

TENTATIVE DATA

QUICK REFERENCE DATA

Forced air cooled triode intended for use as oscillator or amplifier

	Class 'B' Audio amplifier	Class 'C' Television	Class 'C' Telephony	Class 'C' Telegraphy or F.M. Telephony	
f	-	220	75	110	Mc/s
P _{out}	13.3	4.0	4.7	4.8	kW
f max.	-	220	220	220	Mc/s
V _a max.	6.0	5.0	5.0	6.2	kV
p _a max.	5.0	5.0	3.4	5.0	kW

To be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS - TRANSMITTING VALVES

CLASS 'C' TELEGRAPHY OR F.M. TELEPHONY

Maximum operating conditions

	30	30	30	110	*220	Mc/s
f	30	30	30	110	*220	Mc/s
P _{out}	4.0	5.6	6.9	4.8	2.65	kW
P _{load}	3.2	4.5	5.5	3.9	2.15	kW
η_a	73	75	76.5	70	70	%
V _a	4.0	5.0	6.0	5.0	3.0	kV
I _a	1.37	1.5	1.5	1.25	1.25	A
-V _g	200	300	400	300	160	V
I _g	300	330	310	300	250	mA
P _{load} (driver)	190	240	275	250	510	W
p _a	1.5	1.9	2.1	1.45	1.6	kW

*Grounded grid configuration

CLASS 'C' ANODE MODULATION

Maximum operating conditions
(Carrier conditions for 100% modulation)

f	75	110	Mc/s
P _{out}	4.7	2.8	kW
P _{load}	3.75	2.25	kW
η_a	78.5	75	%
V _a	5.0	4.0	kV
I _a	1.2	0.93	A
-V _g	400	350	V
I _g	300	240	mA
P _{load (driver)}	205	130	W
p _a	1.3	0.92	kW

CLASS 'C' AMPLIFIER FOR TELEVISION SERVICE COMMON CATHODE BIAS MODULATED

Negative modulation, positive synchronisation
Maximum operating conditions

f	48-75	Mc/s
P _{out (sync)}	9.0	kW
P _{load (sync)}	6.3	kW
Bandwidth (-3.0 dB)	8.0	Mc/s
V _a	5.0	kV
-V _{g sync}	200	V
black	300	V
white	550	V
I _{a sync}	1.9	A
black	1.3	A
I _{g sync}	250	mA
black	175	mA
P _{load (driver) sync}	250	W



CLASS 'B' AUDIO AMPLIFIER

Maximum operating conditions for two valves in push-pull

P_{out}	13.3	kW
D_{tot}	4.3	%
R_{a-a}	4.9	k Ω
V_a	6.0	kV
$I_{a(o)}$	2 x 125	mA
I_a (max. sig.)	2 x 1.5	A
$-V_g$	165	V
I_g	2 x 280	mA
V_{in} (g-g) r. m. s.	645	V
P_{load} (driver)	2 x 115	W
p_a	2 x 2.35	kW
η_a	74	%

ABSOLUTE MAXIMUM RATINGS

	Class 'B' Audio	Class 'C' T. V.	Class 'C' Telephony	Class 'C' Telegraphy	
V_a max. ($f = 220\text{Mc/s}$)	-	4.0	3.2	4.0	kV
($f \leq 75\text{Mc/s}$)	6.0	5.0	5.0	6.2	kV
$-V_g$ max.	-	*1.0	1.0	1.0	kV
I_k max.	1.8	*1.8	1.65	1.85	A
p_a max.	5.0	*4.0	3.4	5.0	kW
I_g max.	-	-	350	350	mA
p_g max.	120	*120	120	120	W

*(sync) level



CATHODE

Directly heated, thoriated tungsten

V_f	12.6	A
I_f	33	A

The connection f_{ct} is intended for use as the cathode current return and is not an electrical centre tap and must not be used for filament current supply. At frequencies above 30Mc/s all three filament leads should be interconnected with suitable capacitors.

