

ELECTRONIC TUBE REFERENCE

6AK8

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

CONSOLIDATED TECHNICAL DATA
4 SECTIONS
CONSTRUCTION

DIODE-DIODE-DIODE-TRIODE

Triple-diode high-mu triode combining AM/FM detector or discriminator functions with voltage amplification. Three diode sections provide multiple signal and control-voltage rectification paths while the triode supplies subsequent audio-frequency gain.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9E	BASE PINS	9
NOMINAL HEATER	6.3 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Similar

9E - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – 1P3	A	P – Plate (Anode)	CONNECTED
PIN2 – 2P	B	P – Plate (Anode)	CONNECTED
PIN3 – IS	A	IS – Internal Screen	CONNECTED
PIN3 – 2K	B	K – Cathode	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – 1P2	A	P – Plate (Anode)	CONNECTED
PIN7 – IS	A	IS – Internal Screen	CONNECTED
PIN7 – 1K	A	K – Cathode	CONNECTED
PIN8 – 1G1	A	G1 – Control Grid	CONNECTED
PIN9 – 1P	A	P – Plate (Anode)	CONNECTED

SECTION RATINGS

SECTION1 Diode	
PEAK INVERSE VOLTAGE	350 V
NOMINAL OUTPUT CURRENT	10 mA
PEAK FORWARD CURRENT	75 mA
<i>Published ratings/characteristics promoted where clearly stated; repeated identical sections compressed where applicable.</i>	

SECTION2 Triode	
PLATE RESISTANCE	58000 Ω
TRANSCONDUCTANCE	0.0012 S
AMPLIFICATION FACTOR	70
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	5 mA
<i>Published maximum ratings, representative operating characteristics, and capacitance columns reviewed.</i>	

SECTION3 Diode	
PEAK INVERSE VOLTAGE	350 V
NOMINAL OUTPUT CURRENT	10 mA
PEAK FORWARD CURRENT	75 mA
<i>Promoted values and additional parameters were taken from the supplied Ferranti datasheet tables.</i>	

SECTION4 Diode	
PEAK INVERSE VOLTAGE	350 V
NOMINAL OUTPUT CURRENT	10 mA
PEAK FORWARD CURRENT	75 mA
<i>Promoted values and additional parameters were taken from the supplied Ferranti datasheet tables.</i>	

Triple-diode triode for detection and low-frequency voltage amplification; source also designates 6AK8.

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 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	450 mA	Published nominal value
Transconductance	1500 μ S	Published operating characteristic

1953 RFT RUNDFUNK TECHNIK

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	450 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Published handbook rating
Plate voltage	250 V	ClassA
Control-grid bias	3 V	ClassA
Plate current	1 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	58000 ohm	Published handbook characteristic
Transconductance	1200 μ S	Published handbook characteristic
Amplification factor	70	Published handbook characteristic
Heater voltage	6.3 V	Published heater rating
Heater current	450 mA	Published heater rating

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	1.9 pF	Published capacitance column
Output capacitance	1.6 pF	Published capacitance column
Grid-to-plate capacitance	2.2 pF	Published capacitance column



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 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode impedance	5000 Ohm	Diode1;Vad=10V

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	Point1
Control-grid voltage	-1 V	Point1
Plate current	0.8 mA	Point1
Transconductance	1450 uS	Point1
Amplification factor	70 ratio	Point1
Plate resistance	48000 Ohm	Point1
Plate voltage	250 V	Point2
Control-grid voltage	-3 V	Point2
Plate current	1 mA	Point2
Transconductance	1400 uS	Point2
Amplification factor	70 ratio	Point2
Plate resistance	50000 Ohm	Point2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	1.9 pF	TriodeSection
Output capacitance	1.4 pF	TriodeSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	250 V	AFAmplifier
Plate load resistance	220 kOhm	AFAmplifier
Plate current	0.8 mA	AFAmplifier
Stage gain	55 ratio	AFAmplifier

1961 FERRANTI TECHNICAL HANDBOOK

Section 3 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode impedance	200 Ohm	Diode2;Vad=5V

1961 FERRANTI TECHNICAL HANDBOOK

Section 4 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode impedance	200 Ohm	Diode3;Vad=5V

[SOURCE DATA APPENDIX](#)

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 · Diode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	DetectorRectifier text	—

1968 MAZDA BELVU

Section 2 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	AFVoltageAmplifier text	—

[SOURCE DATA APPENDIX](#)

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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak inverse voltage	350 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average diode current	1 mA	—
Peak diode current	6 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode capacitance	0.8 pF	—

1999 PHILIPS 0-D

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	450 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate-grid capacitance	2.2 pF	—
Triode input capacitance	1.9 pF	—

1999 PHILIPS 0-D

Section 3 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak inverse voltage	350 V	—
Average diode current	10 mA	—
Peak diode current	75 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Diode capacitance	8.7 pF	—

TUBE TINKER

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