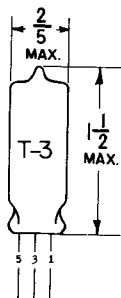


**TUNG-SOL**

**DIODE**

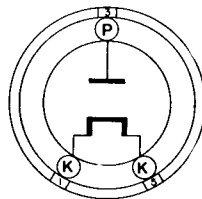
SUBMINIATURE TYPE



**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 V <sub>dc</sub>	TOTAL DARKNESS STARTING VOLTAGE V <sub>dc</sub>	AMB. LIGHT STARTING VOLTAGE V <sub>dc</sub>	OPERATING VOLTAGE RANGE V <sub>dc</sub>	OPERATING CURRENT RANGE mAdc (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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## TUNG-SOL

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CHARACTERISTICS AND QUALITY CONTROL TESTS<sup>1</sup>

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/lb = 1.5-3.5 mAdc;					
AMBIENT LIGHT	0.65	(1)Ez:		115	Vdc
TUBE VOLTAGE DROP (1): Rp/lb = 3.5 mAdc	0.65	(1)Etd:		89.0	Vdc
TUBE VOLTAGE DROP (2): Rp/lb = 1.5 mAdc	0.65	(2)Etd:	83.0		Vdc
REGULATION:					
(1) Etd -(2) Etd	0.65	Reg.		3.0	Vdc
VOLTAGE JUMP: (NOTE 8)	0.65	Jump:		5.0	mVdc
ACCEPTANCE TESTS-GROUP E					
NOISE: Rp/lb = 3.5 mAdc					
OSCILLATION: Esig = 100 mVac; Rp/lb = 1.5 - 3.5 mAdc	1.0	Eb:		20	mVac
ACCEPTANCE TESTS-GROUP F					
IONIZATION VOLTAGE (2) Rp/lb = .5 -3.5 mAdc					
TOTAL DARKNESS	6.5	(2)Ez :		140	Vdc
LEAKAGE CURRENT: Eb = 50 Vdc; Rp = 3000 OHMS					
VIBRATION (2) F = 40 cps; G = 15; Rp = 10,000 OHMS; Ebb/lb = 2.5 mAdc	6.5	LIB:		20	μAdc
TUBE VOLTAGE DROP (3): Rp/lb = 2.5 mAdc	6.5	(3)Etd:	84	98	Vdc
ACCEPTANCE TESTS-GROUP G					
REPEATABILITY: Rp/lb = 2.5 mAdc (NOTE 5)					
	6.5	Δ(3)Etd:		100	mVdc
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/lb = 1.5-3.5 mAdc					
TUBE VOLTAGE DROP (1): Rp/lb = 3.5 mAdc		(1)Ez:		115	Vdc
TUBE VOLTAGE DROP (2): Rp/lb = 1.5 mAdc		(1)Etd:	81	91	Vdc
REGULATION: (1) Etd - (2) Etd		(2)Etd:	81	91	Vdc
		Reg:		4.0	Vdc

**TUNG-SOL**

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**CHARACTERISTICS AND QUALITY CONTROL TESTS<sup>1</sup> - 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	Δ(3)Etd:		200	mVdc
100 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	Δ(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 1st SAMPLE	COMB. SAMPLE	MIL-E-1B SYMBOL	MIN.	MAX.	MIL-E-1B UNITS
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	Δ(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						

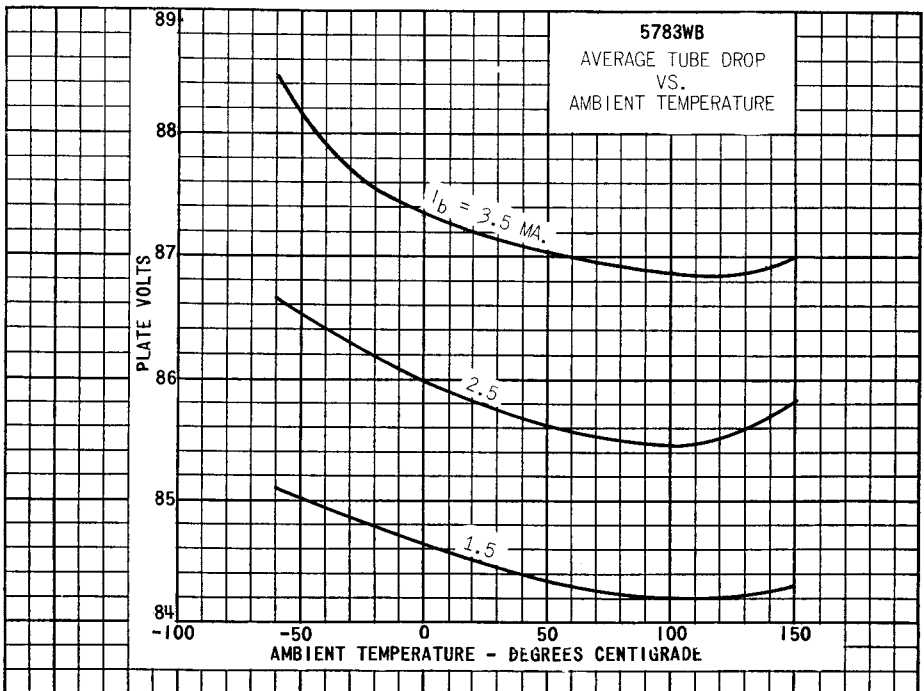
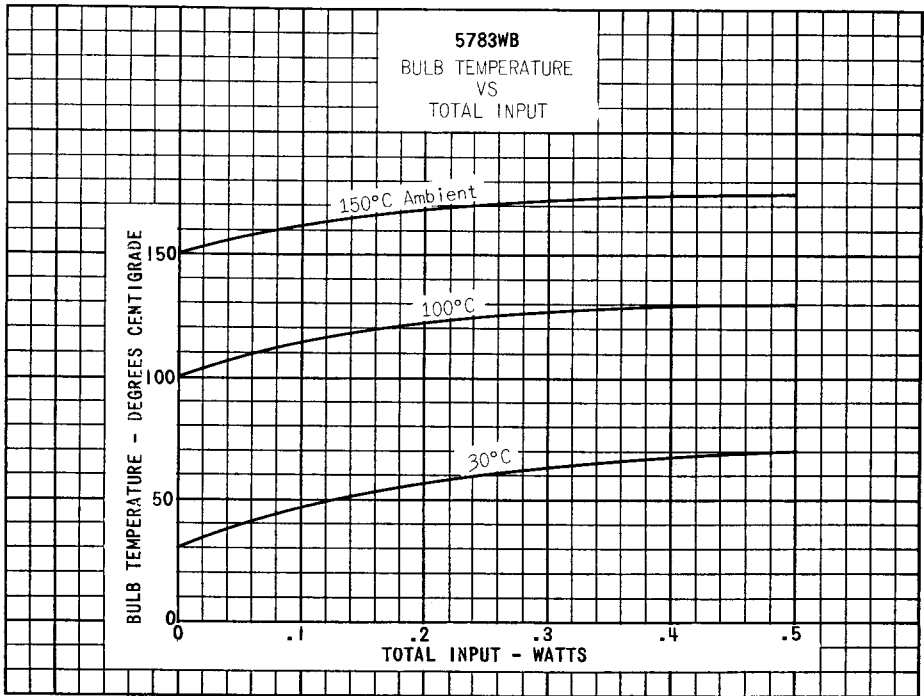
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## NOTES

- 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:  $\Delta$ 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.



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