

TOSHIBA

Electron Tube, Device & Equipment

TECHNICAL DATA

TOSHIBA HYDROGEN THYRATRON 1G32P

Toshiba 1G32P is a hydrogen thyatron for switching service in radar 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

ELECTRICAL:	Minimum	Bogie	Maximum	
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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TOSHIBA CORPORATION

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/ μ s
Pulse Repetition Rate (prp)	.....	2500 pps
Operation Factor ⁽³⁾		2.0×10^9
Pulse Duration	.....	6 μ s
Ambient Temperature	.....	-50 ~ +90 °C
Altitude	.....	3000 m

GRID DRIVE ⁽⁴⁾:

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

TYPICAL OPERATION (Pulse Modulator):

DC Anode Supply Voltage	.....	8000 V
Pulse Repetition Rate (prp)	.....	2000 pps
Pulse Width	.....	0.5 μ s
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⁾ prp (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 thyatron 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.

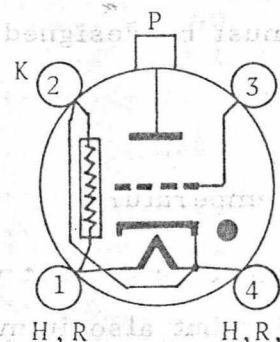
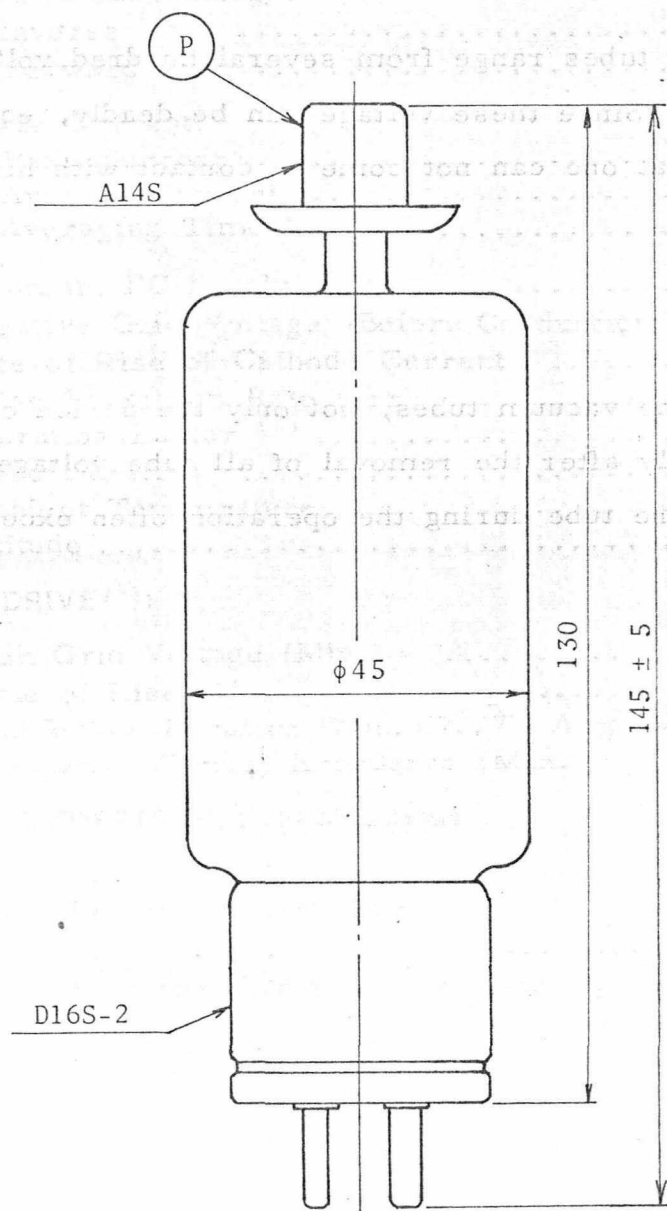
2. High Temperature

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