CAPACITANCES

c_{a-g}	11	pF
c_{in}	16	pF
c_{out}	300	mpF

CHARACTERISTICS (measured at $V_a = 4.0kV$, $I_a = 1.0A$)

g_m	17	mA/V
μ	32	

MOUNTING POSITION

Vertical, base up or down.

COOLING Forced-air cooled

Maximum temperatures

$T_{anode\ seals}$	180	$^{\circ}C$
$T_{grid\ seals}$	180	$^{\circ}C$
$T_{pin\ seals}$	220	$^{\circ}C$

In order to keep within the temperature limits it may be necessary to direct a flow of air on to the seals.

The amount of forced air cooling required for this valve depends upon the anode dissipation and the height above sea-level.

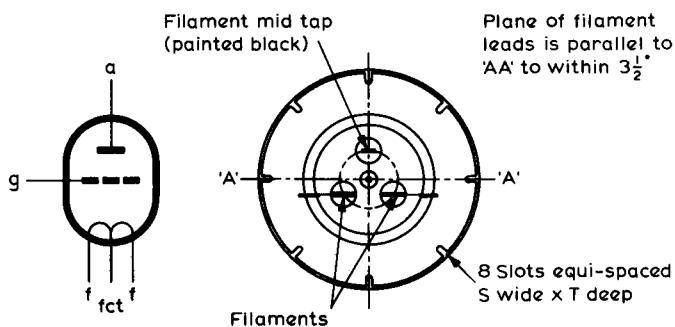
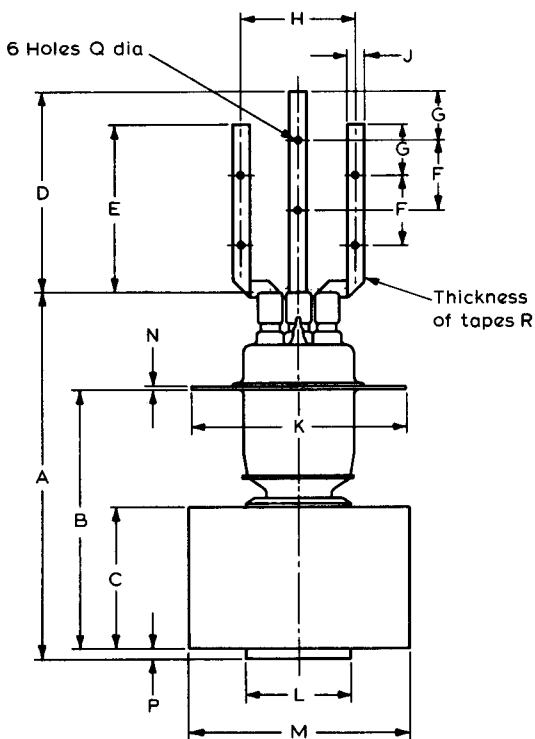
Typical values of inlet temperature, rate of flow of air and pressure difference between the inlet and outlet of the housing are given in the following table.



V.H.F. POWER TRIODE

TY6-5000B

Anode dissipation	Height above sea-level		Inlet Temperature	Rate of flow of air per minute		Pressure difference between inlet and outlet
pa (kW)	h		T _{in} (°C)	m ³	ft ³	(mm of water)
	(km)	(ft)				
1.0	0	0	35	3.0	105	8.0
1.0	0	0	45	3.1	110	8.0
1.0	1.5	4920	35	3.7	130	9.0
1.0	3.0	9840	25	4.1	145	10
3.0	0	0	35	5.2	185	23
3.0	0	0	45	6.1	215	29
3.0	1.5	4920	35	6.2	220	26
3.0	3.0	9840	25	6.6	235	26
5.0	0	0	35	9.2	325	68
5.0	0	0	45	10.7	380	90
5.0	1.5	4920	35	11.2	395	81
5.0	3.0	9840	25	11.6	410	79



