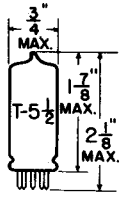
TUNG-SOL

POWER AMPLIFIER PENTODE

MINIATURE TYPE

COATED FILAMENT CATHODE



GLASS BULB

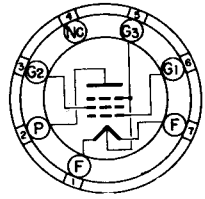
SERIES FILAMENT
E_f APPLIED BETWEEN PINS 1 & 7
E_{g1} REFERRED TO PIN 1

PARALLEL FILAMENT
E_f APPLIED BETWEEN PIN 5 AND PINS 1 & 7 TIED TOGETHER.
E_{g1} REFERRED TO PIN 5

1.25±20% VOLTS 0.1 AMP.

DC

A SHUNTING RESISTOR MUST BE CONNECTED BETWEEN PINS 1 AND 5 FOR SERIES-FILAMENT OPERATION TO BY-PASS ANY CATHODE CURRENT IN EXCESS OF THE 6 MA. RATED MAXIMUM PER SECTION. AN ADDITIONAL SHUNTING RESISTOR MAY BE NECESSARY BETWEEN PINS 1 AND 7 IF OTHER TUBES USED IN SERIES-FILAMENT ARRANGEMENT CONTRIBUTE TO THE FILAMENT CURRENT OF THE 3V4.



BOTTOM VIEW
MINIATURE BUTTON 7 PIN BASE

ANY MOUNTING POSITION

THE 3V4WA IS A POWER AMPLIFIER PENTODE UTILIZING THE 7PIN MINIATURE CONSTRUCTION. IT IS A RUGGEDIZED VERSION OF THE 3V4, MAKING IT SUITABLE FOR MILITARY EQUIPMENT APPLICATIONS.

RATINGS

POWER AMPLIFIER PENTODE

	TEST COND.	ABS. MAX.	
FILAMENT VOLTAGE	1.25	1.25±20%	VOLTS
MAXIMUM PLATE VOLTAGE	90	100	VOLTS
MAXIMUM GRID #1 VOLTAGE	-4.5	---	VOLTS
MAXIMUM GRID #2 VOLTAGE	90	100	VOLTS
MAXIMUM CATHODE CURRENT	---	13	MA.
MAXIMUM ALTITUDE		10 000	FEET

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

AF POWER AMPLIFIER - CLASS A_1

	SERIES FILAMENT	PARALLEL FILAMENT		
PLATE VOLTAGE	90	85	90	VOLTS
SCREEN VOLTAGE	90	85	90	VOLTS
GRID VOLTAGE	-4.5	-5	-4.5	VOLTS
PEAK AF GRID VOLTAGE	4.5	5	4.5	VOLTS
ZERO-SIGNAL PLATE CURRENT	7.7	6.9	9.5	MA.
ZERO-SIGNAL SCREEN CURRENT	1.7	1.5	2.1	MA.
LOAD RESISTANCE	10 000	10 000	10 000	OHMS
PLATE RESISTANCE (APPROX.)	0.12	0.12	0.1	MEGOHM
TRANSCONDUCTANCE	2 000	1 975	2 150	µMHOS
MAXIMUM-SIGNAL POWER OUTPUT	0.24	0.25	0.27	WATT
TOTAL HARMONIC DISTORTION	7	10	7	PER CENT

→ INDICATES A CHANGE.

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PERFORMANCE TESTS
(MIL-E-1)

RESONANCE:

THE TUBE UNDER TEST SHALL BE MOUNTED ON A VIBRATION TABLE VIBRATING WITH SIMPLE HARMONIC MOTION. TEST CONDITIONS OF PARAGRAPH 4.9.19.1 OF MIL-E-1 SHALL BE APPLIED AND Ep MONITORED WHILE THE FREQUENCY OF VIBRATION IS CONTINUOUSLY SWEPT FROM 50 TO 4500 cps AND THE PEAK ACCELERATION CONTROLLED CONSTANT @ 2G. TOTAL TIME OF SWEEP SHALL NOT BE LESS THAN ONE (1) MINUTE. THE MAX. VALUE OF Ep FOR THIS TEST SHALL NOT EXCEED 175 mVAC. THIS TEST SHALL BE CONSIDERED A "DESIGN TEST" AND SHALL BE CONDUCTED @ INSPECTION LEVEL 1A AND AN AQL OF 0.65%.

SHOCK:

TEST CONDITIONS OF PARAGRAPH 4.9.20.5 OF MIL-E-1 SHALL APPLY. HAMMER ANGLE SHALL BE 30°.

FATIGUE:

THE TEST CONDITIONS OF PARAGRAPH 4.9.20.6 OF MIL-E-1 SHALL APPLY.

PERFORMANCE TEST (MIL-E-1/343) DATED AUG. 14, 1953:

THE PERFORMANCE REQUIREMENTS AND APPLICABLE TESTS SHALL BE AS SPECIFIED ON SHEETS 1 & 2 OF MIL-E-1/343 EXCEPT AS FOLLOWS:

(A) ON SHEET 1, (1) THE MAXIMUM Ep FOR THE VIBRATION TEST SHALL READ "50 mVAC" AND (2) SYMBOL "Eb" AND THE MAX. VALUE "18 VU" FOR THE AF NOISE AND MICROPHONISM TEST SHALL BE DELETED.

(B) ON SHEET 2, (NOTE 1 SHALL BE CHANGED TO READ: "E_{bb}=E_{cc2}=135 VDC; E_{c1}= 0, R_{g1}= 3.3 MEG; R_p= 0.27 MEG; R_{g2}=2.0 MEG (BYPASSED WITH A 0.5 μf CAPACITOR TO −F). SET AMPLIFIER GAIN FOR 50MW OUTPUT WITH E_{sig}= 500 mVAC. THE REJECTION LEVEL SHALL BE SET AT THE VU METER READING OBTAINED DURING THE CALIBRATION.

GENERAL:

3V4WA SHALL MEET REQUIREMENTS OF MIL-E-1/343 DATED AUGUST 14, 1953 WITH FOLLOWING EXCEPTIONS.

(A) THE FILAMENT SHALL BE MADE OF COATED TUNGSTEN AND NO DAMPER BARS SHALL BE USED.

(B) ABSOLUTE MAXIMUM RATING OF FILAMENT VOLTAGE (E_f) SHALL BE 1.25 ±20% VDC.