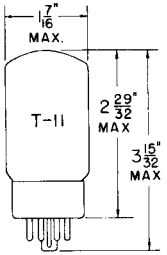
TUNG-SOL

PENTODE

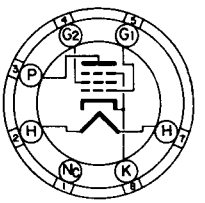


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
6.3 VOLTS 0.9 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
SHORT INTERMEDIATE
SHELL 7 PIN
LOW LOSS PHENOLIC
7S

THE 6L6WGB IS A RUGGEDIZED BEAM PENTODE OF THE SINGLE ENDED CONSTRUCTION USED PRIMARILY IN AUDIO POWER OUTPUT STAGES. IT IS ELECTRICALLY EQUIVALENT TO TYPES 6L6 AND 6L6G, EXCEPT THAT PLATE AND SCREEN DISSIPATIONS HAVE BEEN INCREASED APPROXIMATELY 20%. THE USE OF SPECIALLY COATED GRIDS AND ANODES GREATLY INCREASES ITS ABILITY TO WITHSTAND OVERLOAD CONDITIONS FOR SHORT PERIODS OF TIME AND PROVIDES IMPROVEMENT IN CONTINUITY OF SERVICE. THE 6L6WGB EMPLOYS A MICANOL BARRIER BASE WHICH ABSORBS LESS MOISTURE AND REDUCES THE CHANCE OF VOLTAGE BREAKDOWN BETWEEN ADJACENT PINS. SINCE THIS TUBE MUST BE ABLE TO WITHSTAND SEVERE MECHANICAL TESTS TO MEET TEST SPECIFICATIONS, THE 6L6WGB IS ESPECIALLY SUITED FOR USE IN INDUSTRIAL AND MILITARY EQUIPMENT WHICH MAY BE SUBJECTED TO SEVERE SHOCK AND VIBRATION, SUCH AS AIRBORNE EQUIPMENT.

DIRECT INTERELECTRODE CAPACITANCES

	WITHOUT SHIELD	
GRID TO PLATE (RATED)	0.9	μμf
INPUT (RATED)	11.5	μμf
OUTPUT (RATED)	9.5	μμf

RATINGS
ABSOLUTE MAXIMUM VALUES

HEATER VOLTAGE	6.3±10%	VOLTS
MAXIMUM DC PLATE VOLTAGE	400	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	300	VOLTS
MAXIMUM PLATE DISSIPATION	26	WATTS
MAXIMUM GRID #2 DISSIPATION	3.5	WATTS
MAXIMUM HEATER CATHODE VOLTAGE	±200	VOLTS
MAXIMUM ALTITUDE	10 000	FEET
MAXIMUM SHOCK	450	G

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TUNG-SOL

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A_1 AMPLIFIER

SINGLE TUBE

	TRIODE*		PENTODE		
HEATER VOLTAGE	6.3	6.3	6.3	6.3	VOLTS
HEATER CURRENT	0.9	0.9	0.9	0.9	AMP.
PLATE VOLTAGE	250	250	300	350	VOLTS
GRID #2 VOLTAGE	---	250	200	250	VOLTS
GRID #1 VOLTAGE	-20	-14	-12.5	-18	VOLTS
PEAK AF GRID #1 VOLTAGE	20	14	12.5	18	VOLTS
ZERO SIGNAL PLATE CURRENT	40	72	48	54	mA
ZERO SIGNAL GRID #2 CURRENT	---	5	2.5	2.5	mA
MAXIMUM SIGNAL GRID #2 CURRENT	---	7.3	4.7	7.0	mA
TRANSCONDUCTANCE	4700	6000	5300	5200	µMHOS
PLATE RESISTANCE	1700	22 500	35 500	33 000	OHMS
AMPLIFICATION FACTOR	8	---	---	---	OHMS
LOAD RESISTANCE	5000	2500	4500	4200	OHMS
MAXIMUM SIGNAL POWER OUTPUT	1.4	6.5	6.5	10.8	WATTS
TOTAL HARMONIC DISTORTION (APPROX)	5	10	11	15	PERCENT
MAXIMUM SIGNAL PLATE CURRENT	44	79	55	66	mA

