TETRODE THYRATRON

EN32

Tetrode inert gas-filled thyratron with negative control characteristic. Primarily designed for industrial control applications.

This data should be read in conjunction with DEFINITIONS AND GENERAL 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	2.0	A
Average (max. averaging time 15s)	300	mA
Surge (fault protection max. duration 0.1s)	10	A
Max. negative control-grid voltage		
Before conduction	250	V
During conduction	10	V
Max. average positive control-grid current for anode voltage more positive than –10V (averaging time 1 cycle)	20	mA
Max. control-grid resistance		
$I_a < 200mA$	10	MΩ
$I_a > 200mA$	2.0	MΩ
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 –10V (averaging time 1 cycle)	20	mA
Max. screen-grid resistor	1.0	MΩ
Max. peak heater-cathode voltage		
Cathode negative	25	V
Cathode positive	100	V
Min. valve heating time (for $i_{k(pk)}$ max = 2.0A)	20	s
Ambient temperature limits	–75 to +90	°C

Note—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 6.3V	950	mA
Capacitances		
Anode to grid	0.25	pF
Anode to cathode	0.06	pF
Grid to cathode	0.2	pF
Anode to shield-grid	3.0	pF
Control ratio		
g_2 to k and $R_{g1}=0\Omega$	275	
g_1 to k and $R_{g2}=0\Omega$	370	
Anode voltage drop	10	V
Recovery (deionisation) time		
$V_a=650V$, $i_{a(pk)}=2A$, $R_{g1}=100k\Omega$		
$V_{g1}=-100V$	240	μs
$V_{g1}=-50V$	1.0	ms

Mechanical

Type of cooling	Convection
Mounting position	Any

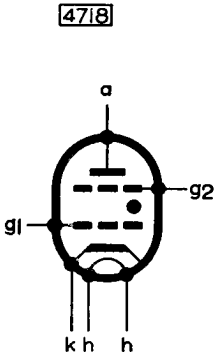
CONTROL CHARACTERISTIC (See page 5).

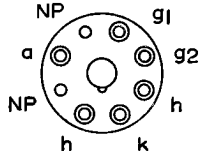
The curves given indicate the spread in characteristics due to:

(a) Variations in characteristics due to changes in heater voltage.

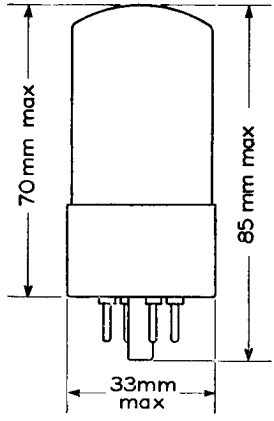
(b) Variations in characteristics during life.

(c) Variation in grid resistor.





Octal Base



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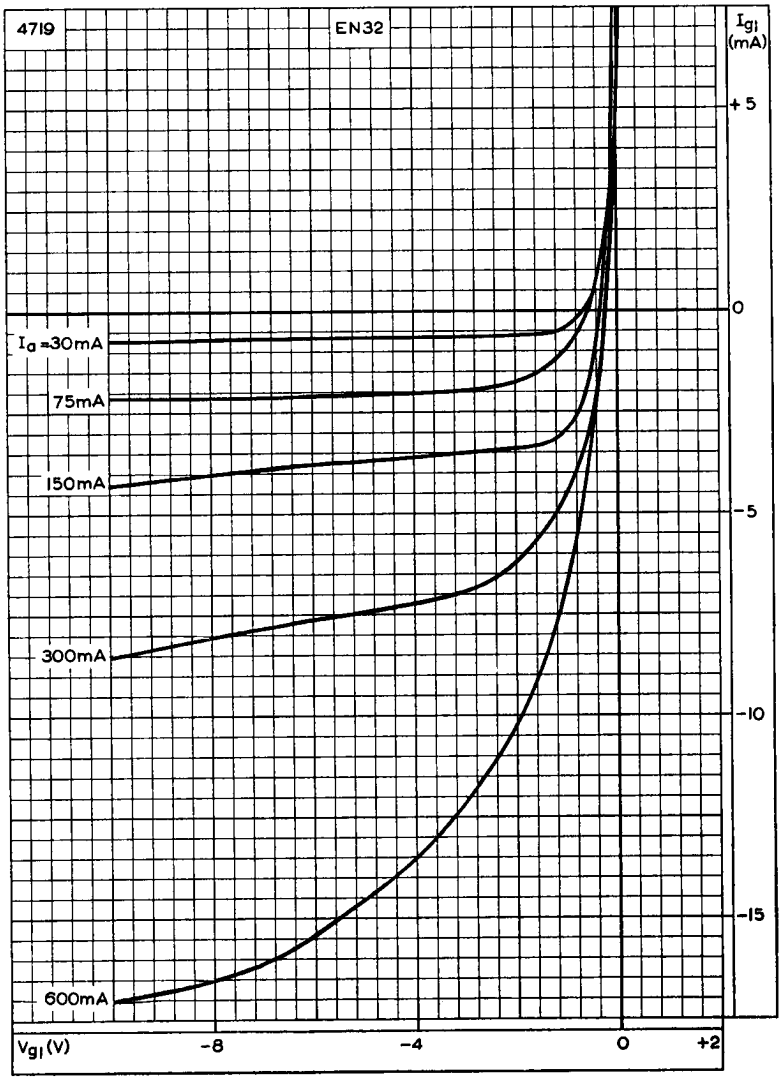

