TRIODE

TY6-800

Application: *R.F. Industrial heating.*
Power Output: *2.7kW continuous rating.*
Frequency: *50Mc/s max. at full ratings.*
Construction: *Glass, radiation cooled anode.*

PRELIMINARY DATA

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS – TRANSMITTING VALVES preceding this section of the handbook.

FILAMENT Thoriated tungsten

*V_f	6.3	V
I_f	32.5	A

*The filament has been designed to accept temporary fluctuations of $^{+5}_{-10}\%$.

MOUNTING POSITION

Vertical only, base down

CAPACITANCES

C_{a-g}	6.2	pF
C_{g-f}	10.5	pF
C_{a-f}	0.25	pF

CHARACTERISTICS (measured at $V_a = 4kV$, $I_a = 190mA$)

g_m	5.1	mA/V
g_m (at $V_a = 1.0kV$, $I_a = 3.0A$)	9.0	mA/V
μ	22	

COOLING

Normally	Low velocity air flow
*At reduced input or intermittent ratings	Natural

Maximum temperature of seals	220	°C
Maximum bulb temperature	350	°C

*See examples in typical data.

ACCESSORIES

Socket	B8.700.51
Anode clip	40626

TY6-800

TRIODE

CLASS 'C' POWER OSCILLATOR

With d.c. anode supply.

LIMITING VALUES

f max.			50	Mc/s
V_a max.			6.0	kV
V_g max.			−1.25	kV
R_{g-f} max.			10	kΩ
Duty factor max.	1.0	0.5	0.2	
Averaging time max.	—	10	5.0	s
p_a max.	800	1200	1500	W
I_a max.	750	1100	1400	mA
p_g max.	120	150	175	W
I_g max. (at p_a max.)	300	375	400	mA

OPERATING CONDITIONS

Cooling	Additional		Natural		
f	≦50	≦50	≦50	≦50	Mc/s
Duty factor	1.0	1.0	0.2	0.5	
t_{on}	—	—	1	5.0	s
t_{off}	—	—	4	5.0	s
V_a	3.0	5.0	5.0	5.0	kV
I_a	700	700	1200	960	mA
I_g	240	225	310	240	mA
p_a	546	788	1380	1100	W
η_a	74	77.5	77	77	%
R_{g-f}	1.5	2.5	2.0	2.2	kΩ
R_a	2.0	3.8	2.2	2.8	kΩ
Feedback ratio $\frac{V_{in(pk)}}{V_{a(pk)}}$	0.3	0.2	0.23	0.22	
P_{out}	1.55	2.7	4.6	3.7	kW
*P_{load}	1.2	2.1	3.6	3.0	kW

*$0.85(P_{out}-P_{drive})$

TY6-800

CLASS 'C' POWER OSCILLATOR

Anode supply single phase, full wave rectifier without smoothing filter.

LIMITING VALUES

f max.			50	Mc/s
V_a max.			5.4	kV
V_g max.			–1.25	kV
R_{g-f} max.			10	kΩ
Duty factor max.	1.0	0.5	0.2	
Averaging time max.	—	10	5.0	s
p_a max.	800	1200	1500	W
I_a max.	670	1000	1250	mA
p_g max.	120	150	175	W
I_g max. (at p_a max.)	270	400	500	mA

OPERATING CONDITIONS

Cooling	Additional		Natural		
f	≦50	≦50	≦50	≦50	Mc/s
Duty factor	1.0	1.0	0.5	0.2	
t_{on}	—	—	5.0	1.0	s
t_{off}	—	—	5.0	4.0	s
V_a	3.15	4.5	4.5	4.5	kV
I_a	600	600	760	870	mA
I_g	180	150	220	240	mA
p_a	620	750	1100	1400	W
η_a	73	77	74	72	%
R_{g-f}	1.5	2.5	1.7	1.6	kΩ
R_a	2.5	3.8	3.3	2.6	kΩ
Feedback ratio $\frac{V_{in(pk)}}{V_{a(pk)}}$	0.2	0.17	0.2	0.2	
P_{out}	1.7	2.55	3.13	3.6	kW
*P_{load}	1.4	2.2	2.6	3.0	kW

*$0.85(P_{out}-P_{drive})$

TY6-800

TRIODE

CLASS 'C' POWER OSCILLATOR

Anode supply from three phase half-wave rectifier.

LIMITING VALUES

f max.			50	Mc/s
V_a max.			6.0	kV
V_g max.			−1.25	kV
R_{g-f} max.			10	kΩ
Duty factor max.	1.0	0.5	0.2	
Averaging time max.	—	10	5.0	s
p_a max.	800	1200	1500	W
I_a max.	750	1100	1400	mA
p_g max.	120	150	175	W
I_g max. (at p_a max.)	300	450	560	mA

OPERATING CONDITIONS

Cooling	Additional	Natural		
f	≦50	≦50	≦50	Mc/s
Duty factor	1.0	0.5	0.2	
t_{on}	—	5.0	1.0	s
t_{off}	—	5.0	4.0	s
$V_{tr(r.m.s.)}$ max.	4.25	4.25	4.25	kV
V_a	5.0	5.0	5.0	kV
I_a	700	740	900	mA
I_g	160	170	210	mA
p_a	780	960	1200	W
η_a	78	74	73	%
R_{g-f}	2.5	2.4	1.9	kΩ
R_a	3.8	3.4	2.4	kΩ
Feedback Ratio $\frac{V_{in(pk)}}{V_{a(pk)}}$	0.16	0.17	0.17	
P_{out}	2.7	2.74	3.3	kW
*P_{load}	2.3	2.2	2.7	kW

*$0.85(P_{out}-P_{drive})$

TY6-800

CLASS 'C' POWER OSCILLATOR

Anode supply from transformer without intermediate rectifier.

LIMITING VALUES

f max.			50	Mc/s
$V_{tr(r.m.s.)}$ max.			5.6	kV
V_g max.			−1.25	kV
R_{g-f} max.			10	kΩ
Duty factor max.	1.0	0.5	2.0	
Averaging time max.	—	10	5.0	s
p_a max.	800	1200	1500	W
*I_a max.	400	600	750	mA
p_g max.	120	150	175	W
*I_g max. (at p_a max.)	160	240	300	mA

OPERATING CONDITIONS

Cooling	Additional	Natural		
f	≦50	≦50	≦50	Mc/s
Duty factor	1.0	0.5	0.2	
t_{on}	—	5.0	1.0	s
t_{off}	—	5.0	4.0	s
$V_{tr(r.m.s.)}$	5.2	5.2	5.2	kV
*I_a	360	540	675	mA
*I_g	100	150	190	mA
p_a	520	870	1170	W
η_a	75	72	70	%
R_{g-f}	1800	1200	950	Ω
R_a	3.2	2.2	1.7	kΩ
Feedback Ratio $\frac{V_{in(pk)}}{V_{a(pk)}}$	0.15	0.2	0.23	
P_{out}	1.56	2.24	2.73	kW
**P_{load}	1.3	1.85	2.26	kW

*Averaged over one cycle of supply frequency.

**$0.85(P_{out}-P_{drive})$

TY6-800

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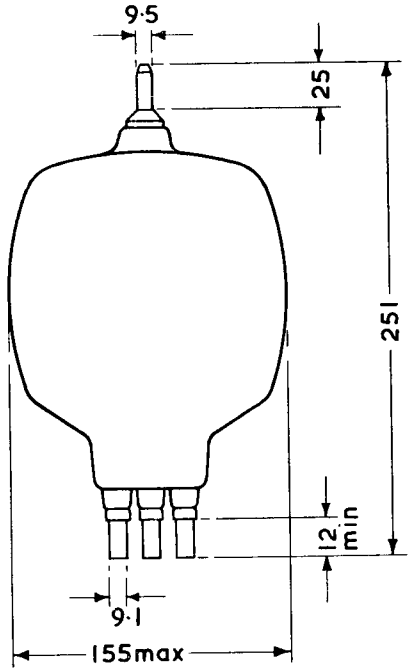
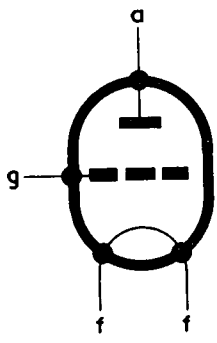
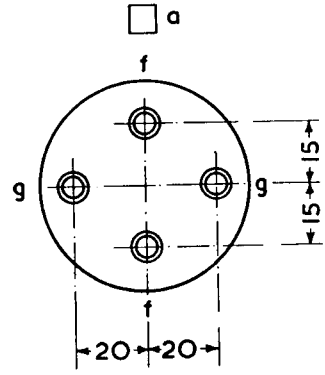
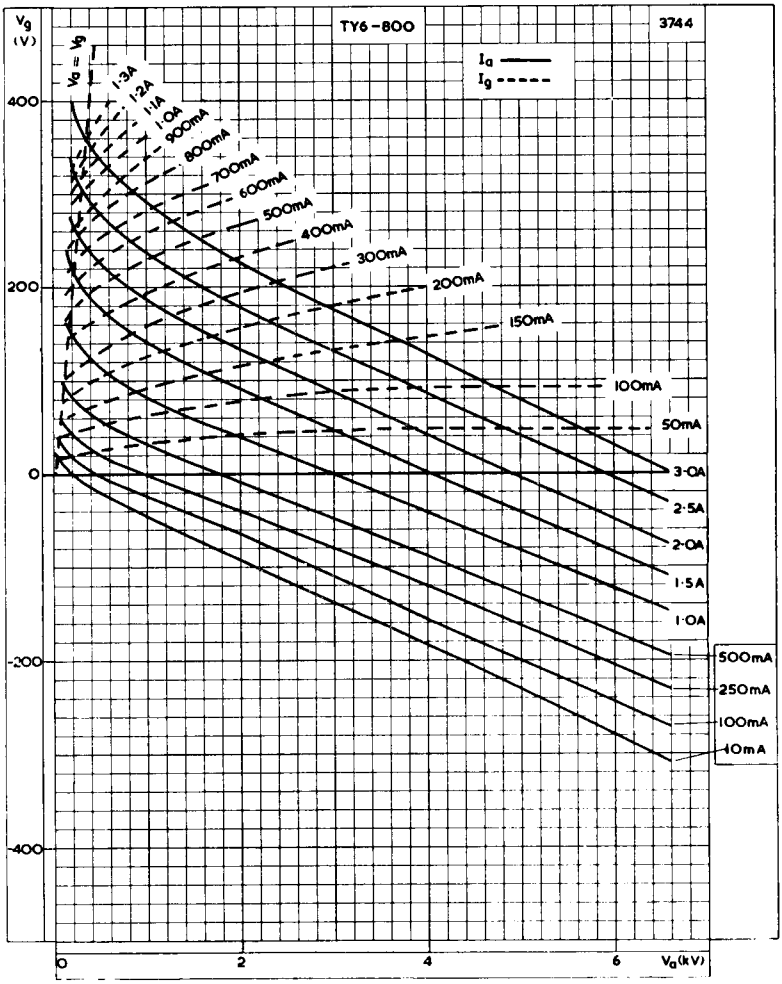






All dimensions in mm



CONSTANT CURRENT CURVES