



ELECTRONIC TUBE REFERENCE

ECH21

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

CONSOLIDATED TECHNICAL
DATA

2 SECTIONS
CONSTRUCTION
HEPTODE-TRIODE

Triode-heptode frequency changer for superheterodyne receivers. The triode generates local oscillation while the heptode mixes it with the incoming station signal to produce the intermediate frequency.

GENERAL CHARACTERISTICS

BASE DESIGNATION	Loctal	BASE PINS	8
NOMINAL HEATER	6.3 V / 320 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Heptode	
PLATE RESISTANCE	1400000 Ω
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	100 V
<i>Published maximum ratings/characteristics promoted from source.</i>	

SECTION2 Triode	
TRANSCONDUCTANCE	0.0017 S
AMPLIFICATION FACTOR	22
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	1.5 W
<i>Published maximum ratings/characteristics promoted from source.</i>	

Triode-heptode frequency changer with heptode mixer and triode RF oscillator sections.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1951 Mullard Valve and Service Manual

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

1951 MULLARD VALVE AND SERVICE MANUAL

Section 1 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion Conductance	750 $\mu\text{A/V}$	Mixer

1951 MULLARD VALVE AND SERVICE MANUAL

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	300 mA	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X Tesla

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

195X TESLA

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	320 mA	Nominal
Maximum Plate Voltage	250 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Screen Voltage	100 V	—

195X TESLA

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	320 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1.5 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1700 μ S	Typical
Amplification Factor	22	Typical



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1999 Philips E-Z

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

1999 PHILIPS E-Z

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
kgssf	1 ma	Published datasheet value

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cgv	6.5 pF	Published datasheet value
Cgv = 6,5 pF Cg	3.8 pF	Published datasheet value
Cg	8 pF	Published datasheet value
Cg = 8 pF Coa	3.1 pF	Published datasheet value
Cagy1 <	0.002 pF	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cagyl <0,002 pF Cag	1.1 pF	Published datasheet value
Cg}	8 pF	Published datasheet value
Cg} = 8 pF Cgk	2.7 pF	Published datasheet value
Cglg3<	0.3 pF	Published datasheet value
Cglg3< 0,3 pF Cak	1.6 pF	Published datasheet value
Cglf <	0.007 pF	Published datasheet value
Cglf <0,007 pF Cge <	0.1 pF	Published datasheet value
Cng1B <	0.1 pF	Published datasheet value
Cgr+g3)glm <	0.35 pF	Published datasheet value
C(gT+g3)an < 0»	1 pF	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va=Vp	250 v	Published datasheet value
Vg1 = -7	-24.5 v	Published datasheet value
Vg2+gs = 100	250 v	Published datasheet value
Se = 750	7.5 w	Published datasheet value
Vg3	0 v	Published datasheet value
Vg1 = ' -2 ~36	-44 v	Published datasheet value
Vgo+gs = 90	250 v	Published datasheet value
3 = 2200 22	2.2 w	Published datasheet value
Va	100 V	Published datasheet value
Ian	12 mA	Published datasheet value
Vy	250 V	Published datasheet value
Ia = 4 H	5 mA	Published datasheet value
Seff	0.55 mA/V	Published datasheet value
Vao	550 V	Published datasheet value
Vs	300 V	Published datasheet value
Wa	1.5 W	Published datasheet value
V{g2+gd)do	550 V	Published datasheet value
Vgoigalla	3 mA	Published datasheet value
Vgoigalla = 3 mA}	100 V	Published datasheet value
V82,54(I3 <.t mA)	3000 V	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vg1 (Ig1=+	0.3 w	Published datasheet value
Vg1 (Ig1=+0,3 wA)	-1.3 V	Published datasheet value
Vg3 (Ig3=+	0.3 w	Published datasheet value
Vg3 (Ig3=+0,3 wh)	-1.3 V	Published datasheet value
Ik	15 mA	Published datasheet value
Vex	50 v	Published datasheet value
Vg (Ig:#0,B uh) = max. –	1 v	Published datasheet value

TUBE TINKER

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