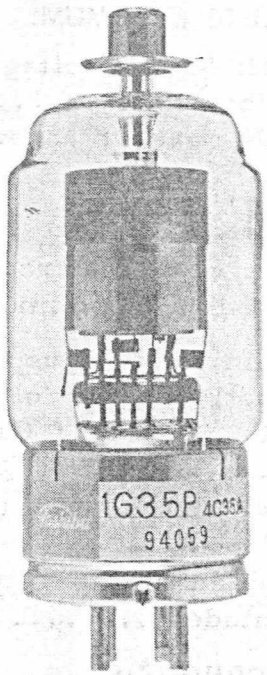
TOSHIBA
Electron Tube, Device & Equipment
TECHNICAL DATA

TOSHIBA HYDROGEN THYRATRON
1G35P/4C35

Toshiba 1G35P is a hydrogen thyratorn for switching service in radar modulators and in other pulse applications.
It is suitable for producing pulse outputs of 350kW at an average power level of 400 watts. Very short deionization time and precise triggering permit the generation of short-duration pulses at high repetition frequencies and with negligible time jitter.
1G35P is interchangeable with the 4C35, 4C35A.



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	-	0.002	0.005	μs

MECHANICAL:

Dimensions: ..... See Outline Drawing
Overall Length ..... 170 ± 6 mm
Max. Diameter ..... 65 mm
Base Number:
Cap ..... A14S, Medium (JEDEC No. C1-5)
Base ..... D25PA-1, Large-Metal Shell Super-Jumbo 4-Pin with Bayonet (JEDEC No. A4-18)
Recommended Socket:
Cap ..... Toshiba VT-29056
Base ..... Toshiba VT-21026
Base Connections ..... See Outline Drawing
Cooling ..... Natural
Mounting Position ..... Any
Net Weight (Approx.) ..... 225 g

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NaED-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 Repetition 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.)	1500	Ω

TYPICAL OPERATION (Pulse Modulator):

DC Anode Supply Voltage	4000	V
Pulse Repetition Rate (prr)	2250	pps
Pulse Width	0.5	μs
Pulse Forming Network Impedance	50	Ω
Load Impedance	46	Ω
Grid Drive Voltage	200	V
Peak Power Output	310	kW
Average Power Output	350	W
DC Anode Current	94	mA
Time Jetter	0.01	μs

Note (1) In pulsed 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

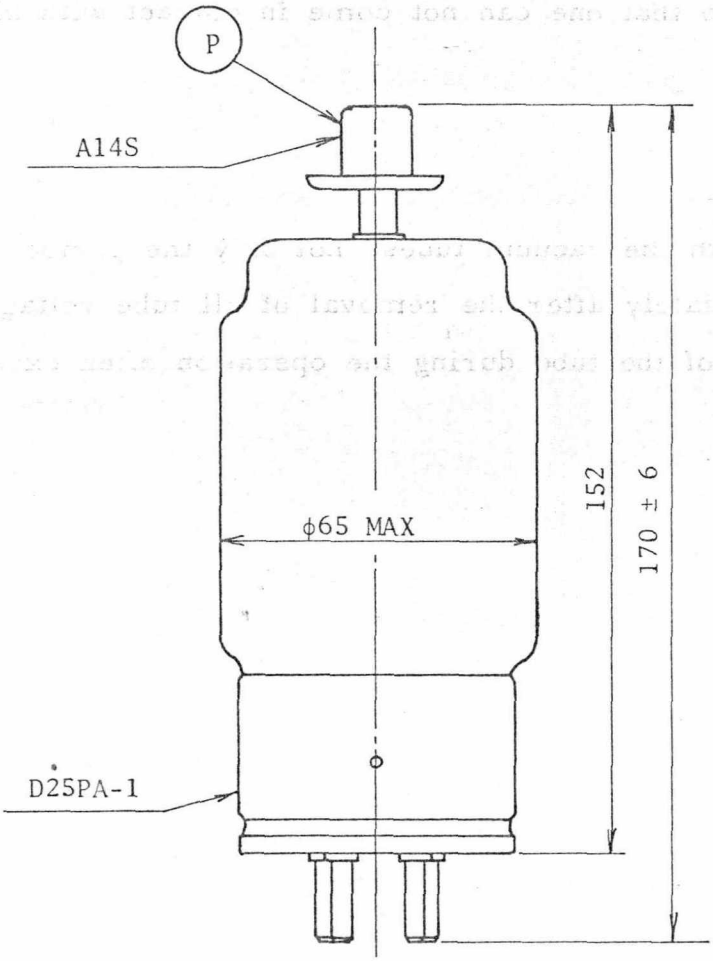
Operating voltages for power tubes range from several hundred volts to higher than 50,000 volts. Since these voltage can be deadly, equipment must be designed so that one can not come in contact with high voltage.

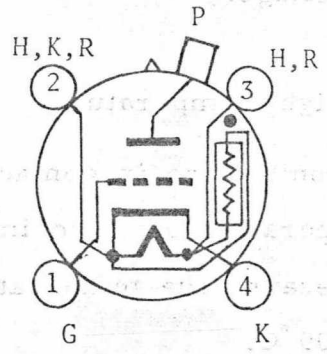
2. High Temperature

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
1G35P/4C35A

Unit : mm

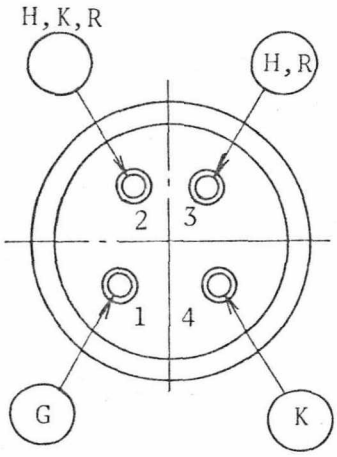




P: Anode

G: Grid

K: Cathode

H: Heater

R: Reservoir