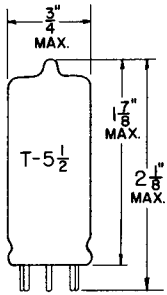
TUNG-SOL

PENTODE
MINIATURE TYPE

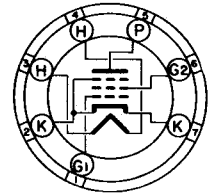


GLASS BULB
6-2

COATED UNIPOTENTIAL CATHODE

HEATER

6.3±10% VOLTS 0.30 AMP.



BOTTOM VIEW
MINIATURE BUTTON
7 PIN BASE

THE 6186/6AG5WA IS A SHARP CUTOFF PENTODE IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED FOR USE AS AN INTERMEDIATE FREQUENCY OR RF AMPLIFIER. THROUGH THE USE OF TWO CATHODE LEADS, ISOLATION OF INPUT AND OUTPUT CIRCUITS IS MADE FEASIBLE

RATINGS
AND NORMAL OPERATION

	MIL-E-1 SYMBOL	TEST CONDITIONS	ABS. MAX.	MIL-E-1 UNITS
HEATER VOLTAGE	Ef	6.3	6.3±10%	V
PLATE VOLTAGE	Eb	250	330	Vdc
GRID #1 VOLTAGE	Ec1	0		Vdc
GRID #2 VOLTAGE	Ec2	150	250	Vdc
CATHODE RESISTANCE	Rk	200		OHMS
GRID #2 DISSIPATION	Pg2		0.55	W
PLATE DISSIPATION	Pp		2.5	W
HEATER-CATHODE VOLTAGE	Ehk		100	V
BUBB TEMPERATURE			+165	°C
ALTITUDE		NOTE 11		

CHARACTERISTICS AND QUALITY CONTROL TESTS

TEST QUALIFICATION APPROVAL TESTS	AQL %	MIL-E-1 SYMBOL	MAX.	MIL-E-1 UNITS
QUALIFICATION APPROVAL:				
CARTON DROP:				
(d) PACKAGE GROUP 1; CARTON SIZE B;				
VIBRATION (1):				
Rp = 2000	---	Ep:	100	mVac

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CHARACTERISTICS AND QUALITY CONTROL TESTS - cont'd.

TEST	AQL %	MIL-E-1 SYMBOL	MIN.	BOG.	MAX.	MIL-E-1 UNITS
ACCEPTANCE TESTS- GROUP A						
FATIGUE:						
NOTE 3	6.5					
SHOCK:						
HAMMER ANGLE=30°						
Ehk=100 Vdc, HEATER						
POSITIVE; Rg1=0.1Meg.	---					
POST SHOCK AND &						
FATIGUE TEST END						
POINTS						
VIBRATION (2):	---	Ep:	---	---	450	mVac
HEATER-CATHODE LEAKAGE:						
HEATER POSITIVE	---	Ihk	---	---	30	μAdc
HEATER NEGATIVE	---	Ihk:	---	---	30	μAdc
TRANSCONDUCTANCE (1):	---	Sm:	3500	---	---	μMHOS
GRID CURRENT (1):	---	Ic1:	0	---	-0.2	μAdc
ACCEPTANCE TESTS- GROUP B						
GLASS STRAIN:	2.5	---	---	---	---	---
ACCEPTANCE TESTS- GROUP C						
CONTINUITY & SHORT:	0.4	---	---	---	---	---
ACCEPTANCE TESTS GROUP D - NOTE 6						
HEATER CURRENT	0.65	If:	275	300	375	mA
HEATER-CATHODE LEAKAGE:						
Ehk=100 Vdc, HEATER POS.	0.65	Ihk:	---	---	10	μAdc
Ehk=100 Vdc, HEATER NEG.			---	---	10	μAdc
GRID CURRENT (1):	0.65	Ic1:	0	---	-0.1	μAdc
PLATE CURRENT (1):	0.65	Ib:	5.2	---	8.8	mAdc
SCREEN GRID CURRENT:	0.65	Ic2:	1.3	---	2.7	mAdc
TRANSCONDUCTANCE (1):	0.65	Sm:	4000	---	6000	μMHOS
ACCEPTANCE TESTS- GROUP E						
INSULATION OF ELECTRODES:						
Ef = 6.3 V						
E(g1-all)=100Vdc, g1 Neg.	2.5	Rg1-all:	100	---	---	MEG
E(p-all)=300Vdc, p Neg.		Rp-all:	100	---	---	MEG.
PLATE CURRENT (2):						
Rk=0; Ec1=-4.5 Vdc	2.5	Ib:	5	---	---	μAdc
PLATE CURRENT (3):						
Rk=0; Ec1=-10Vdc	2.5	Ib:	---	---	100	μAdc
TRANSCONDUCTANCE (2):						
Ef = 5.7 V.	2.5	ΔSm:	---	---	15	PERCENT

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CHARACTERISTICS AND QUALITY CONTROL TESTS - cont'd.

