

TRIODE THYRATRON

XG2-6400

6.4 amp triode mercury vapour thyatron
with negative control characteristic.
Designed for industrial power control appli-
cations.

This data should be read in conjunction with DEFINITIONS AND
GENERAL OPERATIONAL RECOMMENDATIONS - THYRATRONs,
which precede 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	2.5	kV
Forward	2.5	kV
Max. cathode current		
Peak (25c/s and above)	40	A
Average (Max. averaging time 15s)	6.4	A
Surge (Fault protection max. duration 0.1s)	400	A
Max. negative grid voltage		
Before conduction	1.0	kV
During conduction	10	V
Max. average positive grid current for anode voltage more positive than -10V (averaging time 15s)	250	mA
Max. peak positive grid current during the time that the anode voltage is more positive than -10V	1.0	A
Max peak positive grid current during the time that the anode voltage is more negative than -10V	15	mA
Grid resistor		
Maximum	100	kΩ
Recommended minimum	10	kΩ
Condensed mercury temperature limits	35 to 80	°C

CHARACTERISTICS

Electrical

Heater voltage	5.0	V
Heater current at 5.0V		
Average	10	A
Maximum	11.5	A
Anode-to-grid capacitance	< 0.1	pF
Grid-to-cathode capacitance	15	pF
Recovery time (approx.)	1000	μs
Ionisation time (approx.)	10	μs
Anode voltage drop	16	V
Critical grid current at $V_a = 2.5kV$	< 20	μA

Mechanical

Type of cooling	Convection	
Mounting position	Vertical, base down	
Max. net weight	400 14 1150	g oz g
Weight of thyatron in packing	2 lb	9 oz
Dimensions of packing	12.5 × 6.25 × 6.25 317.5 × 158.8 × 158.8	in mm

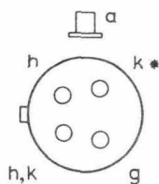
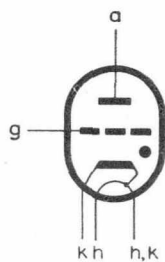
HEATING-UP TIME

The minimum value of the total valve heating-up time can be obtained from the heating and cooling curve on page C3. This shows how the condensed mercury temperature rises above ambient temperature from the instant of switching on the heater supply.

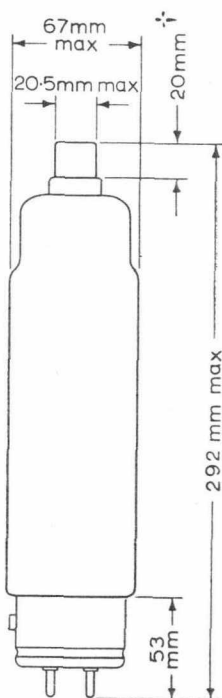
Under normal conditions, however, cathode current may be drawn when the condensed mercury temperature is approximately within 7°C of the minimum quoted value. See appropriate section 'General operational recommendations - thyratrons'.

During long shut down periods e.g. overnight, the heater supply may be reduced to 60 to 80% of normal instead of being switched off. This greatly reduces the minimum delay required after restoring the heater supply to normal. The total heating-up time under this duty can be obtained from the curve on page C4.

