 V
<i>Representative row for two diode sections.</i>	

SECTION2 Triode	
PLATE RESISTANCE	28000 Ω
TRANSCONDUCTANCE	0.0025 S
AMPLIFICATION FACTOR	70
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	1.74 W
<i>High-mu triode plus two separate high-perveance diodes for monochrome and color television service.</i>	

SECTION3 Diode	
<i>No fixed ratings recorded.</i>	
<i>Diode section.</i>	

Twin-diode, high-mu twin-triode tube for television burst/audio/oscillator, detector, discriminator, and horizontal-AFC service.



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 1 · Diode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AverageCurrentAt40VDC	50 mA	EachPlate

1961 TUNG SOL

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	ClassA
Heater Warmup Time	11 s	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	1.6 mA	ClassA



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 1 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 1 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum peak diode current	—54 mA	Diode1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum continuous diode current	—1 mA	Diode1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average diode current at 10 V	4 mA	Diode1

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 2 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	2.5 pF	—
Triode input capacitance	3.6 pF	—
Triode output capacitance	0.25 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Plate current	1.5 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	75	—
Plate resistance	21 k0hm	—

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 3 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum peak diode current	—54 mA	Diode2
Maximum continuous diode current	—1 mA	Diode2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average diode current at 10 V	4 mA	Diode2

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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3	8.4 V	Published in approved 8BN8 target datasheet entry; Section2
Heater Current 0.6	450 mA	Published in approved 8BN8 target datasheet entry; Section2
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 8BN8 target datasheet entry; Section2
Plate Voltage	330 V	Published in approved 8BN8 target datasheet entry; Section2
Grid Voltage -1	-3 V	Published in approved 8BN8 target datasheet entry; Section2
Plate Resistance (Approx.) 21000	28000 Ω	Published in approved 8BN8 target datasheet entry; Section2
3600	2600 μS	Published in approved 8BN8 target datasheet entry; Section2
Plate Current 1.6	1.6 mA	Published in approved 8BN8 target datasheet entry; Section2
Grid Voltage (Approx.) for plate current of 10 /iA -2.6	-5.5 V	Published in approved 8BN8 target datasheet entry; Section2
Peak	54 mA	Published in approved 8BN8 target datasheet entry; Section2
Heater Voltage	6.3 V	Published in approved 8BN8 target datasheet entry; Section2
Heater Current	800 mA	Published in approved 8BN8 target datasheet entry; Section2
Grid-No.2 (Screen-Grid) Supply Voltage	330 V	Published in approved 8BN8 target datasheet entry; Section2
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 8BN8 target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation	3.1 W	Published in approved 8BN8 target datasheet entry; Section2
Plate Voltage	125 V	Published in approved 8BN8 target datasheet entry; Section2
Grid-No.2 Voltage	125 V	Published in approved 8BN8 target datasheet entry; Section2
Cathode-Bias Resistor	56 Ω	Published in approved 8BN8 target datasheet entry; Section2
Plate Resistance (Approx.)	0.2 MΩ	Published in approved 8BN8 target datasheet entry; Section2
Grid-No.1-Circuit Resistance, for cathode-bias operation	0.25 MΩ	Published in approved 8BN8 target datasheet entry; Section2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode Grid to Triode Plate	2.6 pF	Published in approved 8BN8 target datasheet entry; Section2
Triode Grid to Cathode and Heater	3.6 pF	Published in approved 8BN8 target datasheet entry; Section2
Triode Plate to Cathode and Heater	0.26 pF	Published in approved 8BN8 target datasheet entry; Section2
Diode Cathode to All Other Electrodes (Each Diode Unit)	5 pF	Published in approved 8BN8 target datasheet entry; Section2
Diode Plate to Diode Cathode and Heater (Each Diode Unit)	1.9 pF	Published in approved 8BN8 target datasheet entry; Section2
Diode Cathode to Diode Plate and Heater (Each Diode Unit)	4.8 pF	Published in approved 8BN8 target datasheet entry; Section2
Diode Plate to All Other Electrodes (Each Diode Unit)	3 pF	Published in approved 8BN8 target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	13000 μS	Published in approved 8BN8 target datasheet entry; Section2
Plate Current	11 mA	Published in approved 8BN8 target datasheet entry; Section2
Grid-No.2 Current	3.8 mA	Published in approved 8BN8 target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 Voltage (Approx.) for plate current of 20 /iA	3 V	Published in approved 8BN8 target datasheet entry; Section2

1975 RCA RC30

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3	8.4 V	Published in approved 8BN8 target datasheet entry; Section1
Heater Current 0.6	450 mA	Published in approved 8BN8 target datasheet entry; Section1
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 8BN8 target datasheet entry; Section1
Plate Voltage	330 V	Published in approved 8BN8 target datasheet entry; Section1
Grid Voltage -1	-3 V	Published in approved 8BN8 target datasheet entry; Section1
Plate Resistance (Approx.) 21000	28000 Ω	Published in approved 8BN8 target datasheet entry; Section1
3600	2600 μS	Published in approved 8BN8 target datasheet entry; Section1
Plate Current 1.6	1.6 mA	Published in approved 8BN8 target datasheet entry; Section1
Grid Voltage (Approx.) for plate current of 10 /iA -2.6	-5.5 V	Published in approved 8BN8 target datasheet entry; Section1
Peak	54 mA	Published in approved 8BN8 target datasheet entry; Section1
Heater Voltage	6.3 V	Published in approved 8BN8 target datasheet entry; Section1
Heater Current	800 mA	Published in approved 8BN8 target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	330 V	Published in approved 8BN8 target datasheet entry; Section1
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 8BN8 target datasheet entry; Section1
Plate Dissipation	3.1 W	Published in approved 8BN8 target datasheet entry; Section1
Plate Voltage	125 V	Published in approved 8BN8 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Voltage	125 V	Published in approved 8BN8 target datasheet entry; Section1
Cathode-Bias Resistor	56 Ω	Published in approved 8BN8 target datasheet entry; Section1
Plate Resistance (Approx.)	0.2 M Ω	Published in approved 8BN8 target datasheet entry; Section1
Grid-No.1-Circuit Resistance, for cathode-bias operation	0.25 M Ω	Published in approved 8BN8 target datasheet entry; Section1

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Triode Plate to Cathode and Heater	0.26 pF	Published in approved 8BN8 target datasheet entry; Section1
Diode Cathode to All Other Electrodes (Each Diode Unit)	5 pF	Published in approved 8BN8 target datasheet entry; Section1
Diode Plate to Diode Cathode and Heater (Each Diode Unit)	1.9 pF	Published in approved 8BN8 target datasheet entry; Section1
Diode Cathode to Diode Plate and Heater (Each Diode Unit)	4.8 pF	Published in approved 8BN8 target datasheet entry; Section1
Diode Plate to All Other Electrodes (Each Diode Unit)	3 pF	Published in approved 8BN8 target datasheet entry; Section1

CHARACTERISTIC		
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Plate Current	11 mA	Published in approved 8BN8 target datasheet entry; Section1
Grid-No.2 Current	3.8 mA	Published in approved 8BN8 target datasheet entry; Section1
Grid-No.1 Voltage (Approx.) for plate current of 20 /iA	3 V	Published in approved 8BN8 target datasheet entry; Section1

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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