

**PULSE TETRODE  
MODULATOR**

# QV20-P18

*Tetrode for pulsed applications having ratings of 20kV and 18A.*

**PRELIMINARY DATA**

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS - TRANSMITTING VALVES included in this volume of the handbook.

**HEATER**

$V_h$	26	V
$I_h$	2.25	A
$t_{h-k}$ (minimum delay before drawing cathode current)	3	min

**MOUNTING POSITION**

Any

**CAPACITANCES**

$C_{a-g1}$ (measured without external shield)	0.3	pF
$C_{in}$	43	pF
$C_{out}$	9.0	pF

**COOLING**

Natural		
$T_{seals}$ max.	200	°C

An anode connector providing a high degree of heat transfer by radiation or by conduction must be used.

**OPERATION AS PULSE MODULATOR**

**Limiting Values (Absolute ratings)**

$V_a$ max.	20	kV
$V_{a(pulse)}$ max.	25	kV
$*V_{g2}$ max.	1.5	kV
$**V_{g1}$ max.	1.0	kV
$+V_{g1(pulse)}$ max.	300	V
$i_{a(pulse)}$ max.	18	A
$p_{a(mean)}$ max.	60	W
$p_{In(mean)}$ max.	360	W
$p_{g2(mean)}$ max.	8.0	W
Duty cycle max.	**	

\*A screen-grid series protective resistor of 20kΩ minimum is required with a condenser connected between screen-grid and cathode.

\*\*The maximum control-grid series resistance is 100kΩ.

††For  $i_{a(pulse)} > 5A$  the duty cycle must not exceed 0.001, and the product of  $i_{a(pulse)}$  and pulse duration shall not exceed 40. The valve must not be operated for longer than 5μsec in any 100μsec interval. For  $i_{a(pulse)} < 5A$  the product of  $i_{a(pulse)}$  and pulse duration of 40 is still applicable and the  $p_{a(mean)}$  max. rating of 60W determines the maximum, permissible duty cycle.



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### Typical Operating Conditions

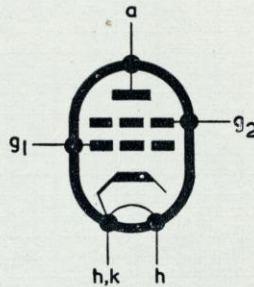
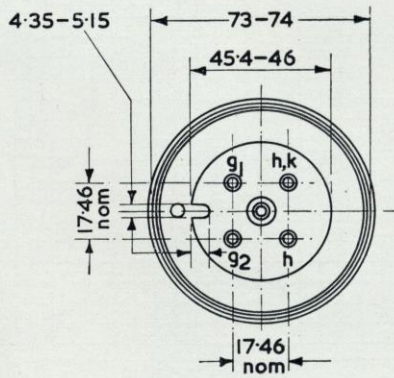
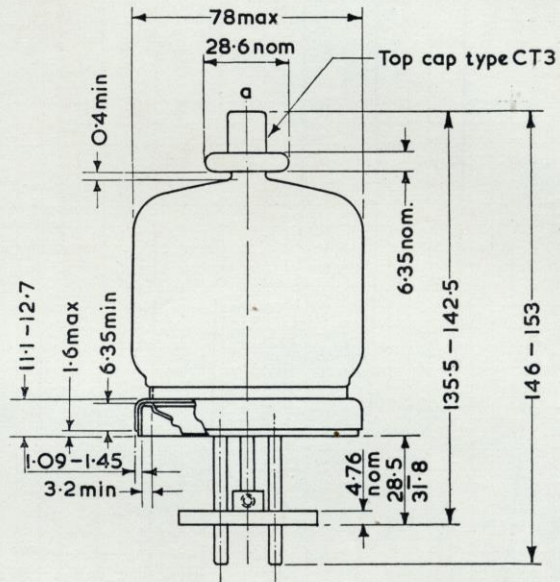
$t_p$	2	2	$\mu\text{sec}$
P.R.F.	500	500	p/s
$V_a$	15.8	20	kV
$V_{g2}$	1.25	1.25	kV
$V_{g1}$	-600	-600	V
$V_{g1(\text{pulse})}$	700	700	V
$i_a(\text{pulse})$	14	16	A
$I_a$	14	16	mA
$i_{g2(\text{pulse})}$	4.0	3.0	A
$I_{g2}$	4.0	3.0	mA
$i_{g1(\text{pulse})}$	1.1	1.1	A
$I_{g1}$	1.1	1.1	mA
$P_{in(\text{pulse})}$	220	320	kW
$R_a$	1.0	1.2	k $\Omega$
$P_{out(\text{pulse})}$	210	305	kW
$V_{a(out)}$	15	19	kV