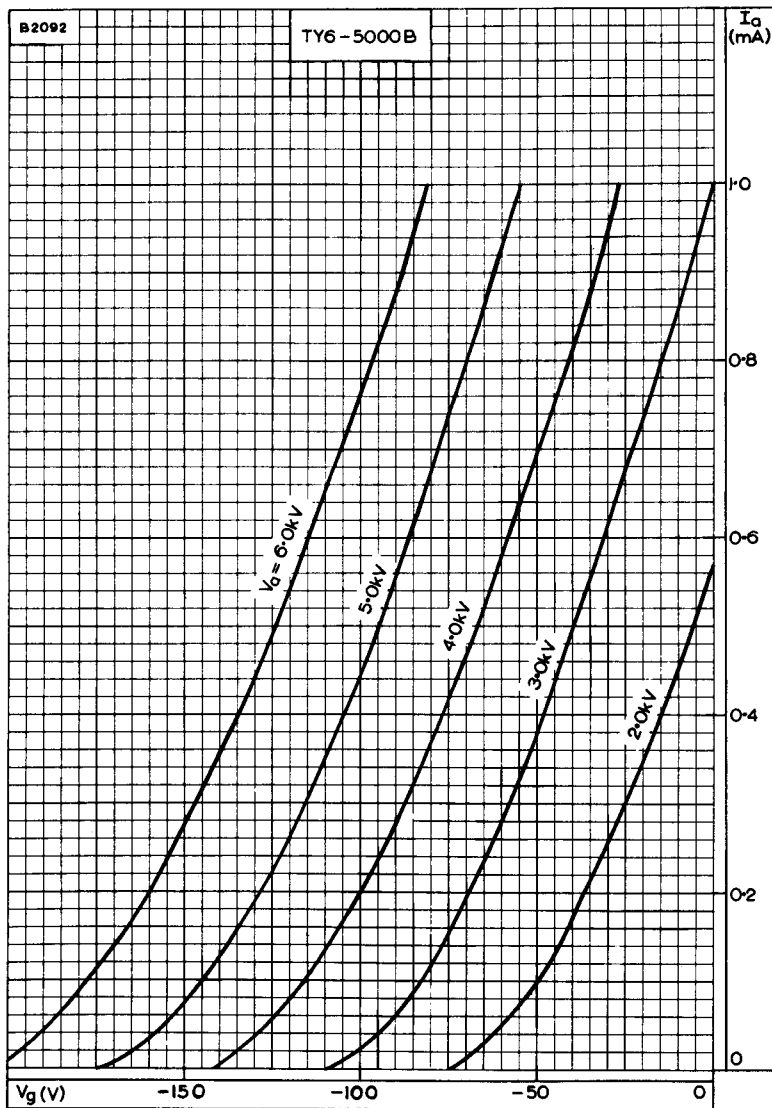
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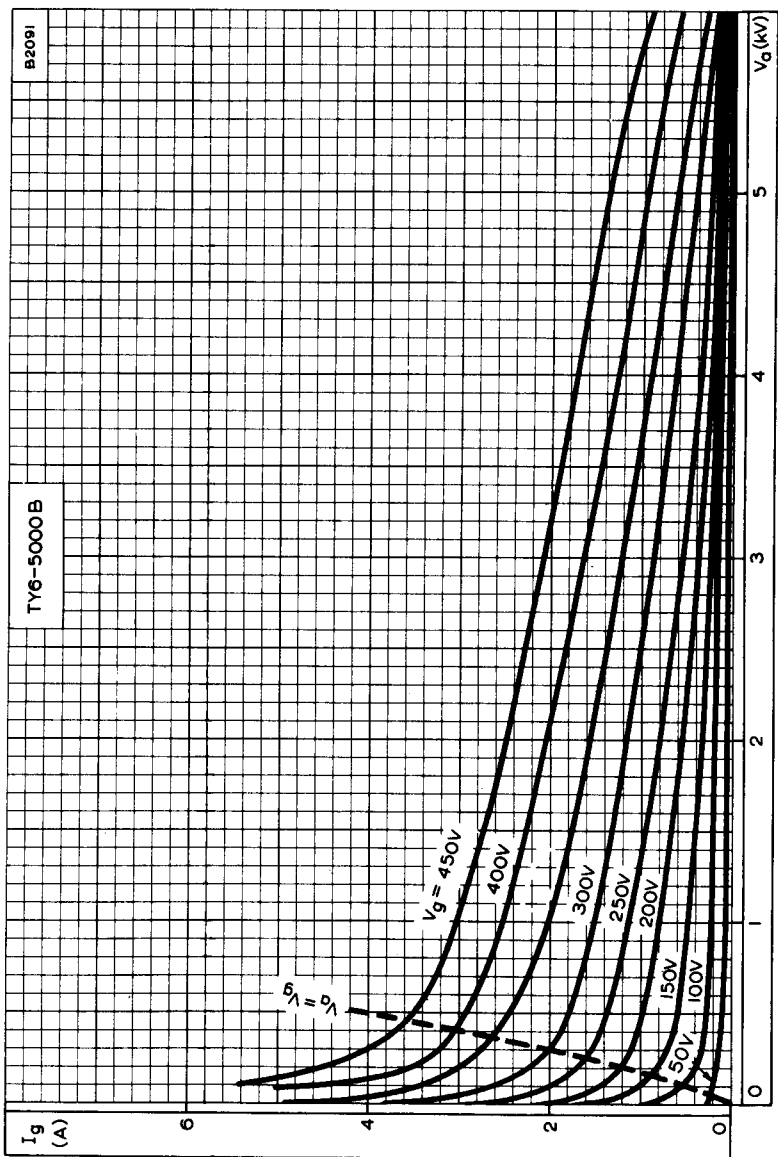
Dimensions

