



ELECTRONIC TUBE REFERENCE

3C45

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

THYRATRON

Hydrogen thyatron designed for fast high-power pulse switching, using rapid ionization and deionization for pulse-modulator and network-discharge service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	6.3 V / 2.25 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Thyatron	
MAXIMUM PLATE VOLTAGE	3000 V
MAXIMUM CATHODE CURRENT	35 A
FORWARD VOLTAGE DROP	150 V
<i>Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.</i>	

Hydrogen thyatron; the supplied 3C45 sheet is a cross-reference to the microwave-equipment chapter rather than a full data sheet.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

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

1962 ITT

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
THE [1]	3	THE 3C45 1S A UNIPOTENTIAL CATHODE, THREE ELEMENT HYDROGEN FILLED THYRATRON
THE [2]	5	THE 3C45 1S A UNIPOTENTIAL CATHODE, THREE ELEMENT HYDROGEN FILLED THYRATRON
THE [3]	1	THE 3C45 1S A UNIPOTENTIAL CATHODE, THREE ELEMENT HYDROGEN FILLED THYRATRON
FOR PRODUCING PULSE OUTPUTS OF	55 kW	FOR PRODUCING PULSE OUTPUTS OF 55 KW AT AN AVERAGE POWER LEVEL OF MORE
HEATER VOLTAGE [1]	6.3 V	HEATER VOLTAGE 6.3 5.7 6.6 VoLTS A.C,
HEATER VOLTAGE [2]	5.7 V	HEATER VOLTAGE 6.3 5.7 6.6 VoLTS A.C,
HEATER VOLTAGE [3]	6.6 V	HEATER VOLTAGE 6.3 5.7 6.6 VoLTS A.C,
HEATER CURRENT (AT [1])	6.3 A	HEATER CURRENT (AT 6.3 VoLrts) 2.0 2.5 AMPERES
HEATER CURRENT (AT [2])	2 A	HEATER CURRENT (AT 6.3 VoLrts) 2.0 2.5 AMPERES
HEATER CURRENT (AT [3])	2.5 A	HEATER CURRENT (AT 6.3 VoLrts) 2.0 2.5 AMPERES
Max. Peak ANODE VoLTAGE, FORWARD	3 V	Max. Peak ANODE VoLTAGE, FORWARD 3.0 KirLovoLTs
MiN. ANODE SuPPLY VOLTAGE	800 V	MiN. ANODE SuPPLY VOLTAGE 800 VoLTS D.C.
Max. Peak ANODE CURRENT	35 mA	Max. Peak ANODE CURRENT 35 AMPERES
Max. AVERAGE ANODE CURRENT	45 mA	Max. AVERAGE ANODE CURRENT 45 MiLLIAMPERES
Max. ANODE CURRENT RATE OF RISE	750 mA	Max. ANODE CURRENT RATE OF RISE 750 AMPERES/USECOND