PUSH-PULL AMPLIFIER

VALUES FOR TWO TUBES

	CLASS A1		CLASS AB1		CLASS AB2		
HEATER VOLTAGE	6.3	6.3	6.3	6.3	6.3	6.3	VOLTS
HEATER CURRENT	0.9	0.9	0.9	0.9	0.9	0.9	AMP.
PLATE VOLTAGE	250	270	360	360	360	360	VOLTS
GRID #2 VOLTAGE	250	270	270	270	225	270	VOLTS
GRID #1 VOLTAGE	-16	-17.5	-22.5	-22.5	-18	-22.5	VOLTS
PEAK AF GRID TO GRID VOLTAGE	32	35	45	45	52	72	VOLTS
ZERO SIGNAL PLATE CURRENT	120	134	88	88	78	88	mA
MAX. SIGNAL PLATE CURRENT	140	155	132	140	142	205	mA
ZERO SIGNAL GRID #2 CURRENT	10	11	5	5	3.5	5	mA
MAX. SIGNAL GRID #2 CURRENT	16	17	15	11	11	16	mA
TRANSCONDUCTANCE (EA. TUBE)	5500	5700	---	---	---	---	µMHOS
PLATE RESISTANCE (EA. TUBE)	24500	23500	---	---	---	---	OHMS
LOAD RESISTANCE	5000	5000	6600	3800	6000	3800	OHMS
POWER OUTPUT	14.5	17.5	26.5	18	31	47	WATTS
TOTAL HARMONIC DISTORTION	2	2	2	2	2	2	PERCENT

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

E_f = 6.3V, E_b = 250Vdc, E_{c2} = 250Vdc, E_{c1} = -14Vdc

EXCEPT AS MODIFIED BELOW

	INITIAL				500 HOUR LIFE TEST		
	INDIVIDUAL MIN.	INDIVIDUAL MAX.	PROD. MIN.	AVG. MAX.	INDIVIDUAL MIN.	INDIVIDUAL MAX.	
HEATER CURRENT	840	960	---	---	---	---	mA
HEATER CATHODE LEAKAGE	0	75	---	---	---	---	µAdc
GRID #1 CURRENT (E_b=400Vdc, E_{c2}=300Vdc E_{c1}=-19Vdc)	0	-3.0	---	---	---	---	µAdc
PLATE CURRENT (E_b=400Vdc, E_{c2}=300Vdc, E_{c1}=-22Vdc)	50	80	---	---	---	---	mAdc
SCREEN GRID CURRENT (E_b=400Vdc, E_{c2}=300Vdc E_{c1}=-22Vdc)	0	5.0	---	---	---	---	mAdc

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CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN – CONT'D.

E_f = 6.3V, E_b = 250Vdc, E_{c2} = 250Vdc, E_{c1} = −14Vdc
EXCEPT AS MODIFIED BELOW

TRANSCONDUCTANCE	5200	6800	---	---	---	---	μMHOS
POWER OUTPUT (E_{sig}=9.8 Vac, R_p= 2500 OHMS)	5.4	---	---	---	---	---	WATTS
GRID EMISSION (E_b=E_{c1}=E_{c2}=50Vdc)	275	---	---	---	---	---	mAdc

SPECIAL REQUIREMENTS

VARIABLE FREQUENCY VIBRATION[A] (R_p=2000 OHMS, E_{c1}=−27Vdc)	---	1000	mVac
LOW FREQUENCY VIBRATION[B] (R_p=2000 OHMS, E_{c1}=−27Vdc)	---	1000	mVac
SHOCK[C] (HAMMER ANGLE = 30°, E_f=−6.3V)	---	---	
VIBRATIONAL FATIGUE[D]	---	---	
POST SHOCK AND VIBRATIONAL FATIGUE TEST END POINTS			
LOW FREQUENCY VIBRATION	---	1000	Vac
HEATER CATHODE LEAKAGE	0	100	μAdc
TRANSCONDUCTANCE	4500	---	μMHOS
MECHANICAL RESONANCE[E]	---	---	
AF NOISE[F] (E_{sig} = 280mVac, R_p = 2000 OHMS)	---	17	VU
LIFE TEST END POINT			
POWER OUTPUT	4.0	---	WATTS
TRANSCONDUCTANCE	4500	---	μMHOS