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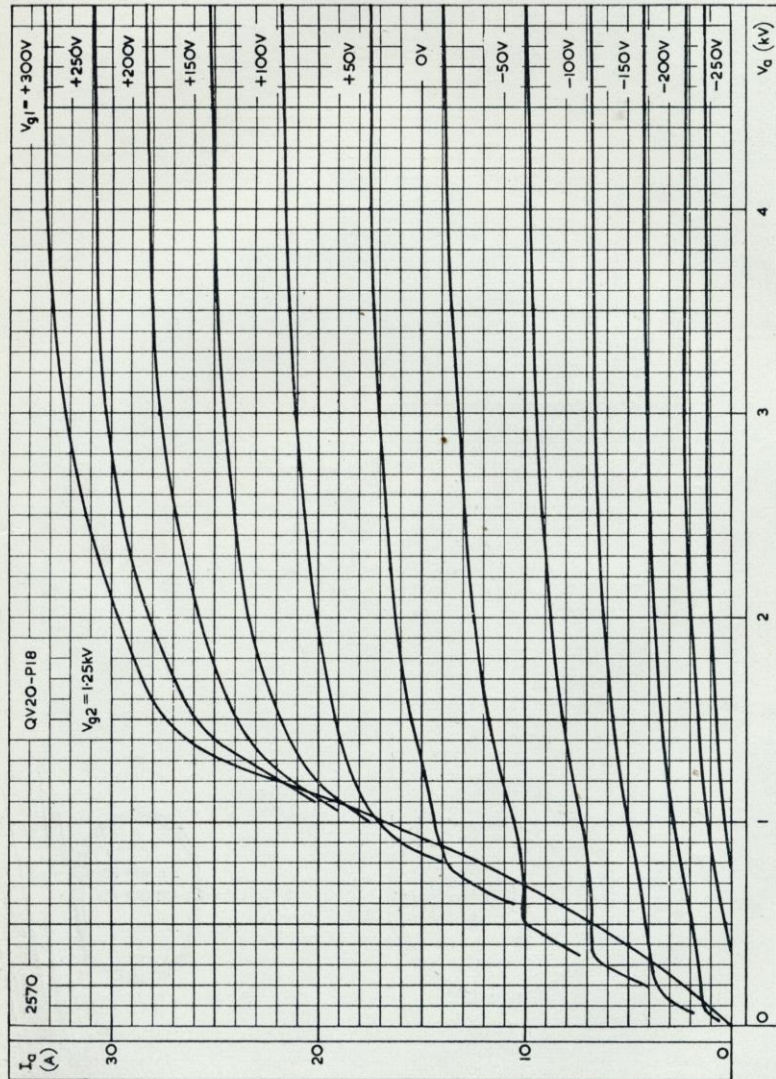
B4A Base

All dimensions in mm.