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max. PEAK INVERSE TRIGGER VOLTAGE	200 V	Max. PEAK INVERSE TRIGGER VOLTAGE 200 VoiLTts
Max. ANODE DELAY TIME DRIFT	0.15	Max. ANODE DELAY TIME DRIFT 0.15 MiiCROSECOND
AMB IENT TEMPERATURE [1]	-500	AMB IENT TEMPERATURE -500 10 £900 Cenr.
AMB IENT TEMPERATURE [2]	10	AMB IENT TEMPERATURE -500 10 £900 Cenr.
AMB IENT TEMPERATURE [3]	900	AMB IENT TEMPERATURE -500 10 £900 Cenr.
PEAK NETWORK VOLTAGE	3 V	PEAK NETWORK VOLTAGE 3.0 KiLovoLTs
PuLsSE REPETITION RATE	2500	PuLsSE REPETITION RATE 2500 PuLses/SECOND
PuLse LENGTH	0.5	PuLse LENGTH 0.5 MICROSECOND
TRIIGGER VOLTAGE	200 V	TR1IGGER VOLTAGE 200 VoLTs
Peak Power OutPur (RESISTIVE LOAD [1])	92 W	Peak Power OutPur (RESISTIVE LOAD 92% ZN) h7.2 KiLowarTs
Peak Power OutPur (RESISTIVE LOAD [2])	2 W	Peak Power OutPur (RESISTIVE LOAD 92% ZN) h7.2 KiLowarTs
Peax ANODE CURRENT	35 A	Peax ANODE CURRENT 35 AMPERES
COOLING OF THE ANODE LEAD	1	COOLING OF THE ANODE LEAD 1S PERMISSIBLE, BUT THERE SHALL BE NO AIR BLAST
THE PEAK INVERSE VOLTAGE SHOULD NOT EXCEED 1 [1]	5 kV	THE PEAK INVERSE VOLTAGE SHOULD NOT EXCEED 1.5 KV DURING THE FIRST 25
THE PEAK INVERSE VOLTAGE SHOULD NOT EXCEED 1 [2]	25 kV	THE PEAK INVERSE VOLTAGE SHOULD NOT EXCEED 1.5 KV DURING THE FIRST 25
A. VOLTAGE [1]	175 V	A. VOLTAGE 175-250 VoLTs
A. VOLTAGE [2]	-250 V	A. VOLTAGE 175-250 VoLTs
THE TIME OF ANODE DELAY [1]	1	THE TIME OF ANODE DELAY 1S MEASURED BETWEEN THE 26 PERCENT POINT ON THE
THE TIME OF ANODE DELAY [2]	26	THE TIME OF ANODE DELAY 1S MEASURED BETWEEN THE 26 PERCENT POINT ON THE
TIME JITTER [1]	1 A	TIME JITTER 1S MEASURED AT THE 50 PERCENT POINT ON THE ANODE CURRENT
TIME JITTER [2]	50 A	TIME JITTER 1S MEASURED AT THE 50 PERCENT POINT ON THE ANODE CURRENT
. HEATER	365	. HEATER 365 max —
Published value	2	2. CATHODE
Published value	3	3. GRID

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value [1]	4	4 HEATER & CATHODE TOP CAP CI \\'*r 426 wax
Published value [2]	426	4 HEATER & CATHODE TOP CAP CI \\'*r 426 wax


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V3

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V3

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Device family	Hydrogen thyatron	Section1
Source reference	See chapter Tubes for Microwave Equipment in this volume	SourceCrossReference


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 – published value 1	6.3 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
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.
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.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
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 ha5a 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.
Of 0.05 µsec. The grid pulse ha5a minimum peak amplitude of 130 volts, – published value 2	130 V	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	75 V	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	0 V	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	70.7 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum	2.5 A	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Forward (Ebmf)	3000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
During first 25 μ sec – published value 1	25 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
During first 25 μ sec – published value 2	1500 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
After first 25 μ sec – published value 1	25 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
After first 25 μ sec – published value 2	3000 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
before conduction	200 V	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Peak	35 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Average°	0.045 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Rate of rise	750 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
Effective Grid-Circuit Resistance	1500 mA	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.
maximum internal impedance of 1500 ohms	1500 ohm	Published datasheet value; multiple values on one row represent separate limits, service ratings, or operating conditions.



1982 Toshiba

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1982 TOSHIBA
Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Anode Current	35 A	—
Average Anode Current	45 mA	—
Minimum DC Supply Voltage	800 V	—
Maximum Rate of Rise of Anode Current	750 A/us	—
Pulse Repetition Rate	2500 pps	—
Pulse Duration	6 us	—
DC Anode Supply Voltage	1500 V	PulseModulator
Pulse Repetition Rate	2500 pps	PulseModulator
Pulse Width	0.5 us	PulseModulator
Peak Power Output	45 kW	PulseModulator



SOURCE DATA APPENDIX

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1999 Philips 0-D

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1999 PHILIPS 0-D
Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pour des tensions supérieures a	2 kV	Pour des tensions supérieures a 2 kV, le support doit
Heizung : indirekt 1r(Ve	6.3 V	Heizung : indirekt 1r(Ve = 6,3 V) = 2,0 2,5 A
Vg invp = max,	200 V	Vg invp = max, 200 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heizung : indirekt Ir(Vr	6.3 V	Heizung : indirekt Ir(Vr = 6,3 V) = 2,0 2,54
Ia = max	45 mA	Ia = max. 45 mA
Vg invp = max	200 V	Vg invp = max. 200 V
Bei mindestens	50 V	Bei mindestens 50 V Amplitude

TUBE TINKER

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