



ELECTRONIC TUBE REFERENCE

3D22A

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
THYRATRON

Gas-filled grid-controlled thyatron for switching, controlled-rectifier, relay, motor-control, oscillator, or pulse service as documented by the manufacturer.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
NOMINAL HEATER	6.3 V / 2.85 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1	Thyatron
MAXIMUM PLATE VOLTAGE	1500 V
Published maximum ratings and device-specific characteristics are promoted where schema-compatible; remaining switching/gauge/regulator electrical data is retained in section parameters.	

Negative-control gas tetrode thyatron for grid-controlled rectifier and 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.

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Section 1 · Thyatron

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage	6.9 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 6.3 volts – published value 1	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 6.3 volts – published value 2	2.85 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Current at 6.3 volts – published value 3	2.6 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For conditions: do anode volts = 100,	100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
grid-No. 1 square-pulse volts = +100,	100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For conditions: do anode volts = 125,	125 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
do grid-No. 1 volts = -200, grid-No. 1	-200 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
resistor lohms1 = 1000, and do anode	1000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amperes = 0.8 – published value 1	0 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
amperes = 0.8 – published value 2	8 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amperes = 0.8 – published value 3	150 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
do grid-No. 1volts = -14.8, grid-No. 1	-14.8 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
resistor 1ohms1 = 1000, ant1 do anode	1000 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amperes = 0.8 – published value 1	0 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amperes = 0.8 – published value 2	8 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amperes = 0.8 – published value 3	400 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
= 460 1 rms 1, and average anode amperes – published value 1	460 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
= 460 1 rms 1, and average anode amperes – published value 2	1 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
= 460 1 rms 1, and average anode amperes – published value 3	1 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
= 0.8 – published value 1	8 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
= 0.8 – published value 2	800 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Anode Voltage Drop (Aprox.)	10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
volts = 0 – published value 1	0 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
volts = 0 – published value 2	15 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid-No.2 Control Ratio (Approx.)	2	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
(megohms1 = 0, grid-No.2 resistor – published value 1	0 Mohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
(megohms1 = 0, grid-No.2 resistor – published value 2	2 Mohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
volts - -3 – published value 1	-3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
volts - -3 – published value 2	650 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRIi~No.2 (SHIELD-GRID)~VOLTAGE	2 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
AMBIENT-TEMPERATURE RANGE – published value 1	-75 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.
Grid-No.1-Circuit Resistance	2 Mohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4.9.19.2 (F-66) High-Frequency Vibration – published value 1	4.9	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4.9.19.2 (F-66) High-Frequency Vibration – published value 2	19.2	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4.9.19.2 (F-66) High-Frequency Vibration – published value 3	66	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
harmonic motion at a frequency of 50 t 2 cps with a fixed – published value 1	50	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
harmonic motion at a frequency of 50 t 2 cps with a fixed – published value 2	2	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amplitude of 0.040" t 0.0025" (total excursion is double – published value 1	40 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amplitude of 0.040" t 0.0025" (total excursion is double – published value 2	2.5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4. 10. 19 (F-6q) Thyatron High-Voltage Operation – published value 1	4 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4. 10. 19 (F-6q) Thyatron High-Voltage Operation – published value 2	10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4. 10. 19 (F-6q) Thyatron High-Voltage Operation – published value 3	19 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
4. 10. 19 (F-6q) Thyatron High-Voltage Operation – published value 4	6 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid–Xo.i Supply Voltage (i) – published value 1	-4.4 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid–Xo.i Supply Voltage (i) – published value 2	-9.2 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
voltage of 6.3 volts rms, anode supply voltage of 500 volts – published value 1	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
voltage of 6.3 volts rms, anode supply voltage of 500 volts – published value 2	500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
rms, grid No.2 tied to cathode, load resistance of 2000 – published value 1	2	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
rms, grid No.2 tied to cathode, load resistance of 2000 – published value 2	2000	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
ohms, and grid-No.1 circuit-resistance of 2 megohms. Tube	2 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 Supply Voltage (a1 – published value 1	-4.4 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Grid-No.1 Supply Voltage (a1 – published value 2	-9.2 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
This test is made as for Grid-No.1 Supply Voltage (1), ex	1 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Voltage Difference	1 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
in the first and second grid-No.1 supply voltage tests wily	1 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 1	1.41	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 2	1.41	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 3	1	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 4	41	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 1	460	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 2	410	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 3	1.6	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Resistive Load – published value 4	660	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID-N'I RESISTOR, 0I MEG. AND 2 MEG.,AND	2	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FOR HEATER-VOLTAGE RANGE OF 5.7 TO	5.7 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
6.9 VOLTS.AND FOR AN AMBIENT TEMPER	6.9 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
GRID-Ns2 RESISTOR = 0 OHMS	0 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Ef =6.3 VOLTS	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
DC ANODE VOLTS=60p	60 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Ef=6.3~VOLTS	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
_ GRtD-Ns2 RESISTOR(ONM~1=0 - published value 1	1	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
_ GRtD-Ns2 RESISTOR(ONM~1=0 - published value 2	0	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Heater or filament voltage nominal	6.3 V	Nominal value from supplied datasheet.
Heater or filament current nominal	2.85 A	Nominal or average value from supplied datasheet.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward	650 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Inverse	1500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak, before tube conduction	-100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average#, during tube conduction	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak or DC, before tube conduction	-200 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Ave rage#, during tube conduction	-10 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak	8 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average#	0.8 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Fault, for duration of 0.1 second max – published value 1	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Fault, for duration of 0.1 second max – published value 2	30 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
AVERAGE GRJD-No.2 CURRENT# – published value 1	2 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
AVERAGE GRJD-No.2 CURRENT# – published value 2	0.1 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
AVERAGE GRI[{}]-No.1 CURRENT#	5 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
respect to cathode	100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
respect to cathode	25 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.