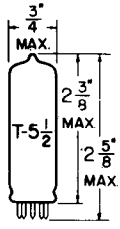
TUNG-SOL

DOUBLE DIODE

MINIATURE TYPE

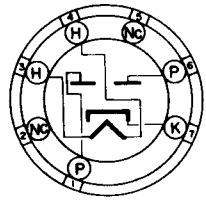


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
6.3 VOLTS 0.6 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
MINIATURE BUTTON
7 PIN BASE
5BS

THE 6X4W IS A RUGGEDIZED HEATER-CATHODE TYPE DOUBLE DIODE USING THE SEVEN PIN MINIATURE CONSTRUCTION. IT IS SUITABLE FOR USE IN HALF OR FULL WAVE RECTIFIER APPLICATIONS, SUCH AS ENCOUNTERED WHEN USED IN CONJUNCTION WITH VIBRATOR-TYPE INVERTERS. SINCE IT MUST BE ABLE TO WITHSTAND SEVERE MECHANICAL TESTS TO MEET TEST SPECIFICATIONS, THE 6X4W IS ALSO SUITED FOR USE IN INDUSTRIAL AND MILITARY EQUIPMENT WHICH MAY BE SUBJECTED TO SEVERE SHOCK AND VIBRATION.

RATINGS
ABSOLUTE MAXIMUM VALUES

HEATER VOLTAGE	6.3±10%	VOLTS
MAXIMUM PEAK INVERSE PLATE VOLTAGE	1375	VOLTS
MAXIMUM DC PLATE CURRENT	230	mA.
MAXIMUM DC OUTPUT CURRENT	75	mA.
MAXIMUM SURGE CURRENT	750	mA.
MAXIMUM HEATER-CATHODE VOLTAGE	450	VOLTS
MAXIMUM ALTITUDE	10 000	FEET
MAXIMUM SHOCK	700	G

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS
FULL-WAVE RECTIFIER

	INPUT TO FILTER CAPACITOR	INPUT TO FILTER CHOKE	
HEATER VOLTAGE	6.3	6.3	VOLTS
HEATER CURRENT	0.6	0.6	AMP.
AC PLATE SUPPLY VOLTAGE (EACH PLATE)	325	450	VOLTS
INPUT CONDENSER[A]	10	---	μfd
INPUT CHOKE	---	10	HENRYS
TOTAL EFFECTIVE PLATE SUPPLY IMPEDANCE (EACH PLATE)	525	---	OHMS
DC OUTPUT CURRENT	70	70	mA.
DC OUTPUT VOLTAGE AT INPUT TO FILTER (APPROX.)			
AT HALF-LOAD CURRENT (35 mA)	365	395	VOLTS
AT FULL-LOAD CURRENT (70 mA)	310	385	VOLTS
DIFFERENCE (VOLTAGE REGULATION)	55	10	VOLTS
PERCENTAGE REGULATION	15	2.5	PERCENT

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CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

Ef=6.3V, Epp/p=400Vac, RL=5700 Ohms, CL=8μf

EXCEPT AS MODIFIED BELOW

	INITIAL MIN.	INDIVIDUAL MAX.	
HEATER CURRENT	540	660	mA.
HEATER–CATHODE LEAKAGE (Ehk=Eo)	0	150	μAdc
HEATER–CATHODE LEAKAGE[B]	−150	+150	μAdc
OPERATION[CD]			
GRID EMISSION (1)[E] (E_{2b}=O, E_{1b}=50Vdc)	140	---	mAdc
GRID EMISSION (2)[E] (E_{1b}=O, E_{2b}=50Vdc)	140	---	mAdc

