



ELECTRONIC TUBE REFERENCE

5563A

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
THYRATRON

Mercury-vapor negative-control triode thyatron for very-high-current switching. Its heavy filament and low-drop discharge suit demanding industrial power control.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	5 V / 10 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Thyatron	
MAXIMUM PLATE VOLTAGE	10000 V
MAXIMUM CATHODE CURRENT	70 A
Published maximum ratings and device-specific characteristics are promoted where schema-compatible; remaining switching/gauge/regulator electrical data is retained in section parameters.	

Mercury-vapor negative-control triode thyatron for very high-current switching service. The supplied RCA datasheet was reviewed for published ratings, electrical characteristics, operating conditions, timing/capacitance data, and application-specific limits.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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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	4.75 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Voltage – published value 2	5 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Voltage – published value 3	5.25 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 5 volts – published value 1	5 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 5 volts – published value 2	10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 5 volts – published value 3	11 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Ionization Time (Approx)	10 s	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Deionization Time (Approx)	1000 s	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
instantaneous anode volts = 20000 – published value 1	20000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
instantaneous anode volts = 20000 – published value 2	50 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
At anode amperes = 11.5 – published value 1	11 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
At anode amperes = 11.5 – published value 2	5 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
At anode amperes = 11.5 – published value 3	15 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
At anode amperes = 70 – published value 1	70 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
At anode amperes = 70 – published value 2	25 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Under conditions: 10000-ohm grid resistor,	10000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
by 180°, and condensed-mercury temperature	180	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
» With filament volts = n.75 and no Deat-conserving enclosure	75 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
• Filament voltage has a phase angle of either 00 or 1800 with respect to – published value 1	0 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
• Filament voltage has a phase angle of either 00 or 1800 with respect to – published value 2	1800 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For supply frequency of 25 to 60 c/s – published value 1	25	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For supply frequency of 25 to 60 c/s – published value 2	6	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Filament voltage is 60° to 120° out of phase (lead in or lagging) – published value 1	60 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Fi lament voltage is 60° to 120° out of phase (lead ino or lagging) – published value 2	120 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
anotle current over the averaging period less than 0.1 second ontl may	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
5563-A if it is subjected to extraneous high-frequency	5563	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
mercury–temperature range of 25 to 50 C – published value 1	25	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
mercury–temperature range of 25 to 50 C – published value 2	50	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
mercury–temperature range of 25 to 55 C – published value 1	25	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
mercury–temperature range of 25 to 55 C – published value 2	55	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID RESISTOR = 10000 TO 100000 OHMS – published value 1	10000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID RESISTOR = 10000 TO 100000 OHMS – published value 2	100000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
CONDENSED-MERCURY TEMPERATURE RANGE=25° TO 55°C – published value 1	25 C	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
CONDENSED-MERCURY TEMPERATURE RANGE=25° TO 55°C – published value 2	55 C	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
E1' c ~0 VOLTS A C	0 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Ep = 6.0 VOLTS A C	6 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID RESISTOR = 10000 OHMS	10000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ep=5.0 VOLTS AC	5 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID RESISTOR=10000 OHMS	10000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
CONDENSED -MERCURY TEMPERATURE=40°C	40 C	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
CONDENSED –MERCURY TEMPERATURE=40 'C	40	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
E.F=5.0 VOLTS AC	5 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
CONDENSED -MERCURY TEMPERATURE=40 'G	40	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Heater or filament voltage nominal	5 V	Nominal value from supplied datasheet.
Heater or filament current nominal	10 A	Nominal or average value from supplied datasheet.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward – published value 1	15000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Forward – published value 2	20000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Inverse – published value 1	15000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Inverse – published value 2	20000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 1	-500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 2	-500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
tube conduction – published value 1	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 2	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 1	10 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 2	6.4 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average" – published value 1	1.8 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average" – published value 2	1.6 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
0.1 second maximum – published value 1	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
0.1 second maximum – published value 2	70 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
0.1 second maximum – published value 3	70 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid-Circuit Resistance – published value 1	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid-Circuit Resistance – published value 2	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 1	-500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 2	-500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
tube conduction – published value 1	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
tube conduction – published value 2	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 1	11.5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 2	11.5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average~~ – published value 1	2.5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average~~ – published value 2	2.5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Inverse – published value 1	15000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Inverse – published value 2	20000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
conduction – published value 1	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
conduction – published value 2	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 1	100 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak – published value 2	100 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average° – published value 1	70 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average° – published value 2	70 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average§ – published value 1	1.05 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average I_{a1} – published value 2	1.05 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid–Circuit Resistance – published value 1	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid–Circuit Resistance – published value 2	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Assume that the maximum average anode current is 70 amperes for the	70 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
peak inverse anode voltage above 16000 volts (absolute	16000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
° For maximum peak inverse anode voltage of 20000 volts, and contended–	20000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
~ For maximum peak inverse anode voltage of 15000 volts, and contended–	15000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

TUBE TINKER

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