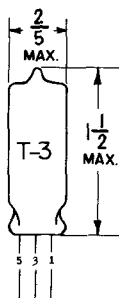


TUNG-SOL

DIODE

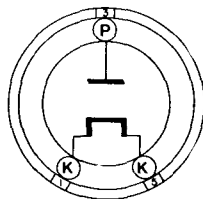
SUBMINIATURE TYPE



GLASS BULB

GAS DIODE

ANY MOUNTING POSITION



BOTTOM VIEW

0.016" TINNED
FLEXIBLE LEADS

0.096" CENTER-TO-CENTER

THE 5783WB IS A COLD-CATHODE, GAS FILLED, GLOW-DISCHARGE DIODE OF SUBMINIATURE CONSTRUCTION DESIGNED FOR USE AS A VOLTAGE REFERENCE TUBE IN ELECTRONICALLY REGULATED DC POWER SUPPLIES. IT HAS AN OPERATING CURRENT RANGE OF 1.5 TO 3.5 MILLIAMPERES OVER WHICH IT MAINTAINS A SUBSTANTIALLY CONSTANT OPERATING VOLTAGE OF 86 VOLTS. TWO CATHODE LEADS ARE PROVIDED FOR USE IN CIRCUITS WHICH SERVE TO DISCONNECT THE LOAD WHEN THE TUBE IS REMOVED FROM THE SOCKET. THIS TUBE IS DESIGNED FOR SERVICE WHERE SEVERE CONDITIONS OF HIGH TEMPERATURE AND MECHANICAL SHOCK OR VIBRATION ARE ENCOUNTERED. THE FLEXIBLE LEADS MAY BE SOLDERED OR WELDED DIRECTLY TO THE TERMINALS OF CIRCUIT COMPONENTS WITHOUT THE USE OF SOCKETS. STANDARD SUBMINIATURE SOCKETS MAY BE USED BY CUTTING THE LEADS TO A SUITABLE LENGTH.

RATINGS

MECHANICAL

MAXIMUM IMPACT ACCELERATION (SHOCK TEST- NOTE 2)	450	G
MAXIMUM UNIFORM ACCELERATION (CENTRIFUGE TEST-NOTE 4)	1000	G
MAXIMUM VIBRATIONAL ACCELERATION (100 HR. FATIGUE TEST-NOTE 3)	2.5	G
MAXIMUM BULB TEMPERATURE	155	°C

RATINGS

	Ebb Vdc	TOTAL DARKNESS STARTING VOLTAGE Vdc	AMB. LIGHT STARTING VOLTAGE Vdc	OPERATING VOLTAGE RANGE Vdc	OPERATING CURRENT RANGE mAde (NOTE 7)	AMBIENT TEMP. °C (NOTE 7)
ABSOLUTE:						
MAXIMUM:				91	3.5	+150
MINIMUM:	145	140	115	81	1.5	-55
TEST CONDITIONS:	150					25±5

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CHARACTERISTICS AND QUALITY CONTROL TESTS¹

TEST	AQL %	MIL-E-1B SYMBOL	MIN.	MAX.	MIL-E-1B UNITS
ACCEPTANCE TESTS-GROUP C					
CONTINUITY AND SHORTS	0.4				
ACCEPTANCE TESTS-GROUP D					
COMBINED AQL = 1.0%					
IONIZATION VOLTAGE (1): Rp / Ib = 1.5-3.5 mA _{dc} ;					
AMBIENT LIGHT	0.65	(1)Ez:		115	V _{dc}
TUBE VOLTAGE DROP (1): Rp/Ib = 3.5 mA _{dc}	0.65	(1)Etd:		89.0	V _{dc}
TUBE VOLTAGE DROP (2): Rp/Ib = 1.5 mA _{dc}	0.65	(2)Etd:	83.0		V _{dc}
REGULATION: (1) Etd -(2) Etd	0.65	Reg.		3.0	V _{dc}
VOLTAGE JUMP: (NOTE 8)	0.65	Jump:		5.0	mV _{dc}
ACCEPTANCE TESTS-GROUP E					
NOISE: Rp/Ib = 3.5 mA _{dc}	1.0	Eb:		20	mV _{ac}
OSCILLATION: Esig = 100 mV _{ac} ; Rp/Ib = 1.5 - 3.5 mA _{dc}	1.0				
ACCEPTANCE TESTS-GROUP F					
IONIZATION VOLTAGE (2) Rp/Ib = 1.5 - 3.5 mA _{dc}					
TOTAL DARKNESS	6.5	(2)Ez:		140	V _{dc}
LEAKAGE CURRENT: Eb = 50 V _{dc} ; Rp = 3000 OHMS	6.5	L1B:		20	μA _{dc}
VIBRATION (2) F = 40 cps; G = 15; Rp = 10,000 OHMS; Ebb/Ib = 2.5 mA _{dc}	6.5	Ep:		50	mV _{ac}
TUBE VOLTAGE DROP (3): Rp/Ib = 2.5 mA _{dc}	6.5	(3)Etd:	84	98	V _{dc}
ACCEPTANCE TESTS-GROUP G					
REPEATABILITY: Rp/Ib = 2.5 mA _{dc} (NOTE 5)	6.5	Δ(3)Etd:		100	mV _{dc}
ACCEPTANCE TESTS-GROUP A					
SHOCK: HAMMER ANGLE = 30° (NOTE 2)					
FATIGUE 96 HRS. (NOTE 3)	6.5				
POST SHOCK AND FATIGUE TEST END POINTS:					
IONIZATION VOLTAGE (1): Rp/Ib = 1.5-3.5 mA _{dc}		(1)Ez:		115	V _{dc}
TUBE VOLTAGE DROP (1): Rp/Ib = 3.5 mA _{dc}		(1)Etd:	81	91	V _{dc}
TUBE VOLTAGE DROP (2): Rp/Ib = 1.5 mA _{dc}		(2)Etd:	81	91	V _{dc}
REGULATION: (1) Etd - (2) Etd		Reg:		4.0	V _{dc}

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CHARACTERISTICS AND QUALITY CONTROL TESTS¹ - cont'd.

