



ELECTRONIC TUBE REFERENCE

CD102

Nixie electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

NIXIE

Gas-filled cold-cathode Nixie numerical indicator designed to display decimal digits by selective glow discharge of shaped cathodes.

GENERAL CHARACTERISTICS

BASE DESIGNATION	13-17 TGL 68-87	BASE PINS	13
NOMINAL HEATER	– / –	PARALLEL HEATER	– / –
HEATING	Indirect; cold cathode	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Nixie	
MAXIMUM CATHODE CURRENT	3.5 mA
STARTING VOLTAGE	170 V
<i>Cold-cathode Nixie display section. Direct Matsushita CD102 data used for promoted current/starting values; RFT Z560M comparison data remain only as qualified parameters.</i>	

NEC head-view cold-cathode display-discharge tube showing digits 0-9. It has an approximate 16 mm display height. The catalog gives a 170 V minimum anode supply and 1.5-3.0 mA cathode current for the main display. Termination/socket information is M-111.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Nixie Matsushita

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

1966 NIXIE MATSUSHITA

Section 1 · Nixie

DISPLAY		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Display content	Digits 0-9	Top-view numeral display
Display color	Red	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode type	Cold cathode	—
Discharge starting voltage	—170 V	Maximum

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	170— Vdc	Minimum specified plate supply
Cathode current	1.5–3 mA	Plate supply 170 Vdc; plate series resistance 10 kΩ
Cathode dissipation	—0.5 W	Each cathode
Peak cathode current	—3.5 mA	Absolute maximum
Average cathode current	1.5–3 mA	Absolute maximum range
Ambient temperature	-65–70 °C	Operating ambient range
Recommended plate series resistance	10 kΩ	Plate supply 170 Vdc
Recommended plate series resistance	24 kΩ	Plate supply 200 Vdc
Recommended plate series resistance	47 kΩ	Plate supply 250 Vdc
Recommended plate series resistance	68 kΩ	Plate supply 300 Vdc
Display height approximately	16 mm	From dimensional drawing

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Bulb width maximum	—27.5 mm	From dimensional drawing
Overall height maximum	—35 mm	From dimensional drawing
Mounting height approximately	26 mm	From dimensional drawing
Interchangeability	CD18	Datasheet states CD102 can directly replace CD18 despite slight differences



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

196X Nixie NEC

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196X NIXIE NEC

Section 1 · Nixie

DISPLAY		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Display content	Digits 0-9	—
Viewing orientation	top	—
Display construction	head-view	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Display height	16 mm	—
Overall length maximum	35 mm	—
Bulb size maximum	27.5 mm	—
Mounting height approximately	26 mm	—
Anode supply voltage minimum	170— Vdc	Minimum DC anode supply
Cathode current	1.5–3 mA	Digits 0-9

BASE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Socket or termination	M-111	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 Nixie RFT

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

1971 NIXIE RFT

Section 1 · Nixie

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Comparable RFT Type	Z560M	Catalog cross-reference; comparable types are not guaranteed identical
Minimum Operating Supply Voltage	170 V	Published for comparable RFT type Z560M
Cathode Current Minimum	1 mA	Published for comparable RFT type Z560M
Cathode Current Maximum	2.5 mA	Published for comparable RFT type Z560M
Peak Cathode Current	10 mA	Published for comparable RFT type Z560M
Ambient Temperature Minimum	-50 °C	Published for comparable RFT type Z560M
Ambient Temperature Maximum	70 °C	Published for comparable RFT type Z560M
Symbol Height	15.5 mm	Published for comparable RFT type Z560M
Maximum Viewing Distance	10 m	Published for comparable RFT type Z560M
Maximum Bulb Height	26.5 mm	Published for comparable RFT type Z560M
Maximum Bulb Diameter	30.1 mm	Published for comparable RFT type Z560M

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Striking Voltage	145 V	Published for comparable RFT type Z560M
Anode Maintaining Voltage	135 V	Published for comparable RFT type Z560M
Anode Extinction Voltage	120 V	Published for comparable RFT type Z560M