

ELECTRONIC TUBE REFERENCE

1257

Specialized - Thyatron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
THYRATRON

Heavy-duty thyatron with a very high heater demand for substantial controlled-current switching. Available source data establish thyatron service without supporting a narrower gas classification.

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
Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.	

The 1257 is a hydrogen-filled thyatron for high-power pulse-modulator and network-discharge service, with very high peak anode-voltage and current ratings.

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
Peak Anode Voltage Forward	33 kV	—
Peak Anode Voltage Inverse	33 kV	—
Peak Cathode Current	2000 A	—
Average Cathode Current	2.6 A	—
RMS Cathode Current	60 A	—
Operating Frequency	1500 pps	—
Current Rate of Rise	10000 A/us	—
Cathode Heating Time..... ..0 .	15 min	—
Reservoir Current I — —	12 A	—
Reservoir Heating Time..... .. Iiiiiina..	15 min	—
Peak ... —	2000 A	—
Average —	2.6 A	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Delay Time	0.5 us	—
Time Jitter	0.01 us	—
Anode Voltage Drop	200 V	Bogey

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]	1257	THE 1257 IS A UNIPOTENTIAL CATHODE, THREE ELEMENT HYDROGEN FILLED THY=-
THE [2]	1	THE 1257 IS A UNIPOTENTIAL CATHODE, THREE ELEMENT HYDROGEN FILLED THY=-
IS SUITABLE FOR PRODUCING PULSE OUTPUTS OF	33	IS SUITABLE FOR PRODUCING PULSE OUTPUTS OF 33 MEGAWATTS AT AN AVERAGE
POWER LEVEL OF MORE THAN	4 kW	POWER LEVEL OF MORE THAN 40 Kw.
THE SPECIAL FEATURES OF THE	1257	THE SPECIAL FEATURES OF THE 1257 INCLUDE AN INTERNAL HYDROGEN=RESERVOIR
HEATER VOLTAGE [1]	6.3 V	HEATER VOLTAGE 6.3 6.0 6.6 VOLTS A.C.
HEATER VOLTAGE [2]	6 V	HEATER VOLTAGE 6.3 6.0 6.6 VOLTS A.C.
HEATER VOLTAGE [3]	6.6 V	HEATER VOLTAGE 6.3 6.0 6.6 VOLTS A.C.
HeaTeER Current (AT [1])	6.3 A	HeaTeER Current (AT 6.3 VouTs) 20.0 k40,0 AMPERES
HeaTeER Current (AT [2])	20 A	HeaTeER Current (AT 6.3 VouTs) 20.0 k40,0 AMPERES
HeaTeER Current (AT [3])	0 mA	HeaTeER Current (AT 6.3 VouTs) 20.0 k40,0 AMPERES
Heater (NoTe	1	Heater (NoTe 1)
ReservoiIr VoLTAGE (NoTe [1])	2 V	ReservoiIr VoLTAGE (NoTe 2) 3.5 6.0 VoLTS
ReservoiIr VoLTAGE (NoTe [2])	3.5 V	ReservoiIr VoLTAGE (NoTe 2) 3.5 6.0 VoLTS
ReservoiIr VoLTAGE (NoTe [3])	6 V	ReservoiIr VoLTAGE (NoTe 2) 3.5 6.0 VoLTS
ReSERVOIR CURRENT AT [1]	4.5 A	ReSERVOIR CURRENT AT 4.5 VoLTs 3.0 8.0 AMPERES
ReSERVOIR CURRENT AT [2]	3 A	ReSERVOIR CURRENT AT 4.5 VoLTs 3.0 8.0 AMPERES
ReSERVOIR CURRENT AT [3]	8 A	ReSERVOIR CURRENT AT 4.5 VoLTs 3.0 8.0 AMPERES