TEST	AQL %	MIL-E-1 SYMBOL	MIN.	BOG.	MAX.	MIL-E-1 UNITS
ACCEPTANCE TESTS- GROUP E- cont'd.						
GRID CURRENT (2): Ef =7.0 V; Rg1= 0.1 Meg.	2.5	Ic1:	0	---	-0.2	μAdc
RF NOISE: Ec1=-2Vdc; Eca1=15.0 mVac	2.5	---	---	---	3	mW
NOISE & MICROPHONICS: Ef=6.3Vac; Ehk=0; Ebb= Ecc2=300Vdc; Rg2=0.06 Meg; Rp=0.01 Meg; Rk= 200	2.5	---	---	---	50	mVac
ACCEPTANCE TESTS- GROUP F						
VIBRATION (2): Rp = 2000	6.5	Ep:	---	---	100	mVac
CAPACITANCE: NO SHIELD		Cgp:	---	---	0.03	pf
NO SHIELD	6.5	Cin:	5.2	---	7.8	pf
NO SHIELD		Cout:	1.3	---	2.3	pf
LOW PRESSURE VOLTAGE BREAKDOWN: NOTE 10	6.5		500	---	---	Vac

	AQL %	ALLOWABLE DEF. PER CHARACTER. 1st SAMP.	COMB. SAMP.	MIL-E-1 SYMBOL	MIN.	MAX.	MIL-E-1 UNITS
ACCEPTANCE LIFE TESTS:							
STABILITY LIFE TEST: INTERMITTENT LIFE TEST CONDITIONS:NOTE 7	---	---	---		---	---	
STABILITY LIFE TEST END POINTS: TRANSCONDUCTANCE (1):	1.0	---	---	ΔSm:	---	10	PERCENT
SURVIVAL RATE LIFE TEST: INTERMITTENT LIFE TEST CONDITIONS OR EQUIVALENT: NOTE 7	0.65	---	---		---	---	
INTERMITTENT LIFE TEST: Ehk=100Vdc; HEATER POS.; Rg1=1.0 Meg; MIN. BULB TEMP.=+165°C	---	---	---		---	---	

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CHARACTERISTICS AND QUALITY CONTROL TESTS - cont'd.

TEST	AQL %	ALLOWABLE DEF. PER CHARACTER. 1st. SAMP.	ALLOWABLE DEF. PER CHARACTER. COMB. SAMP.	MIL-E-1 SYMBOL	MIN.	MAX.	MIL-E-1 UNITS
ACCEPTANCE LIFE TESTS:- cont'd.							
INTERMITTENT LIFE TEST END POINTS (500 HOURS):							
INOPERATIVES	---	1	3		---	---	
HEATER CURRENT	---	1	3	If:	275	325	mA
HEATER CATHODE LEAKAGE:							
HEATER POSITIVE	---	1	3	Ihk:	---	10	μAdc
HEATER NEGATIVE				Ihk	---	10	μAdc
GRID CURRENT (1)	---	1	3	Ic1:	0	-0.1	μAdc
TRANSCONDUCTANCE (1)	---	1	3	Sm:	3750	6000	μMHOS
TRANSCONDUCTANCE (1) AVG. CHANGE:	---	---	---	AVG.ΔSm:	---	15	PERCENT
TRANSCONDUCTANCE (2)	---	2	5	ΔSm:	---	15	PERCENT
INSULATION OF ELECTRODES:							
(g1-all)	---	2	5	Rg1-all:	50	---	MEG.
(p-all)				Rp-all)	50	---	MEG.
INTERMITTENT LIFE TEST END POINTS (1000 HRS.)							
INOPERATIVES	---	2	5		---	---	
HEATER CURRENT:	---	2	5	If:	275	325	mA
HEATER CATHODE LEAKAGE:							
HEATER POSITIVE	---	2	5	Ihk:	---	10	μAdc
HEATER NEGATIVE				Ihk:	---	10	μAdc
GRID CURRENT (1)	---	2	5	Ic1:	0	-0.1	μAdc
TRANSCONDUCTANCE (1)	---	2	5	Sm:	3500	6000	μMHOS

