

<b>BRIMAR</b>	<b>E. I. A.</b> <b>REGISTRATION DATA</b>	TYPE 7500
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TYPE 7500 : POWER OUTPUT BEAM TETRODE.

The 7500 is a nine pin all glass construction beam tetrode for A.F. power applications.

The use of a special rugged electrode construction manufactured by means of semi-automatic assembly techniques contributes to a low catastrophic failure rate.

The cathode sleeve is made of a special alloy to inhibit the growth of cathode interface resistance during long periods of operation under cut-off conditions and the pure tungsten heater has been designed to withstand frequent heater switching (see note). In addition the heater-cathode construction and materials ensure very low levels of leakage throughout life.

The glass base and envelope strain patterns are tightly controlled during manufacture to prevent glass failures during life. Special attention is also given to the control of materials and processes to minimise variation of characteristics during life. A particular feature is the very low change in inter-electrode capacitances during life.

Note: A sample from each production lot is tested under the following elevated conditions to assess heater quality: heater voltage 120% of nominal value: heater-cathode voltage 240V r.m.s: applied voltages cycled 1 minute on, 3 minutes off for 100 hours.

MECHANICAL DATA

Coated unipotential cathode.	
Outline drawing .....	6 -3      Bulb ..... T-6 $\frac{1}{2}$
Base .....	E9-1      Small button ..... 9 pin
Maximum diameter .....	$\frac{7}{8}$ "
Maximum overall length .....	2 $\frac{5}{8}$ "
Maximum seated height .....	2 $\frac{3}{8}$ "
Pin connections .....	Basing ..... 9AH
Pin 1 - Internal connection	Pin 6 - Internal connection
Pin 2 - Grid No. 1	Pin 7 - Anode
Pin 3 - Cathode	Pin 8 - Grid No. 2
Pin 4 - Heater	Pin 9 - Grid No. 3
Pin 5 - Heater	
Mounting position .....	any
Maximum shock (intermittent service) .....	500g

ELECTRICAL DATAInter-electrode capacitances. (Without external shield)

$C_{a-g1}$	.....	0.5 pF
C in	.....	8.3 pF
C out	.....	7.0 pF

Heater:

Voltage	(ac or dc)	6.3 volts
Current		0.45 amps.

Ratings - Absolute maximum values:

Maximum heater voltage variation ....  $\pm 5\%$  of nominal value.

Maximum heater-cathode voltage:

Heater negative with respect to cathode	.....	90 volts
Heater positive with respect to cathode	.....	90 volts
Maximum anode voltage	.....	350 volts
Maximum anode dissipation	.....	13.2 watts
Maximum screen voltage	.....	310 volts
Maximum screen dissipation	.....	2.1 watts
Maximum bulb temperature (at hottest spot on bulb surface)		250 °C

RANGE OF CHARACTERISTIC VALUES FOR EQUIPMENT DESIGN. (At Zero hours)

Test conditions .....  $V_a = 250V$ ,  $V_{g3} = 0$ ,  $V_{g2} = 250V$ ,  $V_{g1} = -12.5V$ .

	<u>Min.</u>	<u>Borey</u>	<u>Max.</u>
Anode current	33	45	57 mA
Screen current	3.5	-	7.5 mA
Mutual conductance	3.0	4.1	5.2 mA/V.
Anode impedance		50	k $\Omega$

Maximum value of cathode interface resistance throughout life under cut-off conditions..... 10 $\Omega$