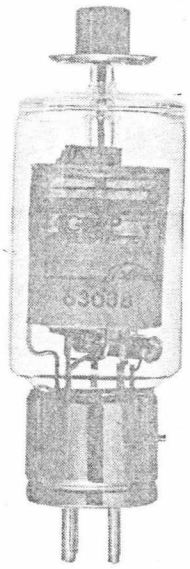
TOSHIBA
Electron Tube, Device & Equipment
TECHNICAL DATA

TOSHIBA HYDROGEN THYRATRON 1G32P

Toshiba 1G32P is a hydrogen thyratorn for switching service in rader modulators and in other pulse applications.
It is suitable for producing pulse outputs of 350 kW at an average power level of 400 watts.
1G32P is identical to the electrical characteristics of 1G35P/4C35 except for dimensions.



GENERAL DATA

	Minimum	Bogie	Maximum	
ELECTRICAL:				
Cathode: Oxide-Coated				
Heater Voltage	5.7	6.3	6.6	V
Heater Current (Ef=6.3V)	5.5	6.1	6.7	A
Heating Time	180	-	-	sec
Anode Voltage Drop	-	70	150	V
Anode Delay Time	-	-	0.6	μs
Anode Current Time Jitter	-	0.005	-	μs

MECHANICAL:

Dimensions ..... See Outline Drawing
- Overall Length ..... 145±5 mm
- Max. Diameter ..... 45 mm

Base Number:
- Cap ..... A14S, Medium (JEDEC No. C1-5)
- Base ..... D16S-2, Medium Shell Small 4-pin (JEDEC No. A4-9)

Recommended Socket:
- Cap ..... Toshiba VT-29057
- Base ..... Toshiba VT-21025

Base Connections ..... See Outline Drawing
Cooling ..... Natural
Mounting Position ..... Any
Net Weight (Approx.) ..... 130 g

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No. ED-T100 1982-05-14

RATINGS

ABSOLUTE MAXIMUM:

Peak Anode Voltage:		
Inverse (1)	8000	V
Forward (2) 5% epy ∿	8000	V
Anode Current:		
Peak Current	90	A
Average Current	0.1	A
Averaging Time	1	cycle
Minimum DC Supply Voltage	2500	V
Negative Grid Voltage (Before Conduction)	200	V
Rate of Rise of Cathode Current	1000	A/μs
Pulse Rapetition Rate (prr)	2500	pps
Operation Factor (3)	2.0×10^9	
Pulse Duration	6	μs
Ambient Temperature	-50 ∿ +90	°C
Altitude	3000	m

GRID DRIVE (4):

Peak Grid Voltage (Min.)	130	V
Time of Rise (Max.)	0.5	μs
Grid Pulse Duration (Min.)(70.7% Amplitude)	2	μs
Grid Drive Circuit Impedance (Max.)	500	Ω

TYPICAL OPERATION (Pulse Modulator):

DC Anode Supply Voltage	8000	V
Pulse Repetition Rate (prr)	2000	pps
Pulse Width	0.5	μs
Pulse Forming Network Impedance	47	Ω
Load Impedance	47	Ω
Peak Power Output	340	kW
DC Anode Current	85	mA

Note (1) In pulse operation, the peak inverse anode voltage exclusive of a spike of 0.05 microsecond maximum duration should not exceed 2500 volts during the first 25 microsecond after the pulse.

(2) Where the anode supply voltage is applied instantaneously, the maximum value of the anode voltage shall not reach 7000 volts in less than 0.04 microsecond.

(3) prr (pulse repetition rate. pps)$\times_{epy}$ (peak forward anode voltage. V)$\times_{ib}$ (peak anode current A)

(4) Measurements are at the tube socket with the thyratron grid disconnected.

GENERAL OPERATIONAL RECOMMENDATION

1. High Voltage

Operating voltages for power tubes range from several hundred volts to higher than 50,000 volts. Since these voltage can be deadly, equipment must be designed so that one can not come in contact with high voltage.