GENERAL NOTE:

GENERAL TUBE MARKING REQUIREMENTS AS CONTAINED IN SPECIFICATION MIL-E-1 AND INSPECTION INSTRUCTIONS FOR ELECTRON TUBES SHALL APPLY TO TUBES MANUFACTURED IN ACCORDANCE WITH THIS TEST SPECIFICATION SHEET EXCEPT THAT THE LAST 2 DIGITS OF THE YEAR OF MANUFACTURE SHALL BE SHOWN RATHER THAN THE SINGLE LAST DIGIT. ALSO EACH TUBE SHALL BE MARKED WITH A LOT IDENTIFICATION SYMBOL, LETTER OR FIGURE, SO THAT TUBES OF A GIVEN LOT MAY BE IDENTIFIED.

A LOT AS REFERENCED IN THIS SPECIFICATION SHALL BE AS SPECIFIED IN PARAGRAPH 5.3.1.3 INSPECTION INSTRUCTIONS FOR ELECTRON TUBES.

NOTES:

1, DIFFICULTY MAY BE ENCOUNTERED IF THIS TUBE IS OPERATED FOR LONG PERIODS OF TIME WITH VERY SMALL VALUES OF CATHODE CURRENT.

2, IF IT IS DESIRED TO CHECK QUALITY SUBSEQUENT TO LOT ACCEPTANCE, THE CONDITIONS AND ACCEPTANCE LIMITS SET FORTH IN THIS SPECIFICATION SHALL APPLY. WHEN 100% TESTING IS PERFORMED AND THE RESULTS INDICATE THAT THE PERCENTAGE OF DEFECTIVES IS EQUAL TO OR LESS THAN THE SPECIFIED AQL VALUES, THE LOT IS DEEMED AS COMPLYING WITH THE INTENT OF THE SPECIFICATION.

3, THIS TEST SHOULD BE CONDUCTED ON THE INITIAL PRODUCTION LOT AND THEREAFTER ON A LOT EVERY 30 DAYS APPROXIMATE. IN THE EVENT OF LOT FAILURE, THE LOT IS REJECTED AND SUCCEEDING LOT IS SUBJECTED TO THIS TEST. ONCE A LOT HAS PASSED, THE 30 DAY RULE SHALL APPLY. MIL-STD-105, SAMPLE SIZE CODE LETTER F, NORMAL AND TIGHTENED INSPECTION TABLES TO APPLY.

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4, REFERENCE MIL-STD-105, SAMPLE SIZE CODE LETTER E. NORMAL AND TIGHTENED INSPECTION TABLES TO APPLY.

5, REFERENCE MIL-STD-105, SAMPLE SIZE CODE LETTER I, NORMAL AND TIGHTENED INSPECTION TABLES TO APPLY.

6, THE AQL FOR THE COMBINED DEFECTIVES FOR ATTRIBUTES IN GROUP D SHALL BE ONE (1) PERCENT. A TUBE HAVING ONE (1) OR MORE DEFECTS SHALL BE COUNTED AS ONE (1) DEFECTIVE. MIL-STD-105, INSPECTION LEVEL 2 SHALL APPLY.

7, TUBES TO BE LIFE TESTED AT ROOM TEMPERATURE AMBIENT.

8, APPROVED ALTERNATE TEST - THE INSERTION OF A 1.0 MEG RESISTOR IN THE GRID CIRCUIT SHALL NOT CHANGE THE PLATE CURRENT MORE THAN 0.5 MADC.

9, THE CATHODE RESISTOR SHALL BE SHUNTED WITH A CAPACITIVE REACTANCE NOT EXCEEDING THREE (3) OHMS AT 60 CYCLES.

10, BREAKDOWN SHALL BE DEFINED AS THE VOLTAGE AT WHICH ARCING OCCURS BETWEEN ANODE BASE PIN AND ADJACENT PINS. PRESSURE = 55±5M/M MERCURY; TEMPERATURE =25±5°C; HUMIDITY =0; VOLTAGE =500VAC, 60 CYCLES, SINUSOIDAL WAVE FORM.

11, REFERENCE SPECIFICATION SHALL BE OF THE ISSUE IN EFFECT ON THE DATE OF INVITATION FOR BID.