Minimum cathode heating time 5 min



B4D Base



*Return lead of grid and anode circuits
†Contact length 17.5 mm min

8405

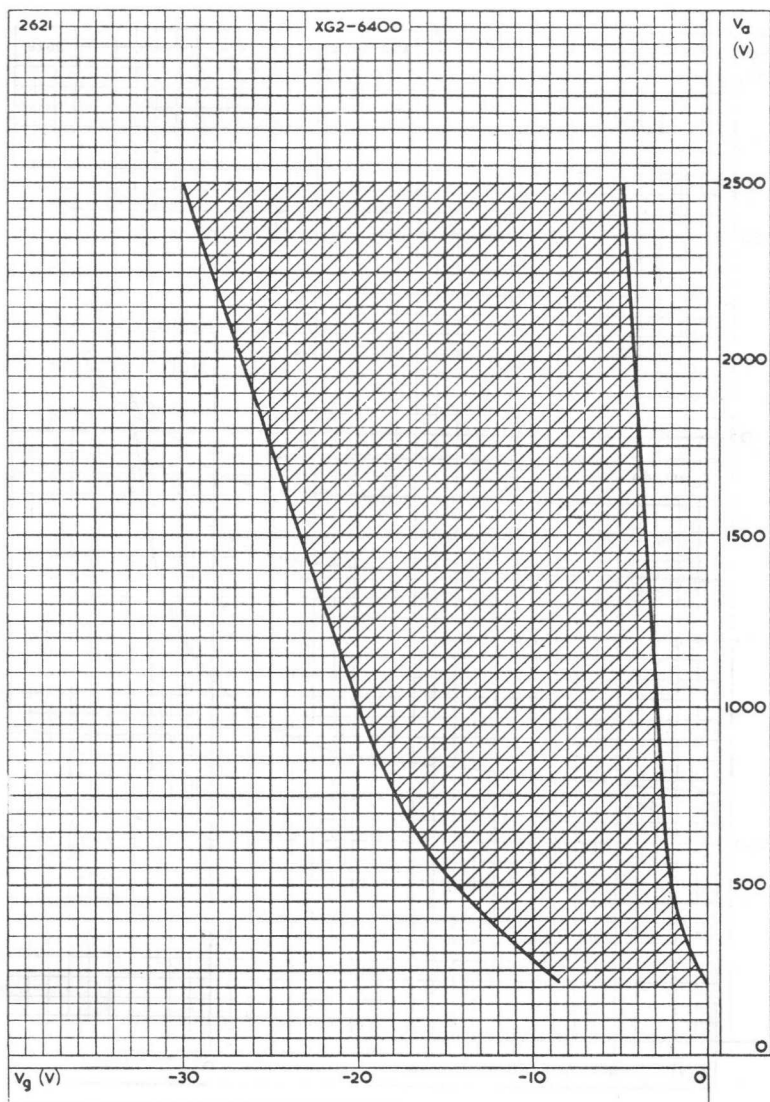
1911

1911

1911

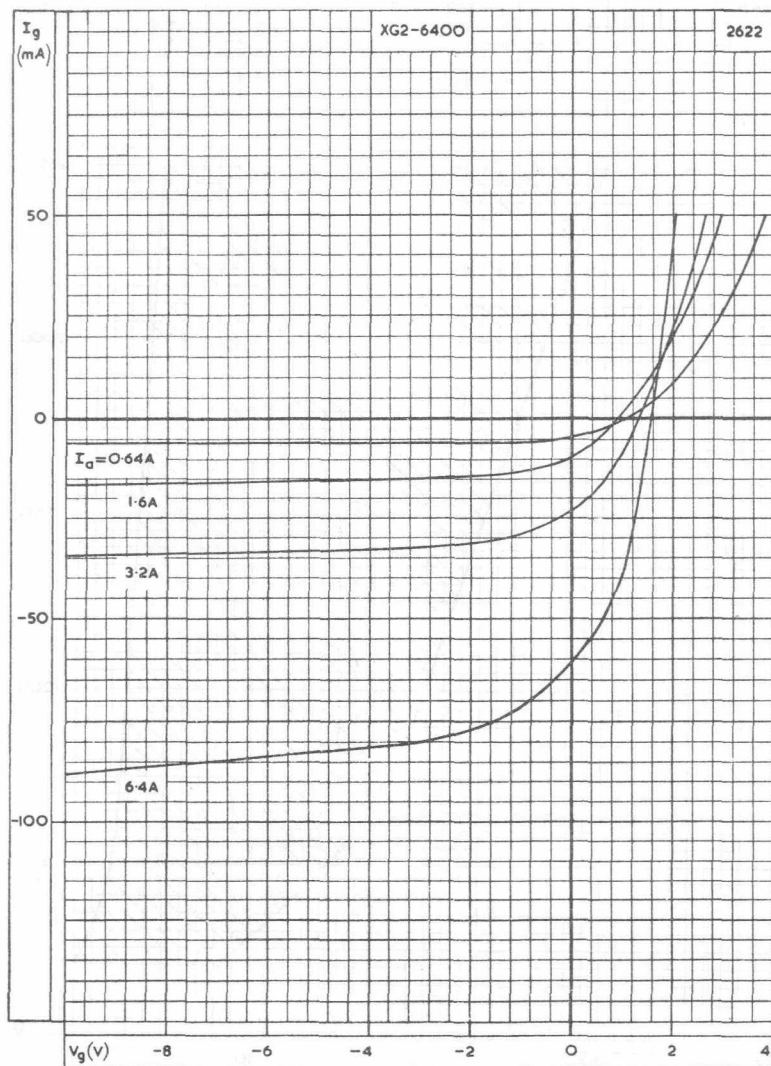
1911



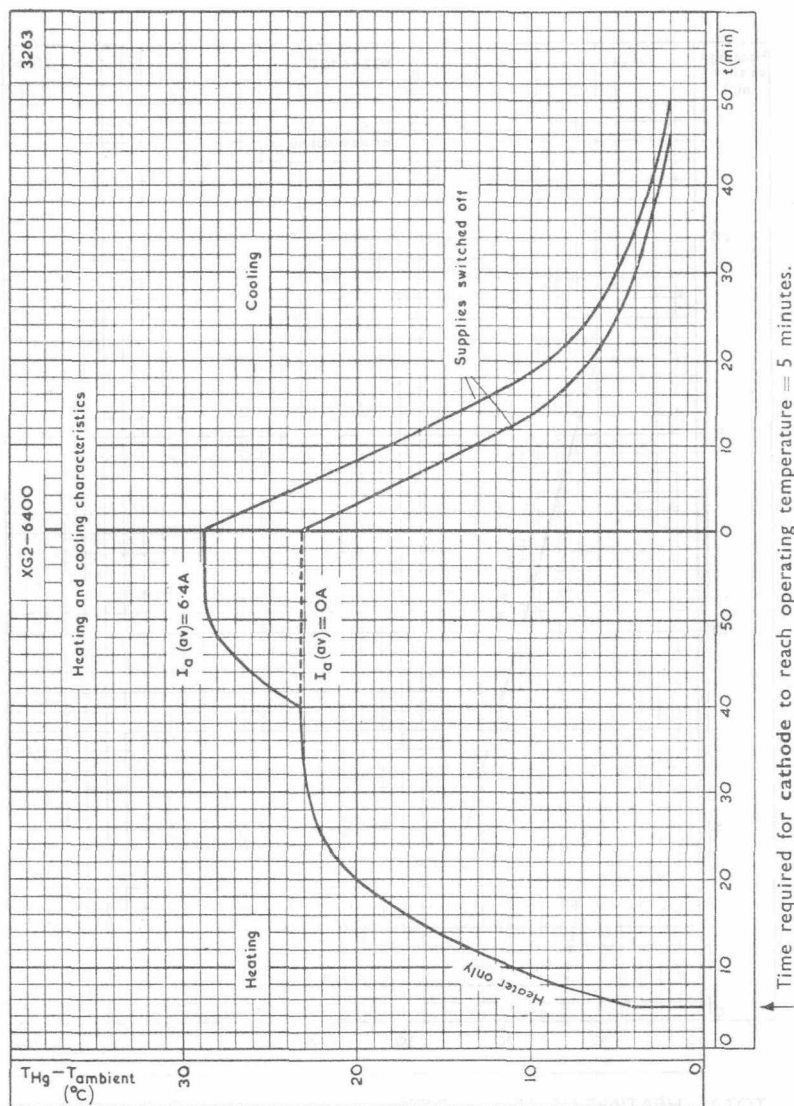


