



ELECTRONIC TUBE REFERENCE

EM87

Tuning Indicator electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TUNING INDICATOR

Sensitive tuning and level indicator combining an amplifying triode with a fluorescent display for receiver tuning, signal-strength, and other variable-level indication.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION 1 Triode	
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	0.6 W
<i>Published ratings and characteristics promoted where clearly stated; identical repeated sections compressed when applicable.</i>	

SECTION 2 Tuning Indicator	
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM CATHODE CURRENT	5 A
<i>Sensitive tuning and level indicator with amplifying triode.</i>	

Tuning indicator with integral triode amplifier. Indirectly heated Mazda/Belvu receiving tube; descriptive text translated to English from the French source.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 2 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate and target supply voltage	250 V	AudioLevelIndicator
Target current	2 mA	AudioLevelIndicator
Series resistance	0.1 MΩ	AudioLevelIndicator
Application	Audio-level indicator for tape recorders	Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid bias end of control range	-10 V	AudioLevelIndicator



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Philips Electron Tubes Handbook V1a

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply voltage	250 V	TriodeSection
Indicator voltage	250 V	TriodeSection

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode resistor	100 kOhm	TriodeSection
Grid resistor	3 MOhm	TriodeSection
Grid voltage	0 V	TriodeSection
Grid voltage	-10 V	TriodeSection
Grid voltage	-15 V	TriodeSection
Plate-plus-display current	2 mA	GridVoltage=0V
Plate-plus-display current	0.5 mA	GridVoltage=-10V
Plate-plus-display current	0.2 mA	GridVoltage=-15V

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 2 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Indicator current	1 mA	GridVoltage=0V
Indicator current	1.8 mA	GridVoltage=-10V
Indicator current	2 mA	GridVoltage=-15V
Shadow length	21 mm	GridVoltage=0V
Shadow length	0 mm	GridVoltage=-10V
Shadow overlap	-1.5 mm	GridVoltage=-15V



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1967 Mullard Receiving and Amplifying Valves

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

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
there is a 1	5 mm	Published in approved EM87 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
III	300 mA	Published in approved EM87 target datasheet entry; Section1
I. 2.0 0.5	0.2 mA	Published in approved EM87 target datasheet entry; Section1
It 1.0 1.8	2 mA	Published in approved EM87 target datasheet entry; Section1
*L 21 0	1.5 mm	Published in approved EM87 target datasheet entry; Section1
pa max	600 mW	Published in approved EM87 target datasheet entry; Section1
Ik max	5 mA	Published in approved EM87 target datasheet entry; Section1
T 1J1IIIJ max	120 °C	Published in approved EM87 target datasheet entry; Section1



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filament . Vvf	6.3 V	—
Courant filament ... If	300 mA	—
Tension d'anode à courant nul seecrossensesccosresesouocr VA bl	550 V	—
Tension d'anode s 20 ... Va	300 V	—
Tension de l'électrode de commande acourant nul Vjbl	550 V	—
Tension de cible pour un courant d'anode nul ... Vcbl	550 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension de@ CÎDIE cuvsrerersersnsrsmiseusse suvonsoasessessesarsasecsee rs VC	300 V	—
orésencoms ovosé snsocssacessciscss es PA	0.6 W	—
Courant de cathode Ik	5 mA	—
Tension entre filament et cathode. Vfk	250 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension d'alimentali0n avcsrserseseresencuue VN	250 v	—
Tension de cible ve	250 v	—
G à +	250 v	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1972 Philips Receiving Tubes

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

1972 PHILIPS RECEIVING TUBES

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	300 mA	Published nominal value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	0.6 W	Published or referenced maximum rating
Luminescent screen voltage	250 V	Published operating condition
Grid supply voltage range	-15-0 V	Published

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1973 Mazda Valves Binder 2

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

1973 MAZDA VALVES BINDER 2

Section 2 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage Vh	63 V	—
Heater Current Ib	3 A	—
Maximum Anode Dissipation Pa(max)	6 W	—
Maximum Anode Supply Voltage Vt(b)max	550 V	—
Maximum Anode Voltage Va(max)	300 V	—
Maximum Deflector Supply Voltage Vdef(b)max	550 V	—
Maximum Deflector Voltage Vdef(max)	300 V	—
Maximum Target Supply Voltage Vt(b)max	550 V	—
Maximum Target Voltage Vt(max)	300 V	—
Maximum Heater to Cathode Voltage Vh_k(max)	250 V	—
Maximum Cathode Current 'k(max)	50 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Minimum Target Voltage Vt(min)	170 V	—
Supply Voltage Vb	250 V	—
Target Voltage Vt	250 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Supply Voltage $V_{g(b)}$ — 10 —	15 V	—
Anode Current $I_{a(20-05)}$	2 mA	—
Target Current $I_{t(10-18)}$	20 mA	—



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 · Tuning Indicator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published electrical datum	6.3 V	Heater voltage V_{ϕ} 6.3 V
Published electrical datum	300 mA	Heater current I_f 300 mA
Published electrical datum	250 v	Supply voltage V_p 250 v
Published electrical datum	250 v	Luminescent screen voltage v_y 250 v
Published electrical datum	3 MΩ	Grid resistor R_g 3 MΩ
Published electrical datum	0.2 mA	Anode and deflection electrode current I_{+p} 2.0 0.5 0.2 mA
Published electrical datum	2 mA	Luminescent screen current I_y 1.0 1.8 2.0 mA
Published electrical datum	—	Shadow length a 21 0 -1.5 mml)
Published electrical datum	—	1y a negative value of "a" means overlapping:
Published electrical datum	170 V	V_o min. 170 V
Published electrical datum	3 MΩ	Grid resistor R_g max 3 MΩ
Published electrical datum	—	—15 $V_{g(V)}$ —10 -5

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published electrical datum	550 V	Anode voltage V_a , max. 550 V
Published electrical datum	300 V	V_a max. 300 V
Published electrical datum	0.6 W	Anode dissipation w , max. 0.6 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published electrical datum	550 V	Deflection electrode voltage VDo max. 550 V
Published electrical datum	300 V	Vp max. 300 V
Published electrical datum	550 V	Luminescent screen voltage Voo max. 550 V
Published electrical datum	—	Cathode current I max. S5 mA
Published electrical datum	250 V	Cathode to heater voltage Vkf max. 250 V
Heater voltage	6.3 V	Nominal heater rating
Heater current	300 mA	Nominal heater rating

TUBE TINKER

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

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

© 2026 Tube Tinker