GRID ION CURRENT CHARACTERISTICS

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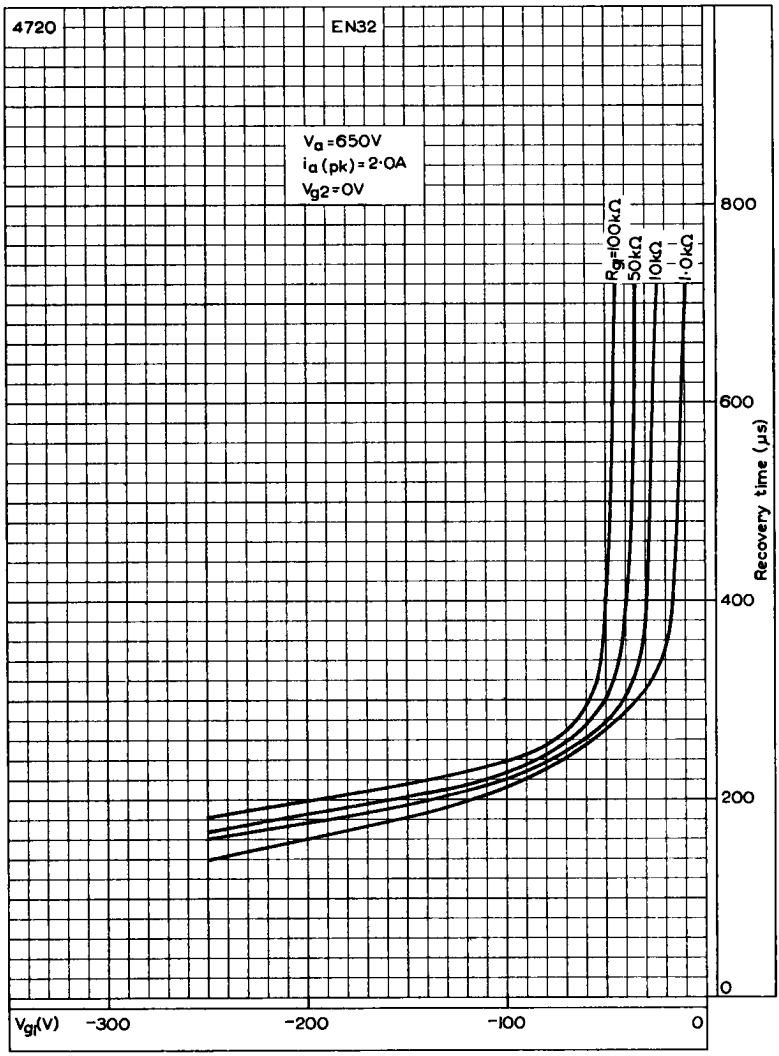

