



ELECTRONIC TUBE REFERENCE

ZM1031

Nixie electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

NIXIE

Cold-cathode two-sign indicator dedicated to plus and minus display. Rather than a full numerical set, it provides direct polarity-sign indication, with manufacturer data specifying approximately 170 V ignition and operating supply.

GENERAL CHARACTERISTICS

BASE DESIGNATION	Noval	BASE PINS	9
NOMINAL HEATER	– / –	PARALLEL HEATER	– / –
HEATING	Indirect; cold cathode	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Nixie	
STARTING VOLTAGE	170 V
MAINTAINING VOLTAGE	140 V
DYNAMIC IMPEDANCE	4.5 Ω
<i>Single indicator/counting section. Nixie-specific electrical ratings and operating data are retained in TUBE_SECTION_PARAMETER.</i>	

ZM1031 is a two-sign +/- indicator. It is a cold-cathode tube and is classified as Nixie for this batch. The published ignition/start voltage is 170 V. Published supply/operating voltage is 170 V.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Nixie Valvo

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

1965 NIXIE VALVO

Section 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition voltage	170 V	Typical characteristic
Burning voltage	140 V	At approximately 4 mA
Dynamic resistance	4.5 kOhm	At 2-10 mA
Symbol set	+/-	Direct glow display of signs

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum supply voltage	—170 V	Absolute value
Maximum cathode current	—5 mA	Continuous
Maximum pulse cathode current	—10 mA	For pulse duration up to 20 ms

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1967 Nixie La Radiotechnique

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

1967 NIXIE LA RADIOTECHNIQUE

Section 1 · Nixie

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition/Starting Voltage	170 V	Published ignition/start value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Recommended/Minimum Supply Voltage	170 V	Published operating condition



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 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply voltage Vba min., 170 V	170 S	Supply voltage Vba min., 170 V
Cathode current Ik 4 mA	4 a	Cathode current Ik 4 mA
Ignition voltage Vign < 170V	170 v	Ignition voltage Vign < 170V
Incremental resistance Ty 4.5 kQ	4.5 a	Incremental resistance Ty 4.5 kQ
Shield supply voltage Vbs 50 V	50 S	Shield supply voltage Vbs 50 V
Shield series resistance Rg 10 k@	10 S	Shield series resistance Rg 10 k@
"Off" anode voltage Var 90tol10 V	90 a	"Off" anode voltage Var 90tol10 V
Cathode selecting voltage Vigx 40to 70 V	70 a	Cathode selecting voltage Vigx 40to 70 V
Anode voltage necessary for ignition Va 170 Vv	170 A	Anode voltage necessary for ignition Va 170 Vv

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maintaining voltage at Iy	140 Ma	Maintaining voltage at Iy =4 mA Vm 140 vV
Typical operation at temperatures tymp	50 a	Typical operation at temperatures tymp = 10 to 50 °C

TUBE TINKER

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