TEST	AQL %	MIL-E-1B SYMBOL	MIN.	MAX.	MIL-E-1B UNITS
ACCEPTANCE TESTS-GROUP B					
SUBMINIATURE:	2.5		4		Arcs
LEAD FATIGUE TEST					
GLASS STRAIN (THERMAL SHOCK):	6.5				

ACCEPTANCE LIFE TESTS

1 HOUR STABILITY LIFE TEST:

TA = Room; Rp/Ib = 2.5 mAdc

1 HOUR STABILITY LIFE TEST

END POINTS:

 Δ TUBE VOLTAGE DROP (3):(NOTE 6) (TYPICAL SAMPLE
SIZE = 50 TUBES)6.5 $\Delta(3)$ Etd: 200 mVdc100 HOUR SURVIVAL RATE LIFE
TEST:

TA = Room; Rp/Ib = 2.5 mAdc

100 HOUR SURVIVAL RATE LIFE

TEST END POINTS:

INOPERATIVES:

(TYPICAL SAMPLE SIZE =
200 TUBES)

0.4

 Δ TUBE VOLTAGE DROP (3):(NOTE 6) (TYPICAL SAMPLE
SIZE = 25 TUBES)6.5 $\Delta(3)$ Etd: 1.0 Vdc

500 HOUR INTERMITTENT HIGH

TEMPERATURE LIFE TEST (1):

TA = 150 °C; Rp/Ib = 2.5 mAdc

TEST	MAX. DEF. PER CHARACTERISTICS		MIL-E-1B SYMBOL	MIN.	MAX.	MIL-E-1B UNITS
	1st SAMPLE	COMB. SAMPLE				
500 HOUR INTERMITTENT HIGH TEMPERATURE LIFE TEST (1) END POINTS: (TYPICAL SAMPLE SIZE= 20 TUBES, 1st SAMPLE; 40 TUBES 2nd SAMPLE)						
INOPERATIVES:	1	3				
REGULATION (1):	1	3	Reg:		4.0	Vdc
TUBE VOLTAGE DROP (1):	1	3	(1)Etd:	81	91	Vdc
TUBE VOLTAGE DROP (2):	1	3	(2)Etd:	81	91	Vdc
TUBE VOLTAGE DROP (3):	1	3	(3)Etd:	84	89	Vdc
IONIZATION VOLTAGE (1):	1	3	(1)Ez:		115	Vdc
Δ TUBE VOLTAGE DROP (3): (NOTE 6)	1	3	$\Delta(3)$ Etd:		4	Vdc
TOTAL DEFECTIVES	4	8				
5000 HOUR INTERMITTENT LIFE TEST (2): TA = Room; Rp/Ib = 2.5 mAdc						
5000 HOUR INTERMITTENT LIFE TEST (2) END POINTS: READ FOR SAME CHARAC- TERISTICS AS INTERMITTENT LIFE						
TEST (1) LIMITS NOT ESTABLISHED						

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NOTES

- NOTE 1: CHARACTERISTICS, QUALITY CONTROL TEST PROCEDURES, AND INSPECTION LEVELS ARE MADE ACCORDING TO THE APPROPRIATE PARAGRAPHS OF MIL-E-1B, 'INSPECTION INSTRUCTIONS FOR ELECTRON TUBES' AND MIL-STD-105A.
- NOTE 2: TEST CONDITIONS AND ACCEPTANCE CRITERIA PER SHOCK TEST PROCEDURES OF MIL-E-1B BASIC SPECIFICATIONS.
- NOTE 3: TEST CONDITIONS AND ACCEPTANCE CRITERIA PER FATIGUE TEST PROCEDURES OF MIL-E-1B BASIC SPECIFICATIONS.
- NOTE 4: CENTRIFUGE TEST WITH FORCES APPLIED IN ANY DIRECTION.
- NOTE 5: REPEATABILITY IS THE MAXIMUM SHIFT IN THE TUBE VOLTAGE DROP BETWEEN SUCCESSIVE FIRINGS OF THE TUBE.
- NOTE 6: Δ TUBE VOLTAGE DROP IS THE CHANGE IN INDIVIDUAL TUBES OF TUBE VOLTAGE DROP (3) FROM THE BEGINNING OF LIFE TO ITS VALUE AT THE SPECIFIED LIFE HOUR(S).
- NOTE 7: LIMITS BEYOND WHICH NORMAL TUBE PERFORMANCE AND TUBE LIFE MAY BE IMPAIRED.
- NOTE 8: SUDDEN VOLTAGE JUMPS AS MEASURED ON AN OSCILLOSCOPE CONNECTED ACROSS THE TUBE, WITH THE CURRENT THROUGH THE TUBE VARIED SLOWLY OVER ITS OPERATING RANGE, SHOULD BE LESS THAN 5 mVdc.