RECOVERY TIME PLOTTED AGAINST CONTROL-GRID VOLTAGE

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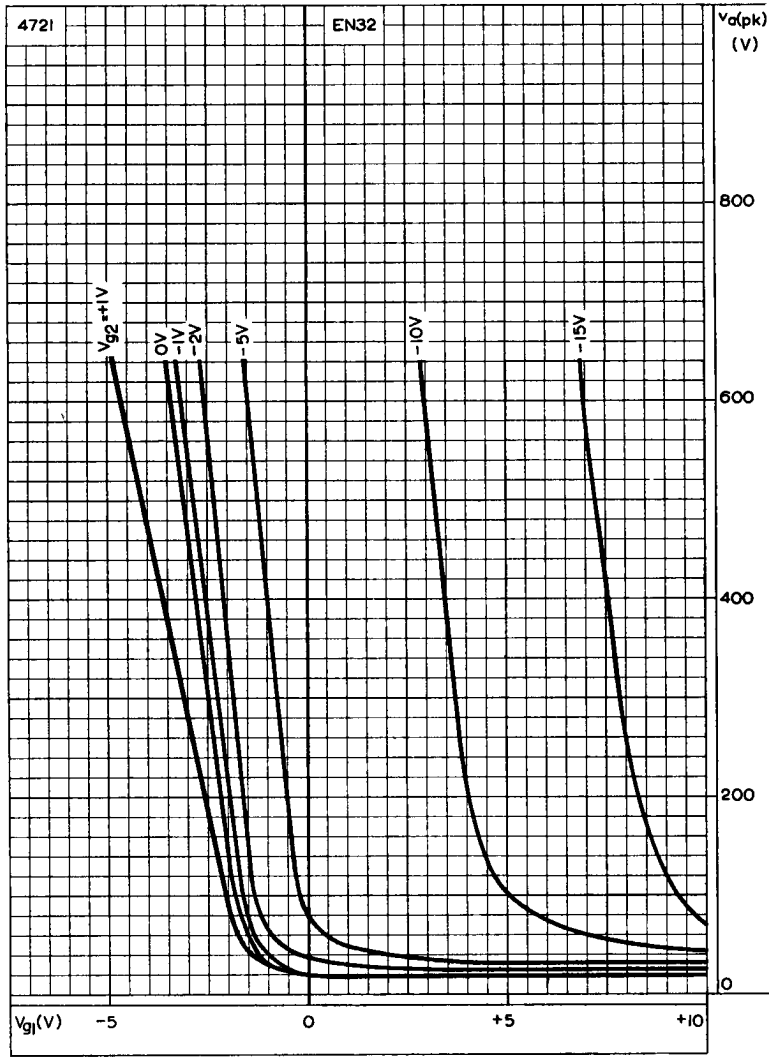

CONTROL CHARACTERISTIC (see page 2)

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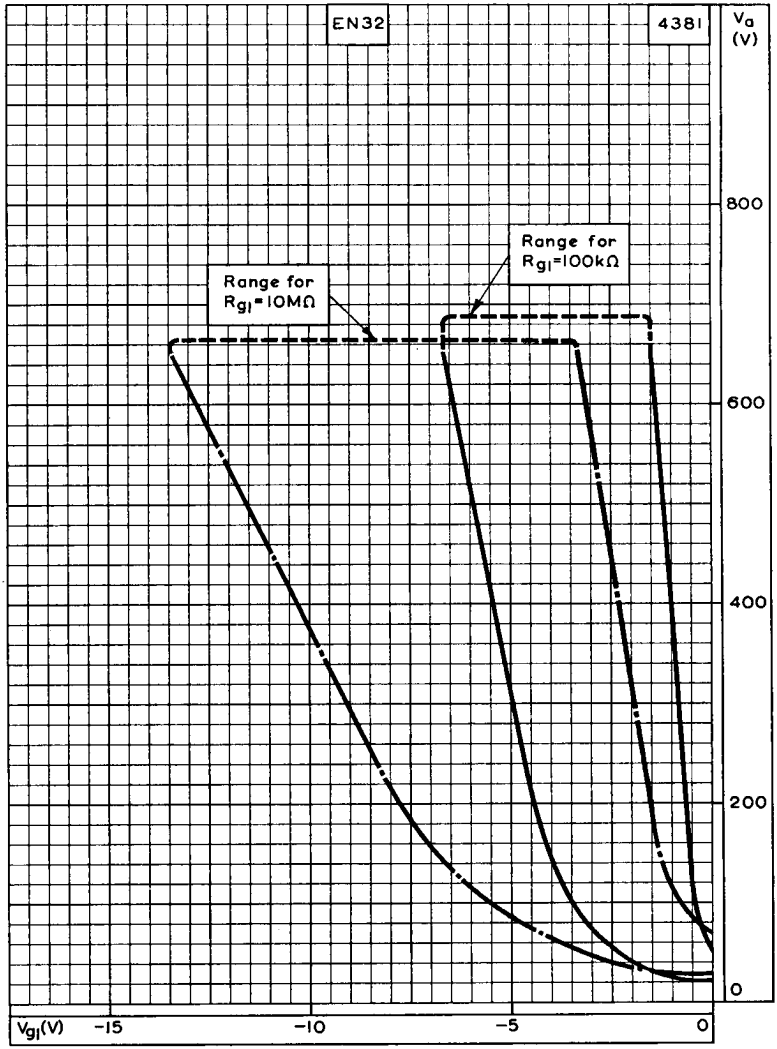

OPERATING RANGE OF CRITICAL GRID VOLTAGE