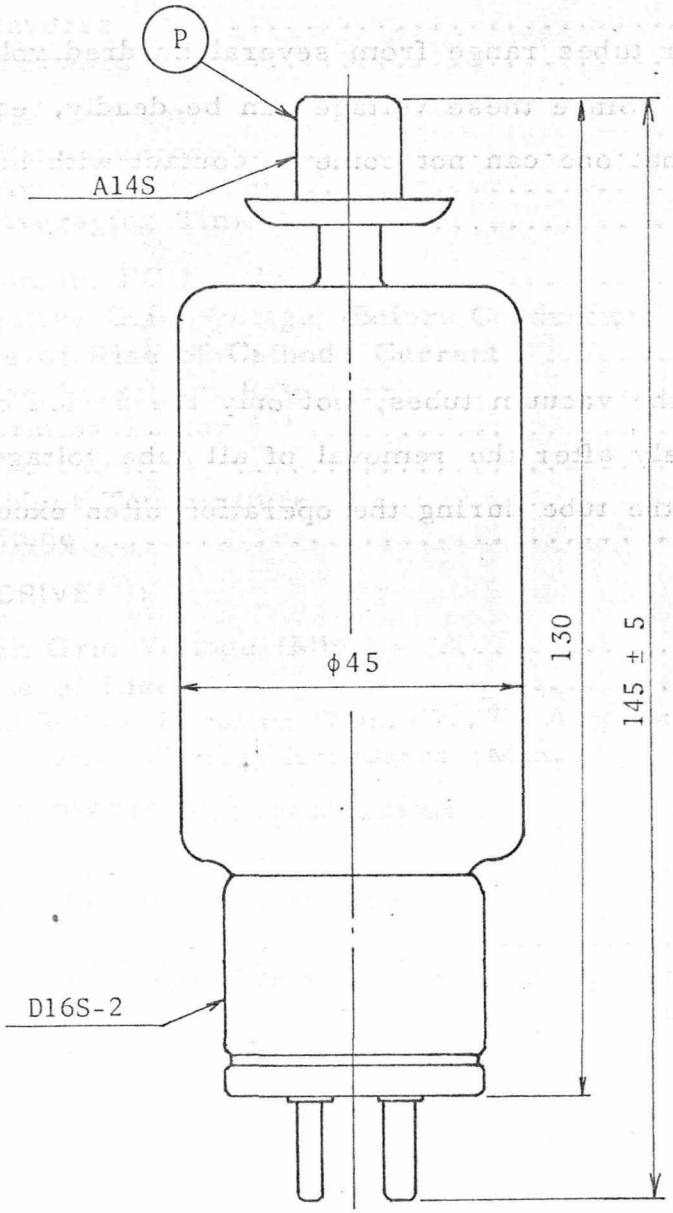
2. High Temperature

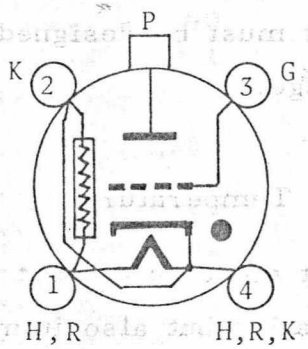
Don't come in contact with the vacuum tubes, not only the period of the operation but also immediately after the removal of all tube voltages, because the temperature of the tube during the operation often exceeds 200 °C.

DIMENSIONAL OUTLINE

1G32P

Unit : mm

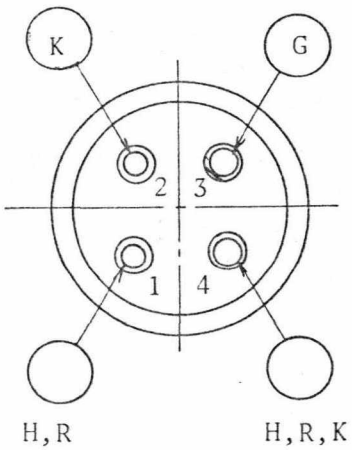




P: Anode

G: Grid

H: Heater

R: Reservoir

K: Cathode