



ELECTRONIC TUBE REFERENCE

SZ31

Nixie electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

NIXIE

Cold-cathode numerical indicator tube for visual display and counting applications; despite appearing in this klystron batch, it is a Nixie-type indicator rather than a microwave tube.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Nixie	
MAXIMUM PLATE VOLTAGE	8000 V
MAXIMUM CATHODE CURRENT	40 mA
Klystron beam/resonator anode voltage is promoted to MaxPlateVoltage where applicable; original published labels and conditions are retained in parameter rows.	

SZ31 is a cold-cathode numerical indicator, classified as Nixie for this batch. The supplied datasheet was reviewed for operating conditions, ratings, and display/counting characteristics.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Ferranti

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

1963 FERRANTI

Section 1 · Nixie

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	7–8.5 V	—
Heater input power	15.5–21 W	—
Heater resistance at 18 W	1.9–2.1 ohm	—
Cold heater resistance	0.2 ohm	—
Maximum heater switching surge	8 A	—
Maximum beam voltage	8 kV	—
Maximum beam current	40 mA	—
Typical beam voltage	6.8–7.4 kV	—
Typical beam current	28–30 mA	—
Output power	10–20 W	—

FREQUENCY		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating frequency	8000–9000 Mc/s	—
Tuning range	20 Mc/s	±20 Mc/s

COOLING		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Water flow	0.3–3 L/min	Published min/max

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency pushing with beam voltage	3 kc/s/V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency pushing with heater current	200 c/s/A	—
Frequency pulling	4.5 Mc/s	—
Temperature coefficient	150 kc/s/C	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply Voltage	170 V	Published datasheet value
Maximum/Normal Cathode Current	3 mA	Published datasheet value

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition/Starting Voltage	170 V	Published datasheet value
Minimum Cathode/Anode Current	2 mA	Published datasheet value