

TETRODE THYRATRON

EN91

Tetrode inert gas-filled thyatron with negative control characteristic. Primarily designed for use in relay or grid-controlled rectifier circuits.

(2D21)

This data sheet should be read in conjunction with "DEFINITIONS AND OPERATIONAL RECOMMENDATIONS—THYRATRONS", preceding this section of the Handbook.

LIMITING VALUES (absolute ratings, not design centre)

It is important that these limits are never exceeded and such variations as mains fluctuations, component tolerances and switching surges must be taken into consideration in arriving at actual valve operating conditions.

Max. peak anode voltage		
Inverse	1.3	kV
Forward	650	V
Max. cathode current		
Peak	500	mA
Average (Max. averaging time 30 secs.)	100	mA
Surge (Fault protection max. duration 0.1 secs.)	10	A
Max. negative control-grid voltage		
Before conduction	100	V
During conduction	10	V
Max. average positive control-grid current for anode voltage more positive than -10 V (averaging time 1 cycle)	10	mA
Max. peak positive control-grid current during the time that the anode voltage is more positive than -10 V	50	mA
*Max. peak positive control-grid current during the time that the anode voltage is more negative than -10 V	30	μ A
Max. control-grid resistor	10	M Ω
*(Recommended min. control-grid resistor 0.1 M Ω)		
Max. negative shield-grid voltage		
Before conduction	100	V
During conduction	10	V
Max. average positive shield-grid current for anode voltage more positive than -10 V (averaging time 1 cycle)	10	mA
**Max. shield-grid resistor	1.0	M Ω
Max. peak heater-cathode voltage		
Heater positive	25	V
Heater negative	100	V
Heater voltage limits	5.7 to 6.9	V
Min. valve heating time	10	s
Max. operating frequency	500	c/s
Ambient temperature limits	-75 to +90	$^{\circ}$ C

*It is not desirable that the control-grid should be positive when the anode is more negative than -10 V, but where this condition is unavoidable the control-grid resistor may need to be greater than the recommended minimum value.

**Where circuit conditions permit, the shield-grid should be connected directly to the cathode.



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CHARACTERISTICS

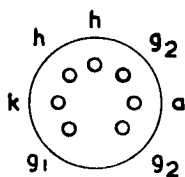
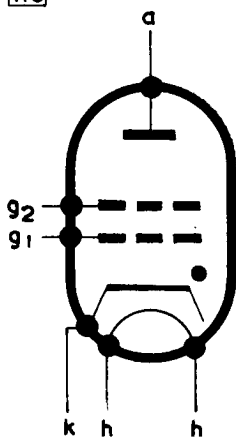
Electrical

Heater voltage	6.3	V
Heater current at 6.3 V		
Average	0.60	A
Maximum	0.66	A
Anode to control-grid capacitance	0.03	μF
Control-grid to cathode and shield-grid capacitance	2.5	μF
Deionisation time (approx.)		
(a) $V_{g1} = -100$ V, $I_a = 100$ mA	35	μs
(b) $V_{g1} = -10$ V, $I_a = 100$ mA	75	μs
Ionisation time (approx.)	0.5	μs
Anode voltage drop	8	V
Critical grid current at $V_a = 460$ V r.m.s.	0.5	μA

