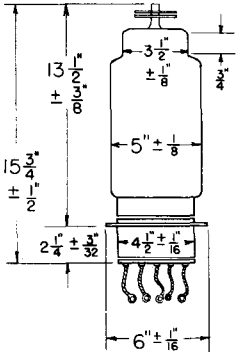
TUNG-SOL

THYRATRON



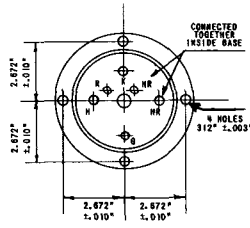
GLASS BULB

HEATER

6.3 VOLTS 23. AMP.

VERTICAL MOUNTING POSITION

(BASE DOWN)



BOTTOM VIEW

THE CH1096 IS A ZERO BIAS HYDROGEN THYRATRON DESIGNED TO PASS HIGH CURRENTS IN "CROWBAR" PROTECTIVE CIRCUITS. AS DESCRIBED IN THE APPLICATION NOTES, DESTRUCTIVE ARC CURRENTS ARE SHORT CIRCUITED BY THE CROWBAR TUBE BEFORE DAMAGE OCCURS TO OTHER TUBES OR CIRCUIT ELEMENTS.

THE INSTANTANEOUS RESPONSE, AND ABILITY TO REPEATEDLY CARRY EXTREMELY LARGE CURRENTS, MAKES THE HYDROGEN THYRATRON PRATICULARLY ATTRACTIVE FOR THIS APPLICATION. ONE TYPE CH1096 CAN HANDLE A PEAK CURRENT OF 1500 AMPS AT 18 KILOVOLTS. THIS TUBE CONTAINS A HYDROGEN RESERVOIR WHICH PROMOTES LONG LIFE AND PERMITS OPTIMUM GAS PRESSURE ADJUSTMENT FOR VARIOUS CONDITIONS OF OPERATION.

ELECTRICAL DATA

	MIN.	BOGEY	MAX.	
CATHODE HEATER VOLTAGE	6.0	6.3	6.6	VOLTS
CATHODE HEATER CURRENT (E_f = 6.3 VOLTS)	27.	30.	33.	AMP.
CATHODE HEATING TIME	15.			MINUTES
RESERVOIR VOLTAGE	2.5	MARKED ON BASE	5.5	VOLTS
RESERVOIR CURRENT			12.	AMP.
RESERVOIR HEATING TIME	15.			MINUTES

MECHANICAL DATA

TYPE OF COOLING	CONVECTION	
MAX. NET WEIGHT	4 5/8	LBS.
MOUNTING POSITION	VERTICAL, BASE DOWN	
DIMENSIONS	SEE OUTLINE DRAWINGS	

CONTINUED ON FOLLOWING PAGE

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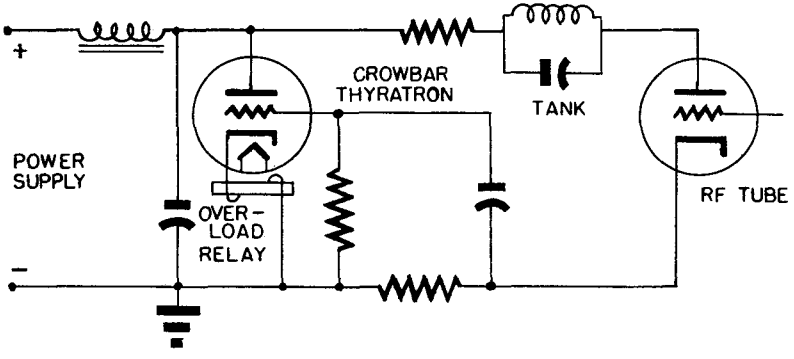
CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS
ABSOLUTE VALUES

	MIN.	MAX.	
D.C. ANODE VOLTAGE			
FORWARD	5	18	KVOLTS
INVERSE		5	KVOLTS
CATHODE CURRENT			
PEAK		1500	AMP.
AVERAGE		2	AMP.
CONDUCTION TIME PER FAULT		0.1	SECONDS
AVERAGING TIME		75	SECONDS
RECOVERY TIME		50	μSECONDS
GRID SIGNAL VOLTAGE	1000	2500	VOLTS
GRID IMPEDANCE	50	200	OHMS
GRID VOLTAGE RATE OF RISE	2200		V/μSEC.
ANODE DELAY TIME		0.6	μSECONDS
ANODE VOLTAGE DROP	50	300	VOLTS
AMBIENT TEMPERATURE RANGE	-50	+75	°C

APPLICATION NOTES

IN A TYPICAL APPLICATION, A CROWBAR THYRATRON IS CONNECTED IN SERIES WITH A SUITABLE IMPEDANCE ACROSS THE FILTER OF THE HIGH VOLTAGE POWER SUPPLY FOR A HIGH FREQUENCY TRIODE OSCILLATOR. WHENEVER AN ARC OCCURS IN THE OSCILLATOR TUBE, THE RISING CURRENT IS USED TO DELIVER A SUITABLE SIGNAL TO THE GRID OF THE THYRATRON. THE THYRATRON IMMEDIATELY CONDUCTS TO SHORT CIRCUIT THE POWER SUPPLY UNTIL THE PROTECTIVE CIRCUIT BREAKER OPENS 0.1 TO 0.5 SECOND LATER. WITH PROPER CIRCUITRY, THE THYRATRON CAN BE MADE TO RECOVER CONTROL BEFORE THE POWER SUPPLY BREAKER OPENS. IN THIS LATTER CASE, THE OSCILLATOR TUBE IS PROTECTED WITH A MINIMUM INTERRUPTION IN OPERATING TIME.



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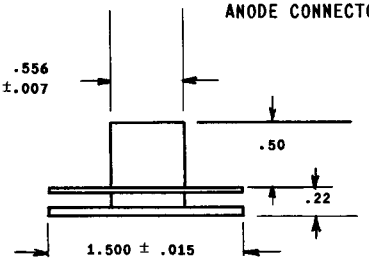
LEAD CONNECTIONS

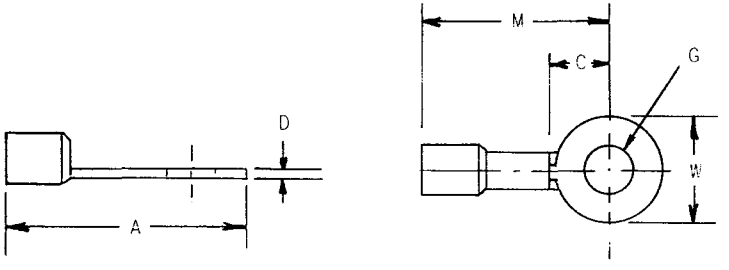
LEAD	FUNCTION	LEAD COLOR	LUG COLOR	LUG
1	GRID	GREEN	GREEN	S
2	CATHODE & HEATER C-T	BLACK	BLACK	L
3	HEATER	YELLOW	YELLOW	L
4	HEATER	YELLOW	BLACK	L
5	RESERVOIR	RED	YELLOW	S
6	RESERVOIR	RED	RED	S

LEADS ARE FLEXIBLE 5 1/2"±1/2" LONG FROM BOTTOM OF BASE TO CENTER OF LUG HOLE. COLOR CODING AS WELL AS BASE MARKING IDENTIFIES THE LEADS.

ANODE CONNECTOR



LUG DIMENSIONS



LUG	G STUD	A MAX.	W MAX.	C MIN.	D	M MAX.
L	1/4"	1.21"	.53"	.41"	.04"	.9[illegible]"
S	#10	.90"	.31"	.30"	.03"	.7[illegible]"

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