	Inches	millimetres	
A	9.626	193.68	max
B	2.252 ± 3.2	133.4 ± 3.2	
C	2.874	73	max
D	4.252 ± 0.079	108 ± 2	
E	3.504 ± 0.039	89 ± 1	
F	1.378 ± 0.079	35 ± 2	
G	0.866 ± 0.079	22 ± 2	
H	2.500	63.5	max
J	0.315 ± 0.020	8.0 ± 0.5	
K	4.567 ± 0.020	116 ± 0.5	
L	2.250	57.15	max
M	4.626 ± 0.063	117.5 ± 1.6	
N	0.063 ± 0.008	1.6 ± 0.2	
P	0.189	4.8	max
Q	0.164 ± 0.002	3.7 ± 0.05	
R	4 x 0.010	4 x 0.25	nom
S	0.182 ± 0.004	4.62 ± 0.1	
T	0.205 ± 0.008	5.20 ± 0.2	←

Inch dimensions derived from original millimetre dimensions.

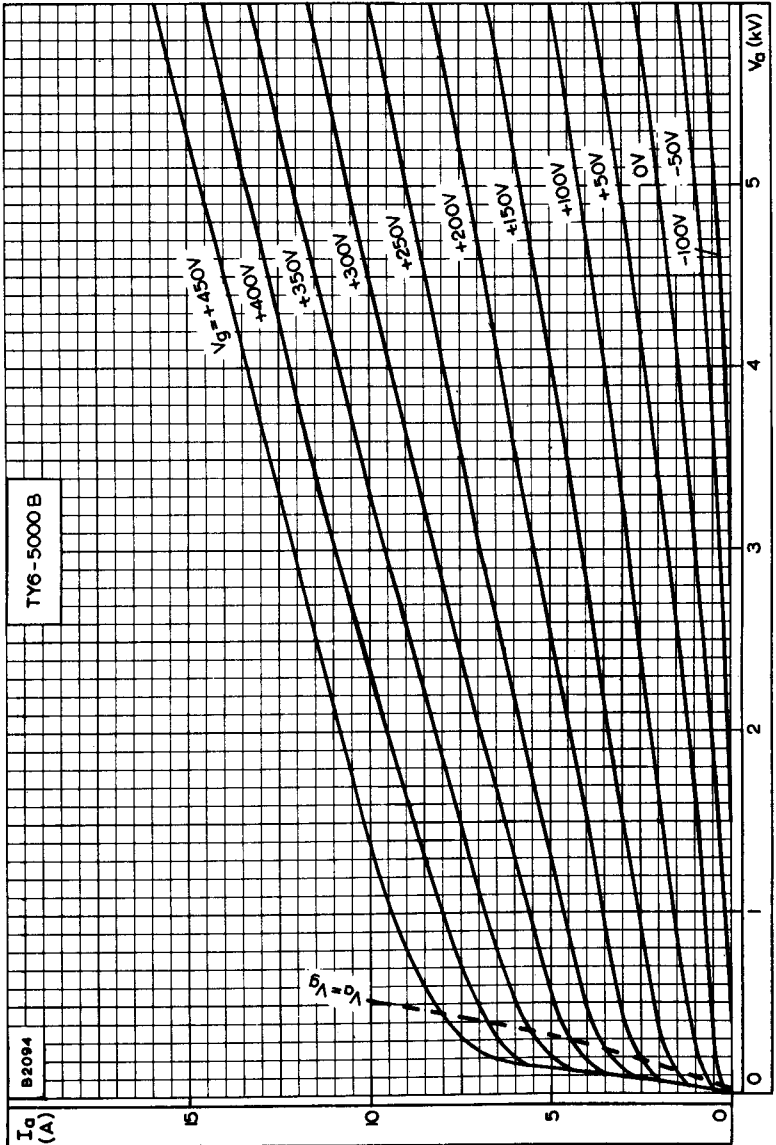


ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE
WITH ANODE VOLTAGE AS PARAMETER



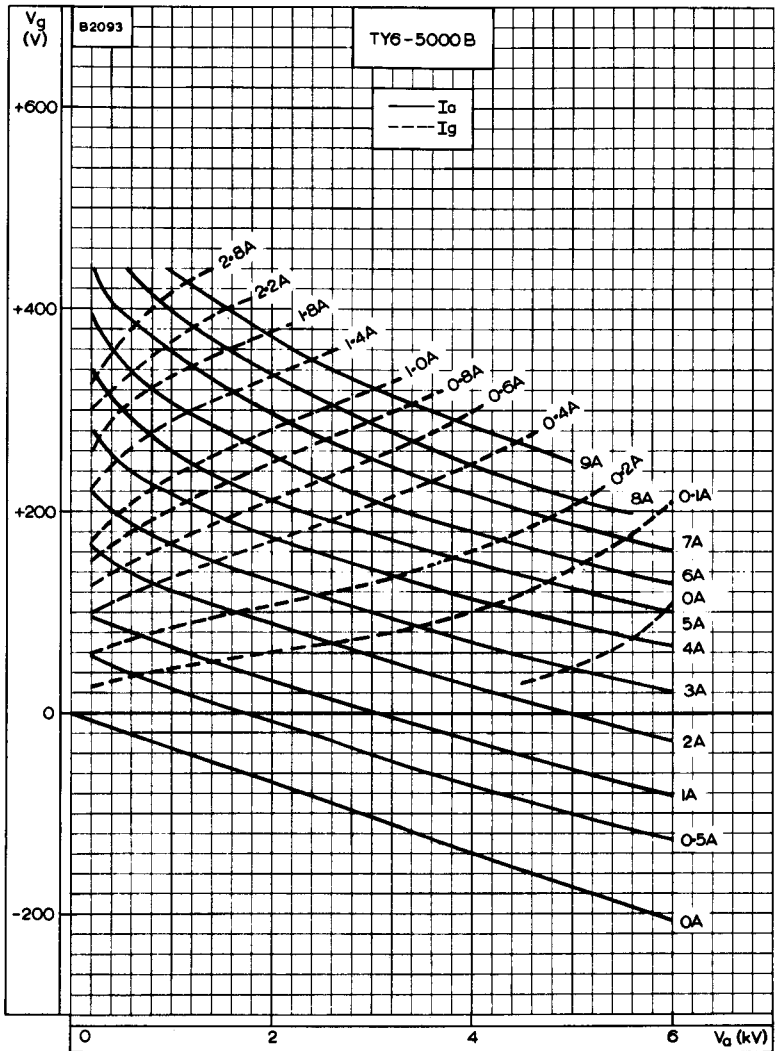
GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE
WITH GRID VOLTAGE AS PARAMETER





ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE
WITH GRID VOLTAGE AS PARAMETER





CONSTANT CURRENT CURVES

