

ELECTRONIC TUBE REFERENCE

6BN6

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TETRODE

Gated-beam tube combining limiter, discriminator, and audio-voltage amplification for television intercarrier-sound and FM receiver circuits.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7DF	BASE PINS	7
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7DF - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Tetrode	
PLATE RESISTANCE	5400 Ω
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	110 V
MAXIMUM CATHODE CURRENT	13 mA
<i>Gated-beam discriminator.</i>	

Beam tube used as a combined limiter, discriminator, and audio-voltage amplifier in intercarrier television and FM receivers.



SOURCE OPERATING CONDITIONS

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195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Tetrode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Signal input voltage	1.25 V	RMS

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	285 V	FMLimiterDiscriminator
Screen voltage	100 V	FMLimiterDiscriminator
Plate current	0.45 mA	FMLimiterDiscriminator
Screen current	9.8 mA	FMLimiterDiscriminator
Grid resistor	330000 Ω	FMLimiterDiscriminator



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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1961 TUNG SOL

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
InputSignalCenterFrequency	10.7 MHz	LimiterDiscriminator
FrequencyDeviation	75 kHz	LimiterDiscriminator

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PeakAudioOutputVoltage	16.8 V	LimiterDiscriminator;270V supply


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1965 Sylvania Electronic Tubes Vol3

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1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Tetrode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate supply voltage	300 V	—
Maximum accelerator voltage	100 V	—
Maximum positive limiter-grid voltage	55 V	—
Maximum total cathode current	11.5 mA	—
Intermediate frequency	10.7 MHz	—
Peak audio output voltage	16.8 V	—
Total harmonic distortion	1.8 %	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1966 Tung Sol Electronic Tubes 1 of 4

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1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 1 · Tetrode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 1 capacitance	4.2 pF	—
Grid 5 capacitance	3.3 pF	—
Grid1-to-grid3 capacitance	—0.004 pF	Maximum

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input-signal center frequency	10.7 MHz	LimiterDiscriminator
Plate supply voltage	285 V	LimiterDiscriminator
Plate voltage	122 V	LimiterDiscriminator
Accelerator voltage	100 V	LimiterDiscriminator
Cathode-bias resistor	200–400 ohm	LimiterDiscriminator



SOURCE OPERATING CONDITIONS

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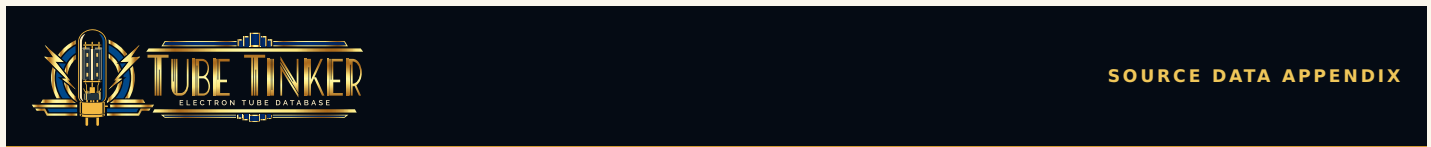
1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Supply Voltage	330 V	—
MaximumAcceleratorVoltage	110 V	—
Typical Plate Voltage	122 V	LimiterDiscriminator



