

ELECTRONIC TUBE REFERENCE

VC1257

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
THYRATRON

Three-electrode hydrogen zero-bias thyatron for high-power radar modulators, capable of switching pulses in the tens-of-megawatts range.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 23 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Thyatron	
MAXIMUM PLATE VOLTAGE	33000 V
MAXIMUM CATHODE CURRENT	2.6 A
FORWARD VOLTAGE DROP	400 V
WARM-UP TIME	900 s
Hydrogen thyatron; 2.6 A is maximum average cathode current, with 2000-A peak retained as parameter.	

Three-electrode hydrogen zero-bias thyatron for high-power radar modulators, rated for pulses up to about 33 MW.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	23 A	—
Heater voltage minimum	6 V	—
Heater voltage maximum	6.6 V	—
Heater current minimum	20 A	—
Heater current maximum	40 A	—
Cathode heating time minimum	15 min	—
Reservoir voltage minimum	3.5 V	Reservoir
Reservoir voltage maximum	6 V	Reservoir
Reservoir current maximum	12 A	Reservoir
Peak inverse anode voltage maximum	33000 V	Pulse
Peak forward anode voltage maximum	33000 V	Pulse
Peak cathode current	2000 A	Pulse
RMS cathode current	60 A	SquarePulse
DC anode voltage maximum	3500 V	—
Operating frequency maximum tested	1500 Hz	—
Peak grid voltage minimum	1100 V	—
Peak grid voltage maximum	2500 V	—
Peak inverse grid voltage maximum	650 V	—
Current rate of rise maximum	10000 A/us	Pulse

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage drop bogey	200 V	—
Anode voltage drop maximum	400 V	—
Anode delay time maximum	0.5 us	—
Time jitter maximum	0.01 us	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1966 Tung Sol Electronic Tubes 3 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Thyatron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage minimum	6 V	—
Heater voltage nominal	6.3 V	—
Heater voltage maximum	6.6 V	—
Heater current minimum	20 A	—
Heater current nominal	23 A	—
Heater current maximum	40 A	—
Reservoir voltage minimum	3.5 V	HydrogenReservoir
Reservoir voltage maximum	6 V	HydrogenReservoir
Reservoir current maximum	12 A	HydrogenReservoir
Peak inverse anode voltage	33 kV	Pulse
Peak forward anode voltage minimum	7 kV	Pulse
Peak forward anode voltage maximum	33 kV	Pulse
Peak cathode current	2000 A	Pulse
Average cathode current	2.6 A	Pulse

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS cathode current square pulse	60 A	Pulse
DC anode voltage	3.5 kV	—
Operating frequency extensively life-tested	1500 Hz	Pulse
Peak grid voltage minimum	1100 V	Trigger
Peak grid voltage maximum	2500 V	Trigger
Peak inverse grid voltage	650 V	Trigger
Grid pulse rise time	0.35 us	Trigger
Grid pulse width at 70.7 percent	2 us	Trigger
Current rate of rise	10000 A/us	Pulse
Ambient temperature minimum	-55 degC	—
Ambient temperature maximum	75 degC	—
Peak pulse power	33 MW	RadarModulator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode heating time	15 min	—
Reservoir heating time	15 min	HydrogenReservoir
Anode voltage drop minimum	100 V	Conducting
Anode voltage drop nominal	200 V	Conducting
Anode voltage drop maximum	400 V	Conducting
Anode delay time	0.5 us	Pulse
Time jitter	0.01 us	Pulse

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Gas fill	Hydrogen	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	High-power high-voltage radar modulator	PulseModulator

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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