

BRIMAR

E. I. A. REGISTRATION DATA

TYPE	7490
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TYPE 7490: MEDIUM-MU DOUBLE TRIODE.

The 7490 is a nine pin all glass construction double triode for use in A.F. control and D.C. amplifier 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 of 240V r.m.s: applied voltages cycled 1 minute on, 3 minutes off for 100 hours.

MECHANICAL DATA

Coated unipotential cathode.

Outline drawing	6-2	Bulb	T-6 $\frac{1}{2}$
Base	E9-1	Small button	9 pin
Maximum diameter			$\frac{7}{8}$ "
Maximum overall length			2.3/16"
Maximum seated height			1.15/16"
Pin connections		Basing	9A

Pin 1 - Anode	(section 2)	Pin 6 - Anode	(section 1)
Pin 2 - Grid	(section 2)	Pin 7 - Grid	(section 1)
Pin 3 - Cathode	(section 2)	Pin 8 - Cathode	(section 1)
Pin 4 - Heater		Pin 9 - Heater centre tap	
Pin 5 - Heater			

Mounting position	any
Maximum shock	500g

ELECTRICAL DATAInterelectrode capacitances. (Measured with external shield)

$C_{a'-g'}$	1.9 pF
$C_{in'}$	2.2 pF
$C_{out'}$	2.0 pF
$C_{a''-g''}$	1.9 pF
$C_{in''}$	2.2 pF
$C_{out''}$	2.0 pF

Heater:

		<u>Series</u>	<u>Parallel</u>
Voltage	(ac or dc)	12.6	6.3 volts
Current		0.3	0.6 amps.

Ratings - Absolute Maximum values.

Maximum heater voltage variation	$\pm 5\%$ of nominal value.
Maximum heater cathode voltage:	
Heater negative with respect to cathode	200 volts
Heater positive with respect to cathode	200 volts
Maximum anode voltage ($I_a=0$)	550 volts
Maximum anode voltage	300 volts
Maximum anode dissipation (Each section)	5.0 watts
Maximum bulb temperature (at hottest spot on bulb surface)	250°C

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

Test conditions $V_a = 250V$, $V_g = -4.6V$.

Each Section

	<u>Min.</u>	<u>Bogey</u>	<u>Max.</u>
Anode current	3.5	6.0	8.5 mA
Mutual conductance	1.7	2.35	3.0 mA/V
Anode current at $V_g = -10V$			500 μA
Amplification factor	27	32	37

Maximum value of cathode interface resistance throughout life under cut-off conditions 10 Ω .