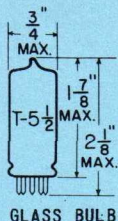


TUNG-SOL

POWER AMPLIFIER PENTODE

MINIATURE TYPE

COATED FILAMENT CATHODE



GLASS BULB

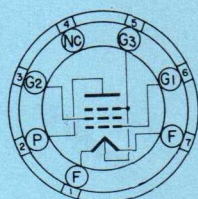
SERIES FILAMENT
 E_f APPLIED BETWEEN
 PINS 1 & 7
 E_{g1} REFERRED TO PIN 1

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

1.25 $\pm$ 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 $\pm$ 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 A₁

	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 μ MHOS
MAXIMUM-SIGNAL POWER OUTPUT	0.24	0.25	0.27 WATT
TOTAL HARMONIC DISTORTION	7	10	7 PER CENT

→ INDICATES A CHANGE.

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

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 E_p MONITORED WHILE THE FREQUENCY OF VIBRATION IS CONTINUOUSLY SWEEPED 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 E_p 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 E_p 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 μ f 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 $\pm 20\%$ VDC.