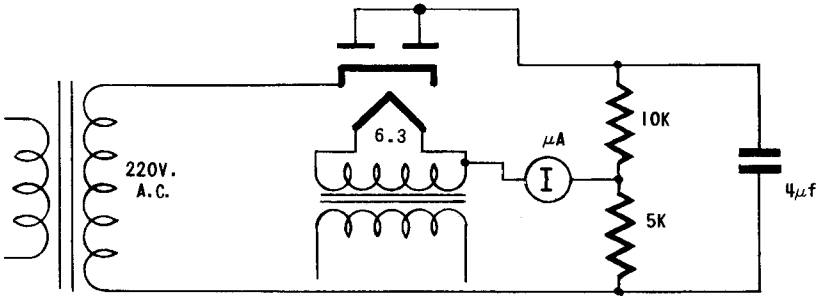
SPECIAL REQUIREMENTS

	MIN.	MAX.	
VARIABLE FREQUENCY VIBRATION[F] (NO VOLTAGES)	---	---	
LOW FREQUENCY VIBRATION[G] (NO VOLTAGES)	---	---	
SHOCK[HJ] (HAMMER ANGLE = 48°)	---	---	
VIBRATIONAL FATIGUE[K]	---	---	
POST SHOCK AND VIBRATIONAL FATIGUE TEST END POINTS			
OPERATION	65	---	mAdc
HEATER–CATHODE LEAKAGE	0	150	mAdc
MECHANICAL RESONANCE[L]	---	---	
LIFE TEST (1)[M]	500	---	HOURS
HEATER CYCLING LIFE TEST[N] (Ef=7.5Vac, Ehk=100V, Ep=O)	2000	---	CYCLES
LIFE TEST END POINT (1)[P]			
OPERATION	60	---	mAdc
LIFE TEST END POINT (2)[R]	---	---	

NOTES

A HIGHER VALUES OF CAPACITANCE THAN INDICATED MAY BE USED, BUT THE EFFECTIVE PLATE-SUPPLY IMPEDANCE MAY HAVE TO BE INCREASED TO PREVENT EXCEEDING THE MAXIMUM RATING FOR HOT-SWITCHING TRANSIENT PLATE CURRENT.

B



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NOTES — CONT'D.

C SEE MIL-E-1C 4.10.13

D IN A FULL-WAVE CIRCUIT ADJUST Zp/p SUCH THAT A TUBE HAVING Etd=22 vdc AT 70 mAdc PER PLATE GIVES I_o=75 mAdc. THE TUBE MAY BE PREHEATED PRIOR TO THIS TEST PROVIDED TEST 4.11 IS CONDUCTED ACCORDING TO 4.11.5.

E SEE MIL-E-1C 4.10.1.1

F SEE MIL-E-1C 4.9.20.3

G SEE MIL-E-1C 4.9.20.4

H SEE MIL-E-1C 4.9.20.5

J AFTER SHOCK TESTS, THE TUBES SHALL MEET POST-SHOCK AND FATIGUE TEST END POINT REQUIREMENTS. IN ADDITION, THE TUBES SHALL NOT SHOW PERMANENT SHORTS OR OPEN CIRCUITS WHEN TESTED PER 4.7 (F-1e) AFTER SHOCK TESTS.

K SEE MIL-E-1C 4.9.20.6

L THE MOUNT SHALL EXHIBIT NO PRONOUNCED MECHANICAL RESONANCE BELOW 100 CPS.

M IN LIFE TEST CONDITIONS THE VALUES OF RL AND CL GIVEN IN TEST CONDITIONS MAY BE CONSIDERED APPROXIMATE AND SHALL BE ADJUSTED INITIALLY TO GIVE I_o = 75 mAdc WITH i_b GREATER THAN 205 mA; E_{hk} = E_o.

N SEE MIL-E-1C 4.11.7

P SEE MIL-E-1C 4.11.4

R AN OPEN HEATER OR A HEATER-CATHODE SHORT CONSTITUTES A TUBE FAILURE. LOTS ARE ACCEPTABLE UNDER THIS TEST IF NO FAILURES OCCUR IN THE LIFE TEST SAMPLES, OR IF ONE TUBE FAILURE HAS OCCURED IN THE PREVIOUS TWENTY-FIVE (25) TUBES TESTED.

6X4W
PREMIUM TUBE

TENTATIVE DATA