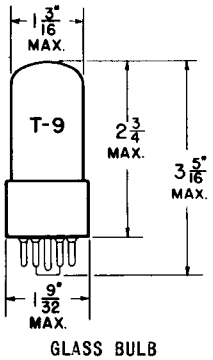
TUNG-SOL

DIODE



GLASS BULB

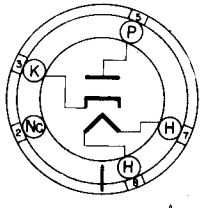
UNIPOTENTIAL CATHODE

HEATER

12.6 VOLTS 0.60±0.040 AMP.

ANY MOUNTING POSITION

[A] SOCKET PINS 1, 2, 4 & 6 MUST NOT BE USED AS TIE POINTS.



BOTTOM VIEW[A]

INTERMEDIATE SHELL
5 PIN OCTAL

4CG

THE 12D4A IS A SINGLE INDIRECTLY-HEATED DIODE INTENDED FOR USE IN TELEVISION HORIZONTAL FREQUENCY DAMPER SERVICE. IT IS DESIGNED TO WITHSTAND HIGH VOLTAGE PULSES BETWEEN CATHODE AND BOTH HEATER AND PLATE ELEMENTS SUCH AS NORMALLY ENCOUNTERED IN "DIRECT DRIVE" CIRCUITS.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.

HEATER TO CATHODE: H TO K	3.0	μμf
CATHODE TO PLATE AND HEATER: K TO (P+ H)	9.0	μμf
PLATE TO CATHODE AND HEATER: P TO (K +H)	7.0	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM[B]

HEATER VOLTAGE[C]	12.6	VOLTS
MAXIMUM PEAK INVERSE PLATE VOLTAGE	5000	VOLTS
MAXIMUM DC PLATE CURRENT	185	MA.
MAXIMUM STEADY STATE PEAK PLATE CURRENT	900	MA.
MAXIMUM PLATE DISSIPATION	8.0	WATTS
MAXIMUM HEATER-CATHODE VOLTAGE[D]		
HEATER NEGATIVE WITH RESPECT TO CATHODE		
DC	1000	VOLTS
TOTAL DC AND PEAK	5000	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		
DC	100	VOLTS
TOTAL DC AND PEAK	300	VOLTS
HEATER WARM-UP TIME (APPROX.)*	11.0	SECONDS

AVERAGE CHARACTERISTICS

HEATER VOLTAGE	12.6	VOLTS
HEATER CURRENT	0.60±0.040	AMP.
TUBE VOLTAGE DROP (WITH TUBE CONDUCTING PLATE CURRENT --340 MA.)	30	VOLTS

B

DESIGN-MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICE OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE WORST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABILITY OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATIONS IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN-MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.

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[C] THE EQUIPMENT DESIGNER SHALL SO DESIGN THE EQUIPMENT THAT THE HEATER CURRENT IS AT THE SPECIFIED BOGIE VALUE. HEATER SUPPLY VARIATIONS SHOULD BE RESTRICTED SO THAT THE HEATER CURRENT WILL BE MAINTAINED WITHIN THE SPECIFIED TOLERANCE.

[D] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF G OD ENGINEERING PRACTICE FOR TELEVISION BROAD AST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.