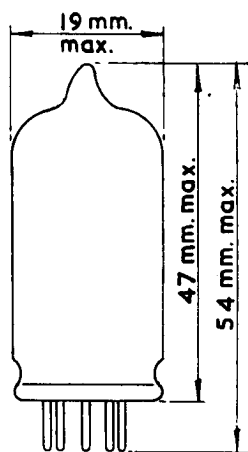
Mechanical

Type of cooling	Convection
Mounting position	Any
Max. net weight	{ 0.5 oz. 14 g

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B7G BASE

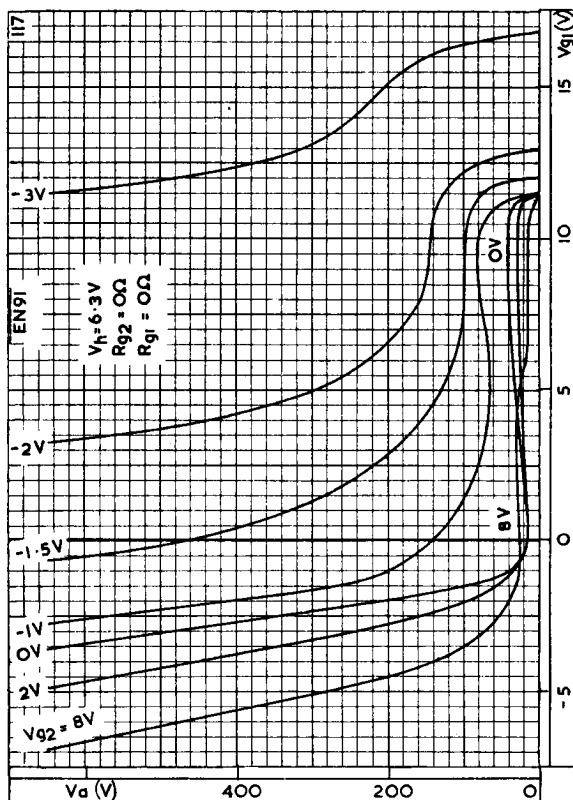


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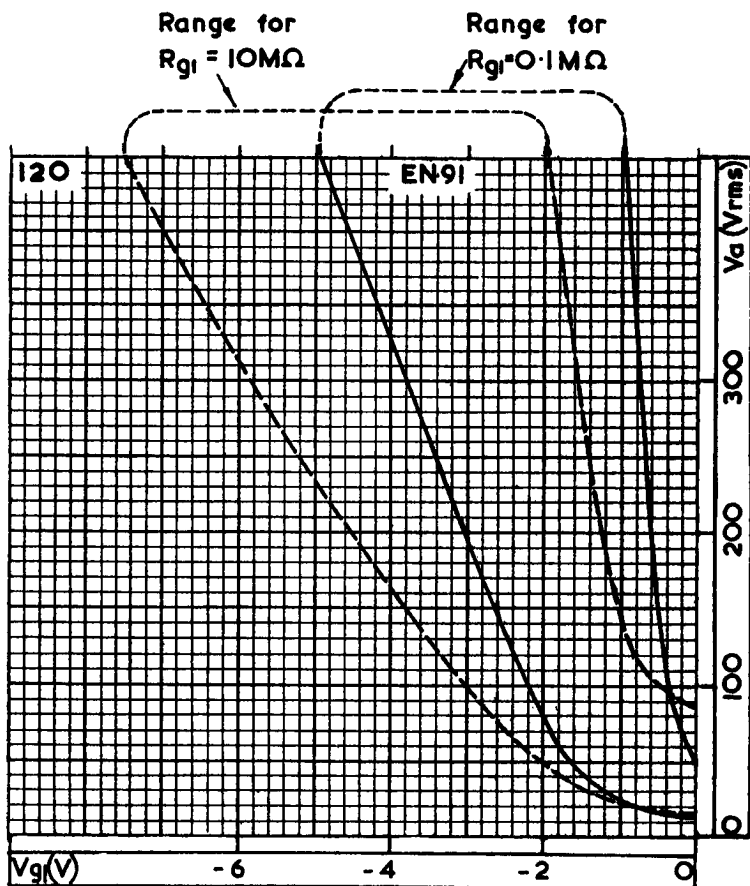
CONTROL CHARACTERISTIC

