

ELECTRONIC TUBE REFERENCE

6T30

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION  
CONSTRUCTION  
THYRATRON

Hydrogen positive-control triode thyatron for fast high-voltage pulse switching. Controlled gas discharge provides rapid, repeatable pulse conduction.

GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | 4             |
| NOMINAL HEATER      | 6.3 V / 2.3 A     | PARALLEL HEATER      | — / —         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

SECTION RATINGS

|                                                                                                                                                                                            |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| SECTION1 Thyatron                                                                                                                                                                          |       |
| MAXIMUM PLATE VOLTAGE                                                                                                                                                                      | 150 V |
| Published maximum ratings and device-specific characteristics are promoted where schema-compatible; remaining switching/gauge/regulator electrical data is retained in section parameters. |       |

Hydrogen positive-control triode thyatron for fast high-voltage pulse switching. The supplied RCA datasheet was reviewed for published ratings, electrical characteristics, operating conditions, timing/capacitance data, and application-specific limits.

**SOURCE OPERATING CONDITIONS**

# 1971 RCA HB3 Binder 2 of 7

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

1971 RCA HB3 BINDER 2 OF 7

## Section 1 · Thyatron

| CHARACTERISTICS             |                 |                                                                                                                            |
|-----------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| PARAMETER                   | PUBLISHED VALUE | CONDITION / NOTE                                                                                                           |
| Voltage – published value 1 | 6.3 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Voltage – published value 2 | 10 V            | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Current at 6.3 volts        | 6.3 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Minimum                     | 2 A             | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Average                     | 2.3 A           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Minimum heating time        | 2               | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Ionization Time (Approx.)°  | 0.6 s           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Deionization Time (Approx ) | 25 s            | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| at middle of pulse duration | 150 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| DC ANODE-SUPPLY VOLTAGE     | 800 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
|                             |                 |                                                                                                                            |

| PARAMETER                                                                                   | PUBLISHED VALUE | CONDITION / NOTE                                                                                                           |
|---------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| Inverse                                                                                     | 5 V             | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Peak positive-pulse                                                                         | 175 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| AMBIENT-TEMPERATURE RANGE – published value 1                                               | -50 C           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| AMBIENT-TEMPERATURE RANGE – published value 2                                               | 90 C            | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| DC Anode-Supply Voltage                                                                     | 1250 V          | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Forward                                                                                     | 3000 V          | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| current pulse                                                                               | 530 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Negative, before conduction                                                                 | 0 V             | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Peak positive-pulse (Unloaded)                                                              | 175 V           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Effective Grid-Circuit Resistance                                                           | 1000 ohm        | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Peak                                                                                        | 35 A            | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Average°                                                                                    | 35 mA           | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| amplitude and the point on the anode-current Pulse which is 26 Der cent                     | 26 A            | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Of 0.05 µsec. The grid pulse has a minimum peak amplitude of 130 volts, – published value 1 | 0.05 V          | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
|                                                                                             |                 |                                                                                                                            |

| PARAMETER                                                                                        | PUBLISHED VALUE | CONDITION / NOTE                                                                                                           |
|--------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| Of 0.05 $\mu$ sec. The grid pulse has a minimum peak amplitude of 130 volts, – published value 2 | <b>130 V</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| voltage is applied at a rate not to exceed 75,000 volts per second – published value 1           | <b>75 V</b>     | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| voltage is applied at a rate not to exceed 75,000 volts per second – published value 2           | <b>0 V</b>      | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| pulse envelope at which instantaneous amplitudes are equal to 70.7 per                           | <b>70.7 A</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Operation with a bulb temperature within the approximate range of 600                            | <b>600</b>      | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| voltage of 175 volts (unloaded)                                                                  | <b>175 V</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| R1: Grid Resistor, 30,000 ohms – published value 1                                               | <b>30 ohm</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| R1: Grid Resistor, 30,000 ohms – published value 2                                               | <b>0 ohm</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Ry: Effective Resistance of grid circuit, 1000 ohms                                              | <b>1000 ohm</b> | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Heater or filament voltage nominal                                                               | <b>6.3 V</b>    | Nominal value from supplied datasheet.                                                                                     |
| Heater or filament current nominal                                                               | <b>2.3 A</b>    | Nominal or average value from supplied datasheet.                                                                          |

| OTHER          |                 |                                                                                                                            |
|----------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE                                                                                                           |
| Maximum        | <b>2.5 A</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Forward (Ebmf) | <b>3000 V</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
|                |                 |                                                                                                                            |

| PARAMETER                                     | PUBLISHED VALUE | CONDITION / NOTE                                                                                                           |
|-----------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| During first 25 $\mu$ sec – published value 1 | <b>25 V</b>     | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| During first 25 $\mu$ sec – published value 2 | <b>1500 V</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| After first 25 $\mu$ sec – published value 1  | <b>25 V</b>     | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| After first 25 $\mu$ sec – published value 2  | <b>3000 V</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| before conduction                             | <b>200 V</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Peak                                          | <b>35 mA</b>    | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Average°                                      | <b>0.045 mA</b> | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Rate of rise                                  | <b>750 mA</b>   | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| Effective Grid-Circuit Resistance             | <b>1500 mA</b>  | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |
| maximum internal impedance of 1500 ohms       | <b>1500 ohm</b> | Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions. |

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