

ELECTRONIC TUBE REFERENCE

ZM1083

Nixie electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
NIXIE

Unfiltered gas-filled cold-cathode Nixie symbol indicator displaying plus, minus, and equals signs in instrumentation.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION1 Nixie	
MAXIMUM CATHODE CURRENT	12 mA
MINIMUM REGULATOR CURRENT	1.5 A
MAXIMUM REGULATOR CURRENT	2.5 A
STARTING VOLTAGE	170 V
MAINTAINING VOLTAGE	140 V
Cold-cathode discharge/display section; explicit published limits and operating data are retained as section parameters.	

Gas-filled cold-cathode Nixie symbol indicator for direct optical display of +, – and = in measuring and counting instruments. ZM1083 is the unfiltered version.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1969 Nixie Mullard

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

1969 NIXIE MULLARD

Section 1 · Nixie

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Numeral/Character Height	10.5 mm	Published mechanical/display data
Maximum Peak Cathode Current	12 mA	Published peak limit

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply Voltage	170 V	Published operating data
Minimum Ignition Voltage	170 V	Minimum anode-to-cathode voltage necessary for ignition
Cathode Current	2 mA	Published average/normal value



SOURCE OPERATING CONDITIONS

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1969 Nixie Valvo

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

1969 NIXIE VALVO

Section 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition voltage	170 V	Typical characteristic
Extinction voltage	118 V	Typical characteristic
Life with one digit continuously displayed	5000 h	Recommended conditions

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life with changing display	30000 h	Digit changed every 100 h or more often
Ignition delay	400 ms	Approximately at 180 V
Symbol set	+ - =	10 mm side-visible symbols

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC supply voltage	200 V	Biased DC operation
DC cathode current	2 mA	Biased DC operation
DC burning voltage	140 V	Biased DC operation
Recommended off-cathode bias	60 V	Biased DC operation
Continuous cathode current	1.5–2.5 mA	Absolute range
Envelope temperature	-55–70 degC	Absolute range
Pulse cathode current	10 mA	Typical pulse operation
Pulse burning voltage	185 V	Typical pulse operation
Pulse duration	0.1 ms	Typical pulse operation
Pulse frequency	1000 Hz	Typical pulse operation
Maximum pulse cathode current	—12 mA	Absolute maximum
Pulse duration limits	0.1–2 ms	Absolute range



SOURCE OPERATING CONDITIONS

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196X Nixie Random Datasheets

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

196X NIXIE RANDOM DATASHEETS

Section 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition voltage	170 V	Typical characteristic
Extinction voltage	118 V	Typical characteristic
Life with one digit continuously displayed	5000 h	Recommended conditions

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life with changing display	30000 h	Digit changed every 100 h or more often
Ignition delay	400 ms	Approximately at 180 V
Symbol set	+ - =	10 mm side-visible symbols

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC supply voltage	200 V	Biased DC operation
DC cathode current	2 mA	Biased DC operation
DC burning voltage	140 V	Biased DC operation
Recommended off-cathode bias	60 V	Biased DC operation
Continuous cathode current	1.5–2.5 mA	Absolute range
Envelope temperature	-55–70 degC	Absolute range
Pulse cathode current	10 mA	Typical pulse operation
Pulse burning voltage	185 V	Typical pulse operation
Pulse duration	0.1 ms	Typical pulse operation
Pulse frequency	1000 Hz	Typical pulse operation
Maximum pulse cathode current	—12 mA	Absolute maximum
Pulse duration limits	0.1–2 ms	Absolute range



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 Nixie RFT

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1971 NIXIE RFT

Section 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition voltage	170 V	Typical characteristic
Extinction voltage	118 V	Typical characteristic
Life with one digit continuously displayed	5000 h	Recommended conditions

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life with changing display	30000 h	Digit changed every 100 h or more often
Ignition delay	400 ms	Approximately at 180 V
Symbol set	+ - =	10 mm side-visible symbols

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC supply voltage	200 V	Biased DC operation
DC cathode current	2 mA	Biased DC operation
DC burning voltage	140 V	Biased DC operation
Recommended off-cathode bias	60 V	Biased DC operation
Continuous cathode current	1.5–2.5 mA	Absolute range
Envelope temperature	-55–70 degC	Absolute range
Pulse cathode current	10 mA	Typical pulse operation
Pulse burning voltage	185 V	Typical pulse operation
Pulse duration	0.1 ms	Typical pulse operation
Pulse frequency	1000 Hz	Typical pulse operation
Maximum pulse cathode current	—12 mA	Absolute maximum
Pulse duration limits	0.1–2 ms	Absolute range



SOURCE OPERATING CONDITIONS

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1977 Nixie Tesla

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

1977 NIXIE TESLA

Section 1 · Nixie

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition voltage	170 V	Typical characteristic
Extinction voltage	118 V	Typical characteristic
Life with one digit continuously displayed	5000 h	Recommended conditions

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life with changing display	30000 h	Digit changed every 100 h or more often
Ignition delay	400 ms	Approximately at 180 V
Symbol set	+ - =	10 mm side-visible symbols

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC supply voltage	200 V	Biased DC operation
DC cathode current	2 mA	Biased DC operation
DC burning voltage	140 V	Biased DC operation
Recommended off-cathode bias	60 V	Biased DC operation
Continuous cathode current	1.5–2.5 mA	Absolute range
Envelope temperature	-55–70 degC	Absolute range
Pulse cathode current	10 mA	Typical pulse operation
Pulse burning voltage	185 V	Typical pulse operation
Pulse duration	0.1 ms	Typical pulse operation
Pulse frequency	1000 Hz	Typical pulse operation
Maximum pulse cathode current	—12 mA	Absolute maximum
Pulse duration limits	0.1–2 ms	Absolute range



SOURCE OPERATING CONDITIONS

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Character height	10.5 mm	Character height 10.5 mm
Cathode current	2 mA	Cathode current I 2 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The tube contains 3 cathodes in the form of the characters -, + and ~ and one	3	The tube contains 3 cathodes in the form of the characters -, + and ~ and one

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply voltage	170 V	Supply voltage Vp min. 170 V
at a solder temperature of 240 0C for a maximum of 10 seconds.	10 a	at a solder temperature of 240 0C for a maximum of 10 seconds.

TUBE TINKER

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

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