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAX. PEAK ANODE VOLTAGE, FORWARD	33 V	MAX. PEAK ANODE VOLTAGE, FORWARD 33.0 KiLovoLvs
MAX. Peak ANODE VoLTage, INVERSE (Note k)	33	MAX. Peak ANODE VoLTage, INVERSE (Note k) 33.0 KirovoLTs
MIN. ANODE SUPPLY VOLTAGE	3.5 V	MIN. ANODE SUPPLY VOLTAGE 3.5 KiLovoLTs D.C.
Max. PeAk ANoODE CURRENT	2000 mA	Max. PeAk ANoODE CURRENT 2000 AMPERES
MAX. AVERAGE ANODE CURRENT	2.6 mA	MAX. AVERAGE ANODE CURRENT 2.6 AMPERES
Max. RMS Anope CURReNT (NoTE [1])	5 mA	Max. RMS Anope CURReNT (NoTE 5) 60 AMPERES A.C.
Max. RMS Anope CURReNT (NoTE [2])	60 mA	Max. RMS Anope CURReNT (NoTE 5) 60 AMPERES A.C.
Max. ANODE CURRENT RATE OF RISE	10000 mA	Max. ANODE CURRENT RATE OF RISE 10,000 AMPERESAMSECOND
Max. PEAK INVERSE TRIGGER VOLTAGE	650 V	Max. PEAK INVERSE TRIGGER VOLTAGE 650 VoLTs
AMB IENT TEMPERATURE [1]	-55	AMB IENT TEMPERATURE -55% 10 £75° Cent.
AMB IENT TEMPERATURE [2]	10	AMB IENT TEMPERATURE -55% 10 £75° Cent.
AMB IENT TEMPERATURE [3]	75	AMB IENT TEMPERATURE -55% 10 £75° Cent.
PeaK NETWORK VOLTAGE [1]	33 V	PeaK NETWORK VOLTAGE 33.0 20.0 KiLovoLTs
PeaK NETWORK VOLTAGE [2]	20 V	PeaK NETWORK VOLTAGE 33.0 20.0 KiLovoLTs
PuLse REPETITION RATE [1]	310	PuLse REPETITION RATE 310 1500 Puses/sec.
PuLse REPETITION RATE [2]	1500	PuLse REPETITION RATE 310 1500 Puses/sec.
PULSE LENGTH [1]	2.5	PULSE LENGTH 2.5 1.3 MICROSECOND
PULSE LENGTH [2]	1.3	PULSE LENGTH 2.5 1.3 MICROSECOND
PuLse ForMING NETWORK IMPEDANCE [1]	8.6	PuLse ForMING NETWORK IMPEDANCE 8.6 15.6 OHMS
PuLse ForMING NETWORK IMPEDANCE [2]	15.6	PuLse ForMING NETWORK IMPEDANCE 8.6 15.6 OHMS
TRIGGER VOLTAGE [1]	1500 V	TRIGGER VOLTAGE 1500 1500 Vourts
TRIGGER VOLTAGE [2]	1500 V	TRIGGER VOLTAGE 1500 1500 Vourts
Peak Power Output (RESISTIVE Loap [1])	92 W	Peak Power Output (RESISTIVE Loap 92% ZN) 31 6.2 MEGAWATT
Peak Power Output (RESISTIVE Loap [2])	31 W	Peak Power Output (RESISTIVE Loap 92% ZN) 31 6.2 MEGAWATT

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Power Output (RESISTIVE Loap [3])	6.2 W	Peak Power Output (RESISTIVE Loap 92% ZN) 31 6.2 MEGAWATT
PeAk ANODE CURRENT [1]	2000 A	PeAk ANODE CURRENT 2000 667 AMPERES
PeAk ANODE CURRENT [2]	667 A	PeAk ANODE CURRENT 2000 667 AMPERES
AveRAGE ANODE CURRENT [1]	1.55 A	AveRAGE ANODE CURRENT 1.55 1.3 AMPERES D.Ce
AveRAGE ANODE CURRENT [2]	1.3 A	AveRAGE ANODE CURRENT 1.55 1.3 AMPERES D.Ce
RESERVOIR VOLTAGE [1]	1 V	RESERVOIR VOLTAGE 1S MARKED ON THE BASE OF EACH VC=1257. THI1S 1S THE
RESERVOIR VOLTAGE [2]	1257 V	RESERVOIR VOLTAGE 1S MARKED ON THE BASE OF EACH VC=1257. THI1S 1S THE
RESERVOIR VOLTAGE [3]	1 V	RESERVOIR VOLTAGE 1S MARKED ON THE BASE OF EACH VC=1257. THI1S 1S THE
OPT IMUM RESERVOIR VOLTAGE	1 V	OPT IMUM RESERVOIR VOLTAGE 1S THE MIDPOINT BETWEEN THESE TWO EXTREMES. IN
COOLING OF THE ANODE LEAD	1	COOLING OF THE ANODE LEAD 1S PERMISSIBLE, BUT THERE SHALL BE NO Afr BLAST
ANODE VOLTAGE SHALL NOT EXCEED	5 kV	ANODE VOLTAGE SHALL NOT EXCEED 5 KV.
THE TIME OF ANODE DELAY IS MEASURED BETWEEN THE	26	THE TIME OF ANODE DELAY IS MEASURED BETWEEN THE 26 PERCENT POINT ON
TIME JITTER [1]	1 A	TIME JITTER 1S MEASURED AT THE 50 PERCENT POINT ON THE ANODE CURRENT PULSE,
TIME JITTER [2]	50 A	TIME JITTER 1S MEASURED AT THE 50 PERCENT POINT ON THE ANODE CURRENT PULSE,
I. GRID— GREEN LEAD —LUG FOR#	10	I. GRID— GREEN LEAD —LUG FOR# 10 %CREW
Published value [1]	2	2. HEATER - YELLOW LEAD—LUG FOR 7 SCREwW
Published value [2]	7	2. HEATER - YELLOW LEAD—LUG FOR 7 SCREwW
Published value [1]	3	3. RESERVOIR-RED LEAD —LUG FOR % 0 SCREW T
Published value [2]	0	3. RESERVOIR-RED LEAD —LUG FOR % 0 SCREW T

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value [1]	4	4. RESERVOIR — RED LEAD—LUG FOR %* {0 SCREW 50
Published value [2]	0	4. RESERVOIR — RED LEAD—LUG FOR %* {0 SCREW 50
Published value [3]	50	4. RESERVOIR — RED LEAD—LUG FOR %* {0 SCREW 50
Published value	5	5. HEATER

TUBE TINKER

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