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 · Tetrode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Voltage (AC or DC) – published value 2	10 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current at 6.3 volts – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current at 6.3 volts – published value 2	0.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
grid No.2, and heater	4.2	Published datasheet value; multiple values represent separate source-table limits or conditions.
grid No.1, and heater	3.3	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Cathode, – published value 1	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Cathode, – published value 2	4	Published datasheet value; multiple values represent separate source-table limits or conditions.
Internal	5	Published datasheet value; multiple values represent separate source-table limits or conditions.
Shields	6	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 2 -Grid No.1 – published value 1	2	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 2 -Grid No.1 – published value 2	7	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 3 –Heater	3	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Supply Voltage – published value 1	270 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Supply Voltage – published value 2	85 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Supply Voltage – published value 3	285 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 1	121 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 2	63 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 3	122 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Voltage – published value 1	100 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Voltage – published value 2	55 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Voltage – published value 3	100 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Resistance* – published value 1	200 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Resistance* – published value 2	400 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Resistance* – published value 3	200 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Resistance* – published value 4	400 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Peak AF Output Voltage – published value 1	16.8 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Peak AF Output Voltage – published value 2	6 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Peak AF Output Voltage – published value 3	16.6 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 1	0.44 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 2	0.25 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 3	0.49 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Current – published value 1	10 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Current – published value 2	4.1 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Current – published value 3	9.8 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Load Resistor – published value 1	0.33 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Load Resistor – published value 2	0.085 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Load Resistor – published value 3	0.33 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to grid No 3 – published value 1	3 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid No.1 to grid No 3 – published value 2	0 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid No.1 to grid No 3 – published value 3	4 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE SUPPLY VOLTAGE	330 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID-No.2 (ACCELERATOR-GRID) VOLTAGE	110 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
CATHODE CURRENT	13 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.



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 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	9 mA	Published in approved 6KS6 target datasheet entry; Section1
Grid-Circuit Resistance	0.5 MΩ	Published in approved 6KS6 target datasheet entry; Section1
Heater Voltage (ac/dc) 3.15 4.2 6.3	12.6 V	Published in approved 6KS6 target datasheet entry; Section1
Heater Current 0.6 0.45 0.3	150 mA	Published in approved 6KS6 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
age) 11	11 seconds	Published in approved 6KS6 target datasheet entry; Section1
Plate-Supply Voltage	330 V	Published in approved 6KS6 target datasheet entry; Section1
Grid-No.2 Voltage	110 V	Published in approved 6KS6 target datasheet entry; Section1
Grid-No. 1 Voltage, Positive peak value	60 V	Published in approved 6KS6 target datasheet entry; Section1
Cathode Current	13 mA	Published in approved 6KS6 target datasheet entry; Section1
Heater Voltage (ac/dc) 6.3	8.4 V	Published in approved 6KS6 target datasheet entry; Section1
Heater Current 0.6	450 mA	Published in approved 6KS6 target datasheet entry; Section1
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 6KS6 target datasheet entry; Section1
Plate Voltage	330 V	Published in approved 6KS6 target datasheet entry; Section1
Grid Voltage -1	-3 V	Published in approved 6KS6 target datasheet entry; Section1
Plate Resistance (Approx.) 21000	28000 Ω	Published in approved 6KS6 target datasheet entry; Section1
3600	2600 μS	Published in approved 6KS6 target datasheet entry; Section1
Plate Current 1.6	1.6 mA	Published in approved 6KS6 target datasheet entry; Section1
Grid Voltage (Approx.) for plate current of 10 /iA -2.6	-5.5 V	Published in approved 6KS6 target datasheet entry; Section1
Peak	54 mA	Published in approved 6KS6 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Internal Shield	3.3 pF	Published in approved 6KS6 target datasheet entry; Section1
Triode Grid to Triode Plate	2.6 pF	Published in approved 6KS6 target datasheet entry; Section1
Triode Grid to Cathode and Heater	3.6 pF	Published in approved 6KS6 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode Plate to Cathode and Heater	0.26 pF	Published in approved 6KS6 target datasheet entry; Section1
Diode Cathode to All Other Electrodes (Each Diode Unit)	5 pF	Published in approved 6KS6 target datasheet entry; Section1
Diode Plate to Diode Cathode and Heater (Each Diode Unit)	1.9 pF	Published in approved 6KS6 target datasheet entry; Section1
Diode Cathode to Diode Plate and Heater (Each Diode Unit)	4.8 pF	Published in approved 6KS6 target datasheet entry; Section1
Diode Plate to All Other Electrodes (Each Diode Unit)	3 pF	Published in approved 6KS6 target datasheet entry; Section1

TUBE TINKER

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