



ELECTRONIC TUBE REFERENCE

6N8

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

3 SECTIONS

CONSTRUCTION

DIODE-DIODE-PENTODE

Double-diode pentode combining detector and control-voltage rectification with high-resistance amplification. Paired diodes support detector, discriminator, or automatic-gain-control functions while the pentode supplies substantial gain.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9T	BASE PINS	9
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	1400000 Ω
TRANSCONDUCTANCE	0.0022 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	2 W
MAXIMUM SCREEN DISSIPATION	0.3 W
MAXIMUM CATHODE CURRENT	10 mA
<i>Published ratings/characteristics promoted where clearly stated; repeated identical sections compressed where applicable.</i>	

SECTION2 Diode	
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM CATHODE CURRENT	0.8 mA
PEAK INVERSE VOLTAGE	350 V
NOMINAL OUTPUT CURRENT	0.8 mA
<i>Promoted from printed maximum-rating/characteristic columns; additional published operating points and capacitances retained as parameters.</i>	

SECTION3 Diode	
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM CATHODE CURRENT	0.8 mA
NOMINAL OUTPUT CURRENT	0.8 mA
<i>Promoted values and additional parameters were taken from the supplied Ferranti datasheet tables.</i>	

Dual-diode pentode for detection and RF or IF amplification; source also designates 6N8.

SOURCE OPERATING CONDITIONS

1953 RFT Rundfunk Technik

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

1953 RFT RUNDFUNK TECHNIK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Screen Dissipation	0.3 W	—

1953 RFT RUNDFUNK TECHNIK

Section 2 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	300 mA	Published nominal value
Transconductance	2200 μ S	Published operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	1.7 W	Published maximum rating

1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cutoff characteristic	Variable-mu	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF / IF amplifier	—

1958 BRIMAR RADIO VALVE NO 7

Section 2 · Diode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Signal detection	—

[SOURCE DATA APPENDIX](#)

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA
Screen voltage	85 V	ClassA
Cathode resistor	295 Ω	ClassA
Plate current	5 mA	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen current	1.75 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	1600000 Ω	ClassA
Transconductance	2200 μS	ClassA
Amplification factor	35	ClassA



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Ferranti Technical Handbook

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

1961 FERRANTI TECHNICAL HANDBOOK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	PentodeSection
Control-grid voltage	-2 V	PentodeSection
Plate current	5 mA	PentodeSection
Screen-grid current	1.75 mA	PentodeSection

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2200 μS	PentodeSection
Plate resistance	1500000 Ω	PentodeSection
Screen-to-control-grid amplification factor	18 ratio	PentodeSection
Control-grid voltage for $g_m=22\mu\text{S}$	-41.5 V	PentodeSection

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	4 pF	PentodeSection

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output capacitance	4.9 pF	PentodeSection
Grid-to-plate capacitance maximum	0.0025 pF	PentodeSection

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode current maximum	0.8 mA	Diode1
Peak diode plate voltage	200 V	Diode1

1961 FERRANTI TECHNICAL HANDBOOK

Section 3 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode current maximum	0.8 mA	Diode2
Peak diode plate voltage	200 V	Diode2



SOURCE OPERATING CONDITIONS

1968 Mazda Belvu

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

1968 MAZDA BELVU

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF_IF_Amplifier text	—

1968 MAZDA BELVU

Section 2 · Diode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Detector text	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1999 Philips 0-D

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

1999 PHILIPS 0-D

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—
Plate voltage (without current)	550 volts	PublishedLine: Plate voltage (without current) 550 volts
Plate dissipation	2 watts	PublishedLine: Plate dissipation 2 watts
Screen grid voltage (without current)	550 volts	PublishedLine: Screen grid voltage (without current) 550 volts
Screen grid voltage (plate current)	5 ma	PublishedLine: Screen grid voltage (plate current = 5 ma) 125 volts
Screen grid dissipation	0.3 watts	PublishedLine: Screen grid dissipation 0.3 watts
cathode	3 megohms	PublishedLine: ' cathode 3 megohms 1)
Voltage between heater and cathode	50 volts	PublishedLine: Voltage between heater and cathode 50 volts
Plate voltage (weak value)	200 volts	PublishedLine: Plate voltage (weak value) 200 volts
Plate voltage at plate current	-1.3 volts	PublishedLine: Plate voltage at plate current = +0.3 ua -1.3 volts
Voltage between heater and cathode	50 volts	PublishedLine: Voltage between heater and cathode 50 volts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	250 V	Section1
Pentode plate dissipation	2 W	Section1
Pentode screen voltage	250 V	Section1
Pentode screen dissipation	0.3 W	Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode cathode current	10 mA	Section1
Plate and supply voltage	250 volts	PublishedLine: Plate and supply voltage 250 volts
Grid No	0 volts	PublishedLine: Grid No.3 vvoltage 0} volts
Screen grid series resistor	95000 ohms	PublishedLine: Screen grid series resistor 95,000 ohms
Cathode resistor	225 ohms	PublishedLine: Cathode resistor 225 ohms
Grid No	-41.5 volts	PublishedLine: Grid No.1 voltage 22 -41.5' volts
Screen grid voltage	250 volts	PublishedLine: Screen grid voltage 85 250 volts
Plate current	5 amps	PublishedLine: Plate current 5 - milli-amps
Screen grid current	1.75 amps	PublishedLine: Screen grid current 1,75 - milli.-amps

1999 PHILIPS 0-D

Section 2 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode peak plate voltage	200 V	Section2 Section3

TUBE TINKER

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