



ELECTRONIC TUBE REFERENCE

3S4

Power - Pentode Single (NOT beam) (under 10W) electronic tube

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
PENTODE

Directly heated output pentode, co-designated DL92, designed for low-frequency power amplification. Its low-power filament makes it suitable for portable battery receiver output stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BA	BASE PINS	7
NOMINAL HEATER	2.8 V / 50 mA	PARALLEL HEATER	1.4 V / 100 mA
HEATING	Direct	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BA - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – F	–	F – Filament	CONNECTED
PIN2 – P	A	P – Plate (Anode)	CONNECTED
PIN3 – G1	A	G1 – Control Grid	CONNECTED
PIN4 – G2	A	G2 – Screen Grid	CONNECTED
PIN5 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN5 – FCT	–	FCT – Filament Center Tap	CONNECTED
PIN6 – P	A	P – Plate (Anode)	CONNECTED
PIN7 – F	–	F – Filament	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.001575 S
MAXIMUM PLATE VOLTAGE	90 V
MAXIMUM SCREEN VOLTAGE	67.5 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	5.5 mA
<i>Published promoted fields populated by semantic headings; identical repeated sections compressed.</i>	

Directly heated output pentode for low-frequency power amplification; co-designated DL92.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1948 Brimar Radio Valve Manual

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

1948 BRIMAR RADIO VALVE MANUAL

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cathode Current No Signal	9 mA	ParallelFilament
Maximum Cathode Current Maximum Signal	11 mA	ParallelFilament
Plate Voltage	67.5 V	ParallelFilament
Plate Voltage	90 V	ParallelFilament
Screen Voltage	67.5 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1550 μS	67.5V plate, parallel filament
Transconductance	1575 μS	90V plate, parallel filament



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	100000 ohm	—
Transconductance	1575 μS	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	90 V	—
Maximum Screen Voltage	67.5 V	—
Maximum Cathode Current	12 mA	—
Plate Voltage	90 V	ClassA
Screen Voltage	67.5 V	ClassA
Maximum Signal Power Output	270 mW	ClassA; parallel filament



SOURCE OPERATING CONDITIONS

1955 Marconi

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

1955 MARCONI

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Series filament voltage	2.8 V	—
Series filament current	50 mA	—
Parallel filament voltage	1.4 V	—
Parallel filament current	100 mA	—
Maximum plate voltage	90 V	—
Maximum screen voltage	67.5 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5750 uS	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Primary application	Directly heated miniature output pentode with series/parallel filament.	



SOURCE OPERATING CONDITIONS

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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

APPLICATION

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Battery audio output	—



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 · Pentode

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	90 V	ClassA;ParallelFilaments
Screen-grid voltage	67.5 V	ClassA;ParallelFilaments
Grid No.1 bias	7 V	ClassA;ParallelFilaments
Plate current	7.4 mA	ClassA;ParallelFilaments
Screen-grid current	1.4 mA	ClassA;ParallelFilaments
Plate resistance	100000 ohm	ClassA;ParallelFilaments
Transconductance	1575 uS	ClassA;ParallelFilaments
Load resistance	8000 ohm	ClassA;ParallelFilaments
Power output	0.27 W	ClassA;ParallelFilaments
Plate voltage	67.5 V	ClassA;ParallelFilamentsLowVoltage
Screen-grid voltage	67.5 V	ClassA;ParallelFilamentsLowVoltage

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 bias	7 V	ClassA;ParallelFilamentsLowVoltage
Plate current	7.2 mA	ClassA;ParallelFilamentsLowVoltage
Screen-grid current	1.1 mA	ClassA;ParallelFilamentsLowVoltage
Plate resistance	100000 ohm	ClassA;ParallelFilamentsLowVoltage
Transconductance	1550 uS	ClassA;ParallelFilamentsLowVoltage
Load resistance	5000 ohm	ClassA;ParallelFilamentsLowVoltage
Power output	0.18 W	ClassA;ParallelFilamentsLowVoltage
Plate voltage	90 V	ClassA;SeriesFilaments
Screen-grid voltage	67.5 V	ClassA;SeriesFilaments
Grid No.1 bias	7 V	ClassA;SeriesFilaments
Plate current	6.1 mA	ClassA;SeriesFilaments
Plate resistance	100000 ohm	ClassA;SeriesFilaments
Transconductance	1425 uS	ClassA;SeriesFilaments
Load resistance	8000 ohm	ClassA;SeriesFilaments
Power output	0.235 W	ClassA;SeriesFilaments
Plate voltage	67.5 V	ClassA;SeriesFilamentsLowVoltage
Screen-grid voltage	67.5 V	ClassA;SeriesFilamentsLowVoltage
Grid No.1 bias	7 V	ClassA;SeriesFilamentsLowVoltage
Plate current	6 mA	ClassA;SeriesFilamentsLowVoltage
Screen-grid current	1.2 mA	ClassA;SeriesFilamentsLowVoltage
Plate resistance	100000 ohm	ClassA;SeriesFilamentsLowVoltage
Transconductance	1400 uS	ClassA;SeriesFilamentsLowVoltage
Load resistance	5000 ohm	ClassA;SeriesFilamentsLowVoltage
Power output	0.16 W	ClassA;SeriesFilamentsLowVoltage



SOURCE DATA APPENDIX

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1550 μ S	Typical

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	0.27 W	Typical



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage series	2.8 V	Series
Filament current series	50 mA	Series
Filament voltage parallel	1.4 V	Parallel
Filament current parallel	100 mA	Parallel
Plate voltage	90 V	AudioOutput;ClassA
Screen voltage	90 V	AudioOutput;ClassA
Control-grid voltage	-7 V	AudioOutput;ClassA
Plate current	9.5 mA	AudioOutput;ClassA
Screen current	2 mA	AudioOutput;ClassA
Load resistance	8000 Ω	AudioOutput;ClassA
Power output	0.25 W	AudioOutput;ClassA



SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	0.235 W	ClassA;OneTube;Plate 90 V