CONTROL CHARACTERISTIC

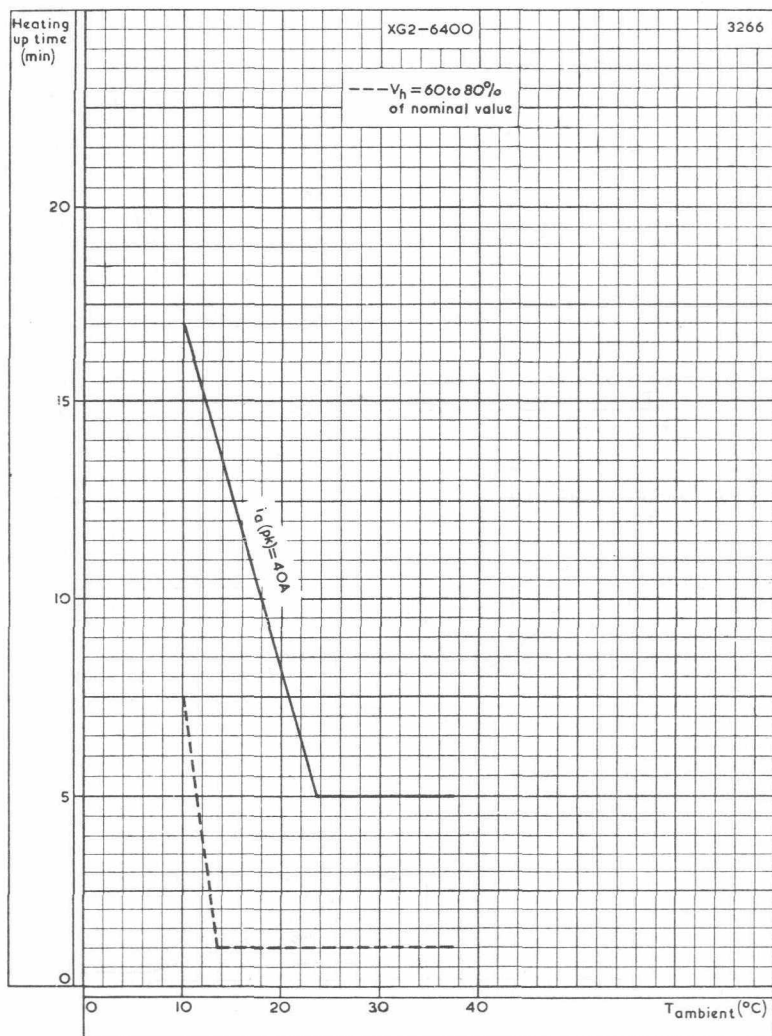




GRID ION CURRENT CHARACTERISTIC



HEATING AND COOLING CHARACTERISTIC. EXCESS TEMPERATURE OVER AMBIENT PLOTTED AGAINST TIME



TOTAL HEATING-UP TIME PLOTTED AGAINST AMBIENT TEMPERATURE
(See notes on page D2)