NOTES

*GRID #2 CONNECTED TO PLATE

[A] SEE MIL-E-1C 4.9.20.3

[B] SEE MIL-E-1C 4.9.20.4

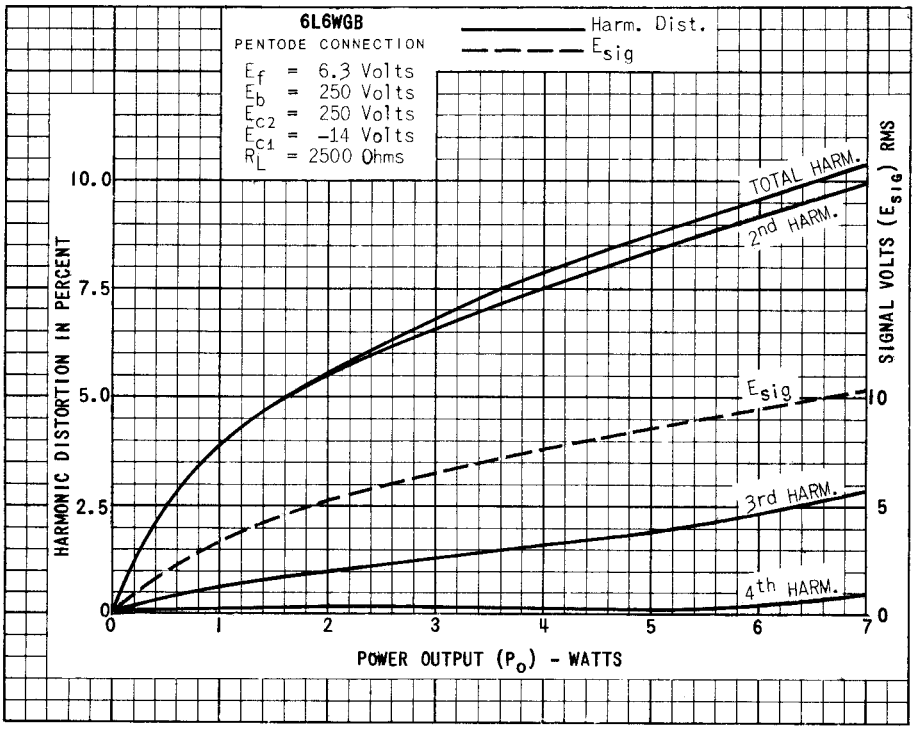
[C] SEE MIL-E-1C 4.9.20.5

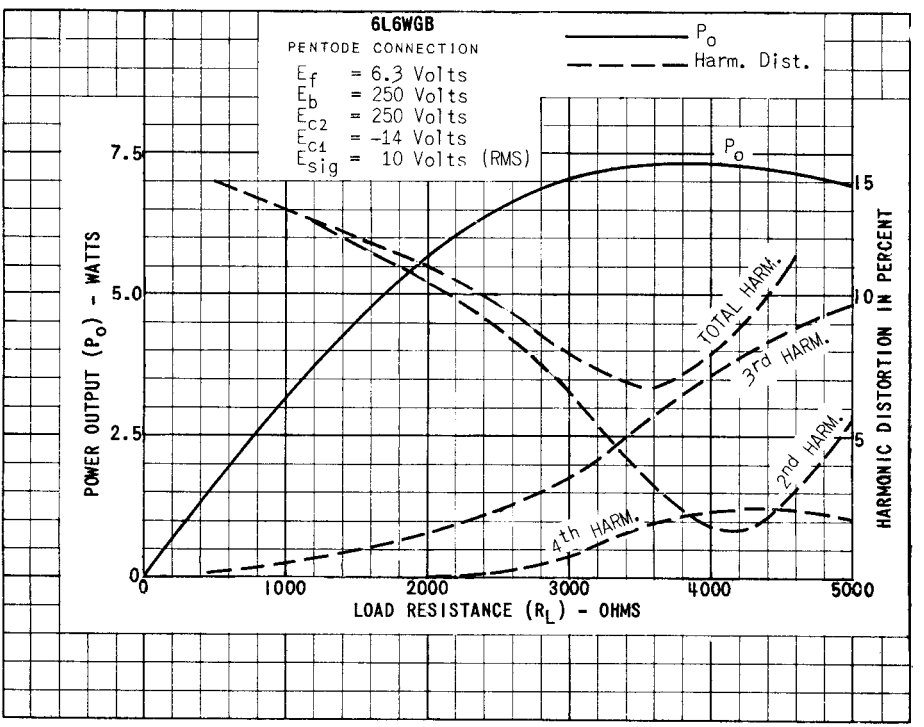
[D] SEE MIL-E-1C 4.9.20.6

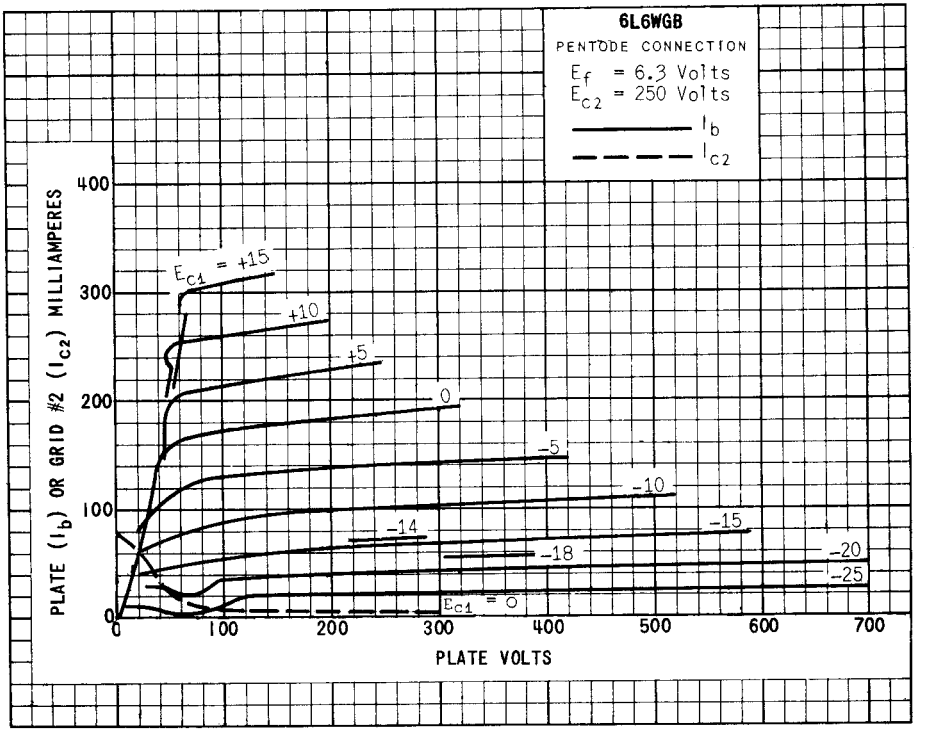
[E] THE MOUNT SHALL SHOW NO PRONOUNCED MECHANICAL RESONANCE BELOW 100 CPS.

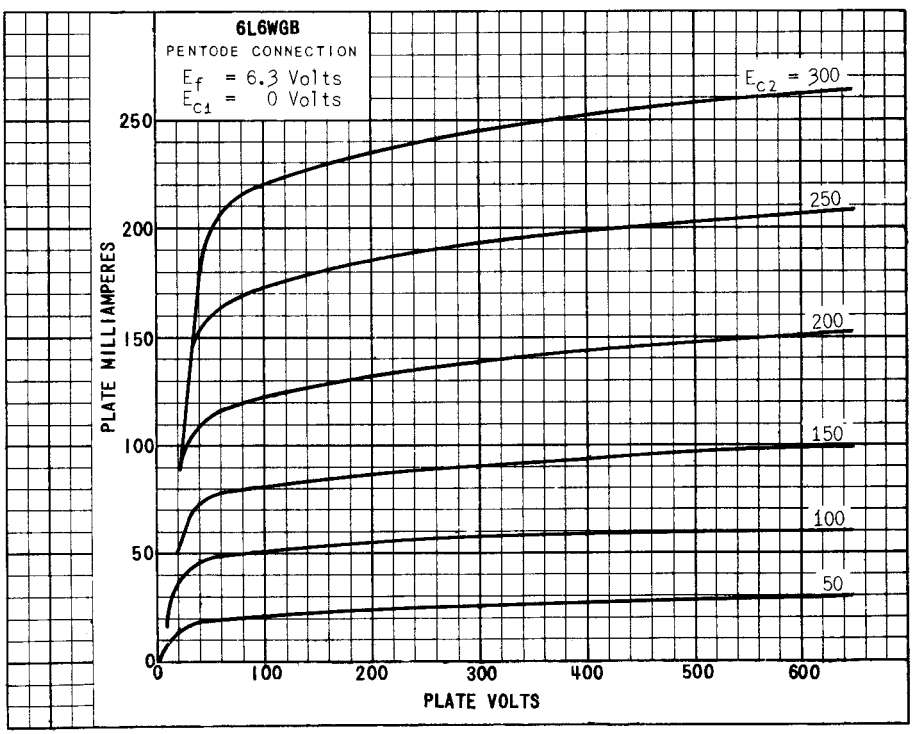
[F] SEE MIL-E-1C 4.10.3.2

6L6WGB
PREMIUM TUBE






6L6WGB
PENTODE CONNECTION
E_f = 6.3 Volts
E_{c2} = 250 Volts
I_b
I_{c2}
PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES
PLATE VOLTS
E_{c1} = +15
+10
+5
0
-5
-10
-14
-15
-18
-20
-25
E_{c1} = 0
0
100
200
300
400
500
600
700


6L6WGB
PENTODE CONNECTION
E_f = 6.3 Volts
E_{c1} = 0 Volts
PLATE MILLIAMPERES
PLATE VOLTS
E_{c2} = 300
250
200
150
100
50
0
50
100
150
200
250
0
100
200
300
400
500
600

6L6WGB
PREMIUM TUBE