

ELECTRONIC TUBE REFERENCE

2D21

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
THYRATRON

Gas-filled tetrode thyatron widely used for relay, controlled-rectifier, and pulse-switching applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B7G	BASE PINS	7
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Thyatron	
MAXIMUM PLATE VOLTAGE	1300 V
MAXIMUM CATHODE CURRENT	600 mA
PEAK INVERSE VOLTAGE	1300 V
Gas-discharge device.	

Gas-filled tetrode thyatron for relay, controlled-rectifier and pulse-switching applications.

SOURCE OPERATING CONDITIONS

1946 Standard Telephone and Cables

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

1946 STANDARD TELEPHONE AND CABLES

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 v	—
Nominal curren	600 mA	—
Cathode heating time, minimum	10 sec	—
Grid to anode	0.026 pF	—
Inpu	2.4 pF	—
Output	1.6 pF	—
conduction	-100 v	—
before conduction	-100 v	—
Maximum peak cathode curren	500 mA	—
Maximum average cathode curren	100 mA	—
Maximum fault curren	10 A	—
Maximum duration of fault curren	0.1 sec	—
Maximum average screen curren	10 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Deionization . {v 125M\735u\;Ed	100 v	—
me, approx Rg; 1000 0	10.1 A	—
Va 125V1 Vg, —	10 V	—
Rg11000Q I	100 mA	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Critical grid With V,	460 V	—
current, max. Ia av	100 mA	—
Voltage drop, approx	8 v	—


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1950 Sylvania

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

1950 SYLVANIA

Section 1 · Thyatron

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	6.3 V	—
HeaterOrFilamentCurrent	600 mA	—


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SOURCE OPERATING CONDITIONS

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1951 Mullard Valve and Service Manual

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

1951 MULLARD VALVE AND SERVICE MANUAL

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage Minimum	5.7 V	—
Heater Voltage Maximum	6.9 V	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current Minimum	540 mA	At 6.3V
Heater Current Maximum	660 mA	At 6.3V
Heating Time	10 s	—
Anode Voltage Drop	8 V	—
Anode-Grid1 Capacitance	0.03 pF	—
Input Capacitance	2.5 pF	—
Output Capacitance	1.6 pF	—



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1958 Amperex Industrial

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

1958 AMPEREX INDUSTRIAL

Section 1 · Thyatron

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament heating time	10 s	—
Tube drop	8 V	Conducting
Ionization time	0.5 us	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak forward anode voltage	650 V	—
Peak inverse anode voltage	1300 V	—
Peak anode current	500 mA	—
Average anode current	100 mA	—
Maximum grid voltage	-100 V	—



SOURCE OPERATING CONDITIONS

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1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Thyatron

CHARACTERISTICS

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Gas filling	Gas	—
Cathode heating time	10 s	—

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak forward anode voltage	650 V	—



SOURCE OPERATING CONDITIONS

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195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Thyatron

CHARACTERISTIC

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage drop	8 V	ControlledRectifier

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC cathode current maximum	100 mA	ControlledRectifier
Peak inverse voltage maximum	1300 V	ControlledRectifier

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak cathode current maximum	500 mA	ControlledRectifier



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SOURCE OPERATING CONDITIONS

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1960 RCA Industrial and Communications Types

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

1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak forward anode voltage	650 V	Pulse
Peak inverse anode voltage	1300 V	Pulse

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Relay / controlled rectifier	—



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SOURCE OPERATING CONDITIONS

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1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Thyatron

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater heating time	10 s	—
Tube drop	8 V	Conducting
Ionization time	0.5 us	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak forward anode voltage	650 V	—
Peak inverse anode voltage	1300 V	—
Peak anode current	500 mA	—
Average anode current	100 mA	—
Maximum grid voltage	-100 V	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1968 Mazda Belvu

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

1968 MAZDA BELVU

Section 1 · Thyatron

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament voltage	6.3 V	Published nominal value
Heater or filament current	600 mA	Published nominal value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak cathode current	10 A	Pulse operation; published limit


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1971 Mullard Gas Filled Tubes

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

1971 MULLARD GAS FILLED TUBES

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum peak anode voltage	1.3 kV	—
Maximum average cathode current	600 mA	—
Heater/filament voltage	6.3 V	—
Heater/filament current	600 mA	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 (AC or DC) – published value 1	5.7 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Voltage (AC or DC) – published value 2	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Voltage (AC or DC) – published value 3	6.9 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For conditions: do anode volts= 100; grid-No. 1	100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
5 au a.re-pulse volts = 50; peak anode amp	50 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
For conditions: do anode volts = 125; grid-No. 1	125 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
volts = -100, grid-No. 1 resistor Iohms1 =	-100 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 1	1000 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 2	0 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 3	1 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 4	35 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 1	1000 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 2	0 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 3	1 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
1000; do anode amp. = 0. 1 – published value 4	75 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
supply volts Irms) = 460, and average anode	460 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amp. ~ 0. 1 – published value 1	0 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amp. ~ 0. 1 – published value 2	1 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
amp. ~ 0. 1 – published value 3	500 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.



1975 RCA RC30

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

1975 RCA RC30
Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current	600 mA	Published in approved target datasheet entry
Heating time prior to tube conduction	10 seconds	Published in approved target datasheet entry
Peak value -100	25 V	Published in approved target datasheet entry
125; grid-No	1 V	Published in approved target datasheet entry
Anode Voltage Drop (Approx.)	8 V	Published in approved target datasheet entry
ohms) = 0 ; grid-No	2 V	Published in approved target datasheet entry
Forward	650 V	Published in approved target datasheet entry
Inverse	1300 V	Published in approved target datasheet entry
Peak, before anode conduction	100 V	Published in approved target datasheet entry
Average, during anode conduction"	10 V	Published in approved target datasheet entry
Average" 4	-10 mA	Published in approved target datasheet entry
Ambient Temperature Range 75 to -	-90 °C	Published in approved target datasheet entry
TYPE 2D2I GRID-No	2 V	Published in approved target datasheet entry
OF 5.7 T0	6.9 V	Published in approved target datasheet entry

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 1 to anode	0.026 pF	Published in approved target datasheet entry
Input	2.4 pF	Published in approved target datasheet entry
Output	1.6 pF	Published in approved target datasheet entry