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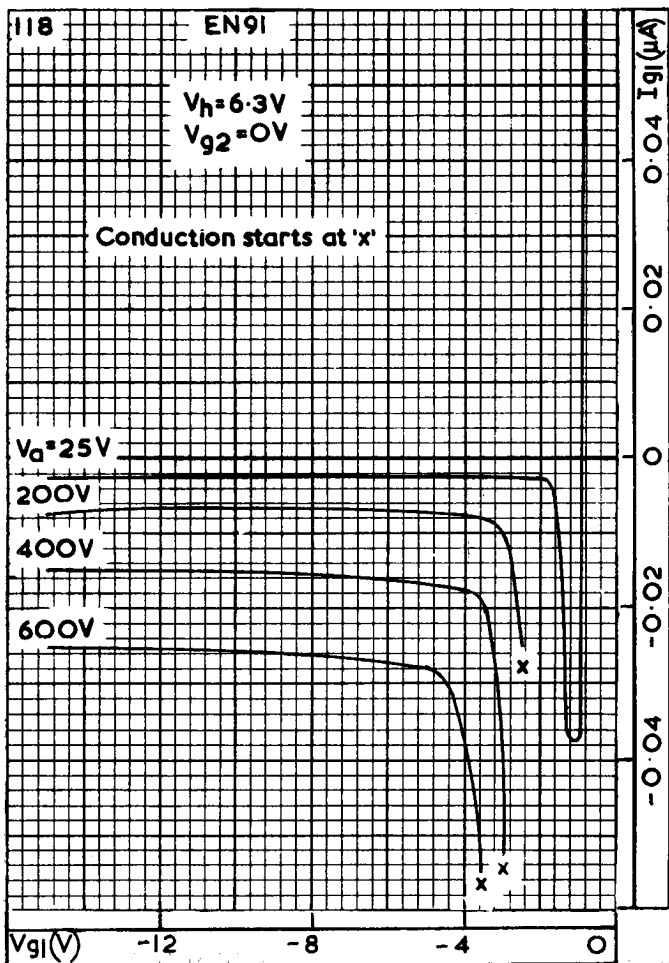
OPERATING RANGE OF CRITICAL GRID VOLTAGE

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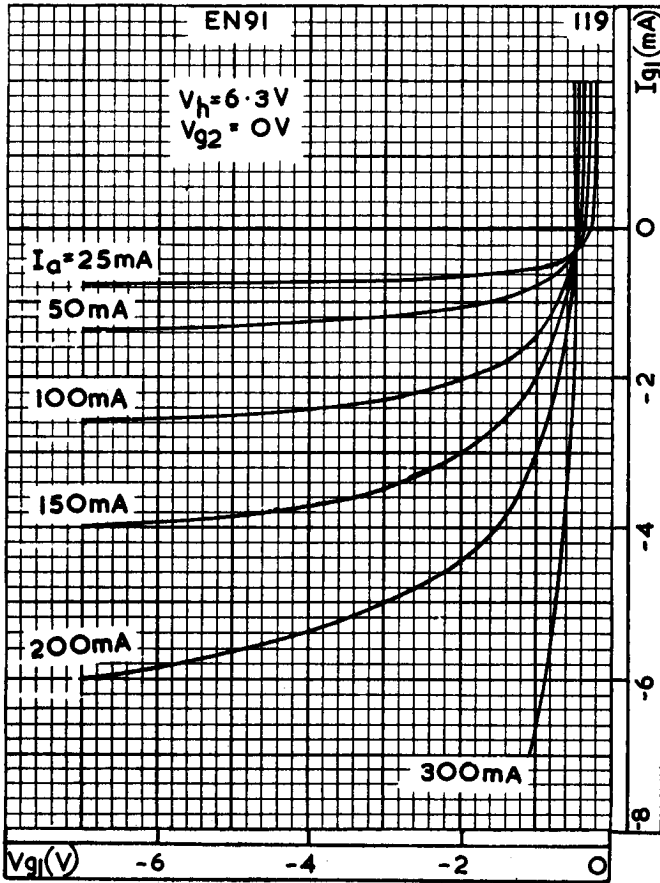
CONTROL-GRID CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE BEFORE CONDUCTION

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CONTROL-GRID CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE DURING CONDUCTION

