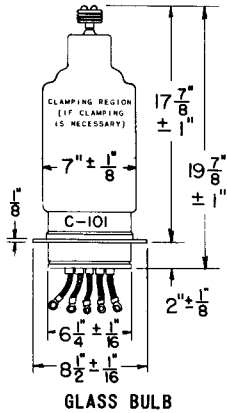


**TUNG-SOL**

THYRATRON

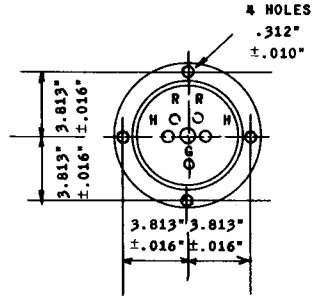


GLASS BULB

HEATER  
6.3 VOLTS 23. AMP.

VERTICAL MOUNTING  
POSITION

(BASE DOWN)



BOTTOM VIEW

THE CH1097 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 PARTICULARLY ATTRACTIVE FOR THIS APPLICATION. ONE TYPE CH1097 CAN HANDLE A PEAK CURRENT OF 2500 AMPS AT 25 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)	20.	23.	40.	AMP.
CATHODE HEATING TIME	15.			MINUTES
RESERVOIR VOLTAGE	3.5	MARKED ON BASE	6.0	VOLTS
RESERVOIR CURRENT			12	AMP.
RESERVOIR HEATING TIME	15.			MINUTES

**MECHANICAL DATA**

TYPE OF COOLING	CONVECTION	
MAX. NET WEIGHT		10 LBS.
MOUNTING POSITION	VERTICAL, BASE DOWN	
DIMENSIONS	SEE OUTLINE DRAWINGS	

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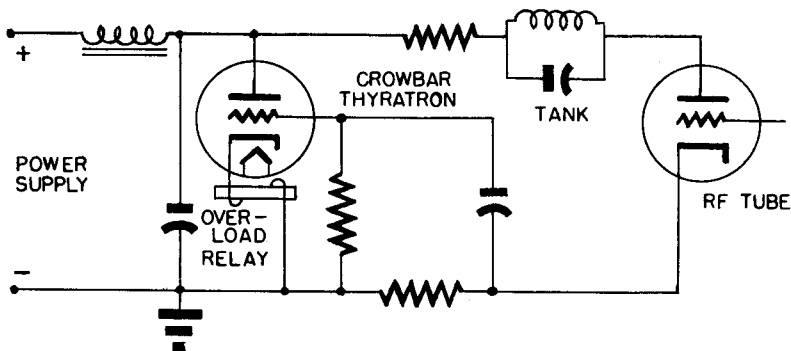
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**MAXIMUM RATINGS**  
ABSOLUTE VALUES

	MIN.	MAX.	
D.C. ANODE VOLTAGE			
FORWARD	7	25	KVOLTS
INVERSE		5	KVOLTS
CATHODE CURRENT			
PEAK		2500	AMP.
AVERAGE		5	AMP.
CONDUCTION TIME PER FAULT		0.1	SECONDS
AVERAGING TIME		50	SECONDS
RECOVERY TIME		50	μSECONDS
GRID SIGNAL VOLTAGE	1400	2500	VOLTS
GRID IMPEDANCE	20	50	OHMS
GRID VOLTAGE RATE OF RISE	2500		V/μSEC.
ANODE DELAY TIME		0.6	μSECONDS
ANODE VOLTAGE DROP	50	300	VOLTS
AMBIENT TEMPERATURE RANGE	-55	+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.



**REFERENCES:**

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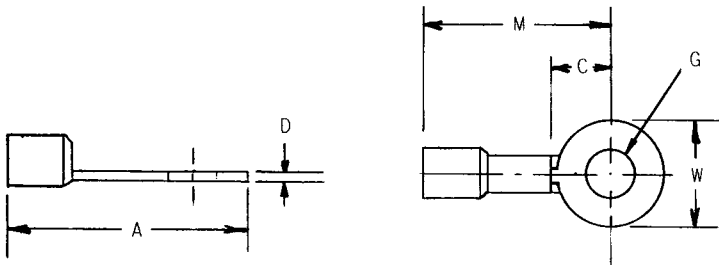
**TUNG-SOL**

**LEAD CONNECTIONS**

LEAD	FUNCTION	LEAD COLOR	LUG COLOR	LUG
1	GRID	GREEN	GREEN	S
2	HEATER	YELLOW	YELLOW	L
3	HEATER	YELLOW	YELLOW	L
4	RESERVOIR	RED	RED	S
5	RESERVOIR	RED	RED	S
6	CATHODE	TUBE BASE FLANGE		

LEADS ARE FLEXIBLE 8"±3/4" LONG FROM BOTTOM OF BASE TO CENTER OF LUG HOLE. COLOR CODING AS WELL AS BASE MARKING IDENTIFIES THE LEADS.

**LUG DIMENSIONS**



LUG	G STUD	A MAX.	W MAX.	C MIN.	D	M MAX.
L	1/4"	1.21"	.53"	.41"	.04"	.94"
S	#10	.90"	.31"	.30"	.03"	.74"

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