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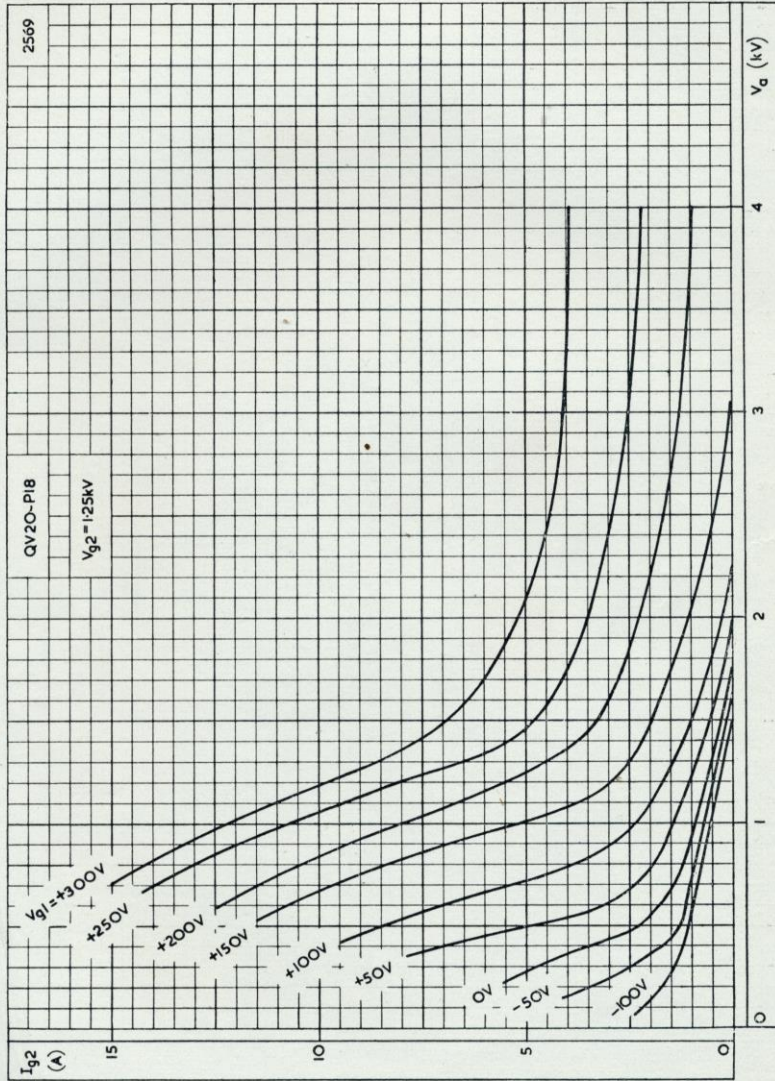
ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE



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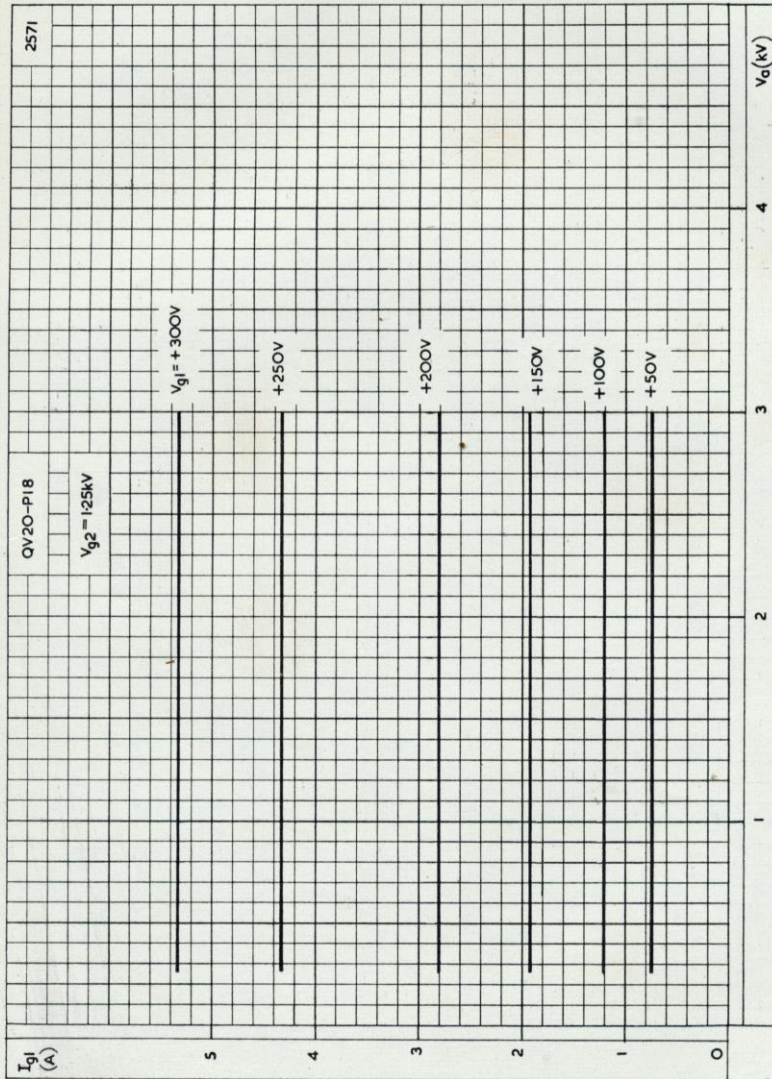
SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE



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CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE