

PRELIMINARY DATA

QUICK REFERENCE DATA

All glass triode suitable for use as r.f. power oscillator or amplifier, or a.f. power amplifier.

	Dielectric or Induction Heating	Plastic Welding	Class 'AB' A. F.	Class 'C' Telegraphy	
f_{out}	80	80	-	30	Mc/s
P_{out}	0.84	1.6	1.5	1.2	kW
η_a	78	80	70	78	%
f_{max}	100	100	-	100	Mc/s
$V_a \text{ max}$	4.0	4.0	4.0	4.0	kV
$p_a \text{ max}$	350	350	350	350	W

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS - TRANSMITTING VALVES.

INDUSTRIAL OPERATION AS CLASS 'C' OSCILLATOR

Maximum Operating Conditions

D.C. Supply

f	≤ 85	≤ 85	≤ 85	Mc/s
D_u	1.0	0.5	0.5	-
t_{on}	-	60	1	s
t_{off}	-	60	1	s
V_a	3.0	4.0	4.0	kV
I_a	360	390	500	mA
I_g	85	90	115	mA
R_g	3.0	3.9	3.0	k Ω
R_a	1.8	2.3	1.8	k Ω
Feedback ratio $\frac{v_{in(pk)}}{v_a(pk)}$	0.15	0.14	0.15	-
η_a	78	80	80	%
p_a	240	312	400	W
P_{out}	0.84	1.25	1.60	kW
$P_{load} = 85\% (P_{out} - P_{drive})$	0.68	1.03	1.32	kW

Single Phase Full Wave Rectified Supply, Unsmoothed.

f	≤85	≤85	≤85	Mc/s
Du	1	0.5	0.5	-
t _{on}	-	60	1	s
t _{off}	-	60	1	s
V _{tr}	3.0	4.0	4.0	kV
V _a (r.m.s.)	2.7	3.6	3.6	kV
I _a (r.m.s.)	360	390	500	mA
I _a	325	350	450	mA
I _g (r.m.s.)	85	90	115	mA
I _g	75	81	104	mA
R _g	3.0	3.9	3.0	kΩ
R _a	1.8	2.3	1.8	kΩ
Feedback ratio $\frac{v_{in(pk)}}{v_a(pk)}$	0.15	0.14	0.15	-
η _a	78	80	80	%
p _a	240	312	400	W
P _{out}	0.84	1.25	1.60	kW
P _{load} = 85% (P _{out} - P _{drive})	0.68	1.03	1.32	kW

Absolute Maximum Ratings

Supply	D.C.	Single Phase F.W. Rectification Unsmoothed	
f max	100	100	Mc/s
V _a max	4.0	3.6	kV
-V _g max	500	450	V
p _a max	350	350	W
p _g max	40	40	W
I _k max	490	440	mA
R _g max.	100	100	kΩ

CLASS 'AB' AMPLIFIER

Maximum Operating Conditions, Two Valves In Push-pull

V_a	4.0	3.0	2.5	kV
$-V_g$	142	110	82	V
$I_a(0)$	2 x 90	2 x 60	2 x 90	mA
$I_a(\text{max sig})$	2 x 270	2 x 290	2 x 300	mA
$I_g(\text{max sig})$	2 x 30	2 x 60	2 x 60	mA
$V_{in(g-g)} \text{ r.m.s.}$	340	330	286	V
P_a	2 x 320	2 x 220	2 x 210	W
R_{a-a}	16	14	9	k Ω
P_{out}	1.5	1.3	1.1	kW
η_a	70	75	71	%
D_{tot}	2	4	3	%

Absolute Maximum Ratings

$V_a \text{ max}$	4.0	kV
$p_a \text{ max}$	350	W
$I_k \text{ max}$	490	mA
$-V_g \text{ max}$	500	V
$R_g \text{ max}$	100	k Ω

CLASS 'C' AMPLIFIER TELEGRAPHY OR F.M. TELEPHONY

Maximum Operating Conditions

f	≤30	≤100	≤100	≤100	Mc/s
V _a	4.0	3.0	2.5	1.5	kV
-V _g	350	250	200	120	V
I _a	380	363	400	400	mA
I _g	80	69	69	80	mA
v _{g(pk)}	535	430	380	295	V
η _a	78	77	75	71	%
p _a	320	250	250	175	W
P _{out}	1.20	0.84	0.75	0.43	kW
P _{load}	1.00	0.70	0.64	0.36	kW

In Common Grid Circuit, Two Valves In Push-pull

f	100	Mc/s
V _a	3.0	kV
-V _g	250	V
I _a	2 x 363	mA
I _g	2 x 69	mA
v _{g(pk)}	2 x 430	V
η _a	77	%
p _a	500	W
P _{out} (including P _{drive})	1.94	kW

Absolute Maximum Ratings

V _{a max}	4.0	kV
p _{a max}	350	W
p _{g max}	40	W
I _{k max}	490	mA
-V _{g max}	500	V
R _{g max}	100	kΩ

CATHODE

Directly heated, thoriated tungsten filament

V_f	5.0	V
I_f	14	A

CAPACITANCES

c_{g-f}	150	mpF
c_{a-f}	7.0	pF
c_{a-g}	5.3	pF

CHARACTERISTICS

(Measured at $I_a = 90\text{mA}$)

g_m	5.0	mA/V
μ	25	

COOLING

Maximum temperature of base pin seals	180	$^{\circ}\text{C}$
Maximum temperature of anode seal	220	$^{\circ}\text{C}$

Below 30 Mc/s, radiation and convection cooling is likely to be sufficient but an anode terminal connector of large volume and surface area is necessary in order to keep the anode seal cool.

Above 30 Mc/s or with high ambient temperature it may be necessary to direct a flow of cool air to the anode seal and to the base of the valve.

MOUNTING POSITION

Vertical, base up or down.

PHYSICAL DATA

Weight of valve	6 oz.	(170 g)
Weight of valve in carton	1 lb 8oz.	(680 g)

