

QUICK HEATING DOUBLE TETRODE

YL1080

PRELIMINARY DATA

QUICK REFERENCE DATA

Quick heating single-ended double tetrode for mobile transmitters.
70 % power output in less than half a second.

	Frequency Trebler	Class 'C' Telegraphy or F.M. Telephony	
f _{out}	200	200	Mc/s
P _{out}	5	14.5	W
f max.	200	200	Mc/s
V _a max.	300	300	V
pa max.	2 x 5.0	2 x 5.0	W

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS - TRANSMITTING VALVES which precede this section of the handbook.

CLASS 'C' TELEGRAPHY OR F.M. TELEPHONY

Absolute maximum ratings

f max.		200	Mc/s
V _a max.		300	V
V _{g2}		200	V
-V _{g1} max.		150	V
I _{g1} max.		2 x 3.0	mA
I _k max.		2 x 50	mA
i _k (pk) max.		2 x 225	mA
pa max.		2 x 5.0	W
pg ₂ max.		2 x 1.0	W
pg ₁ max.		2 x 0.2	W
R _{g1} - f max.		100	kΩ

Typical operation

f	200	200	200	Mc/s
V _a	300	250	200	V
V _{g2}	170	170	150	V
-V _{g1}	40	40	40	V
vin(g ₁ -g ₁) pk	110	110	115	V
I _a	2 x 37.5	2 x 33.5	2 x 35	mA
I _{g2}	2 x 1.2	2 x 0.9	2 x 1.1	mA
I _{g1}	2 x 0.9	2 x 1.1	2 x 1.4	mA
pa	2 x 4.0	2 x 2.9	2 x 2.8	W
pg ₂	2 x 0.2	2 x 0.15	2 x 0.17	W
P _{load} (driver)	1.0	1.0	1.0	W
P _{out}	14.5	11	8.4	W
P _{load}	12	9.0	7.4	W
η _a	65	65	60	%

CLASS 'C' ANODE AND SCREEN-GRID MODULATION

Carrier conditions for a modulation factor of 1.

Absolute maximum ratings

f max.	200	Mc/s
V _a max.	240	V
V _{g2} max.	200	V
-V _{g1} max.	150	V
I _{g1} max.	2 x 3.0	mA
I _k max.	2 x 40	mA
i _k (pk) max.	2 x 180	mA
p _a max.	2 x 3.3	W
p _{g2} max.	2 x 1.65	W
p _{g1} max.	2 x 0.2	W
R _{g1-k} max.	100	kΩ

Typical operation

f	200	Mc/s
V _a	200	V
V _{g2}	130	V
-V _{g1}	50	V
I _a	2 x 33.5	mA
I _{g2}	2 x 1.3	mA
I _{g1}	2 x 0.75	mA
v _{in} (g ₁ -g ₁)pk	130	V
P _{load} (driver)	1.0	W
p _a	2 x 2.65	W
p _{g2}	0.46	W
P _{out}	8.0	W
P _{load}	7.0	W
η _a	60	%
For 100 % modulation		
P mod.	7.0	W
v _{g2} (pk)	130	V

FREQUENCY TREBLER

Absolute maximum ratings

f max.	200	Mc/s
V _a max.	300	V
V _{g2} max.	200	V
-V _{g1} max.	150	V
I _{g1} max.	2 x 2.0	mA
I _k max.	2 x 35	mA
i _k (pk) max.	2 x 225	mA
p _a max.	2 x 5.0	W
p _{g2} max.	2 x 1.0	W
p _{g1} max.	2 x 0.2	W
R _{g1-f} max.	100	kΩ

Typical operation

f _{out}	200	200	200	Mc/s
V _a	300	250	200	V
V _{g2}	160	160	160	V
-V _{g1}	100	100	100	V
I _a	2 x 24	2 x 25	2 x 28.5	mA
I _{g2}	2 x 1.0	2 x 0.95	2 x 1.5	mA
I _{g1}	2 x 1.0	2 x 1.0	2 x 1.6	mA
v _{in(g1-g1)pk}	230	230	230	V
p _a	2 x 4.7	2 x 4.25	2 x 4.0	W
p _{g2}	2 x 0.15	2 x 0.16	2 x 0.23	W
P _{load (driver)}	1.0	1.0	2.0	W
P _{out}	5	4	3.5	W
P _{load}	3.5	3.0	2.8	W
η _a	35	34	31	%

OPERATING NOTE

I_{g1} and I_{g2} will vary from valve to valve, hence the use of fixed resistors (R_{g1} and R_{g2}) will result in variations of input and output power. It is therefore recommended that R_{g2} be made adjustable.

CATHODE

Directly heated, harp type, 70 % P_{out} in less than 0.5 second.

V _f (d. c. or r. m. s.)	1.6	V
I _f	2.5	A

Frequency of filament supply

Sine wave	max. 200	c/s
Square wave	Any	

CAPACITANCES

Internally neutralised for push-pull operation.

ca-g ₁ (each section)	100	mpF
c _{out} (each section)	3.2	pF
c _{in} (each section)	8.5	pF
ca''-g ₁ '	100	mpF
ca'-g ₁ ''	100	mpF
cg ₁ '-g ₁ ''	2.4	pF
ca'-a''	75	mpF

CHARACTERISTICS (measured at V_a = 200V, V_{g2} = 200V, I_a = 30mA)

g _m	3.5	mA/V
μ _{g1-g2}	7.5	

COOLING

Radiation and convection

Tbulb max.	225	°C
Tpins max.	120	°C

MOUNTING POSITION

Any

PHYSICAL DATA

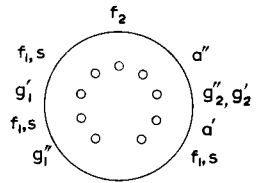
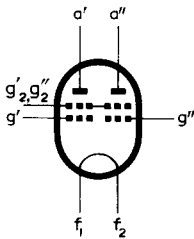
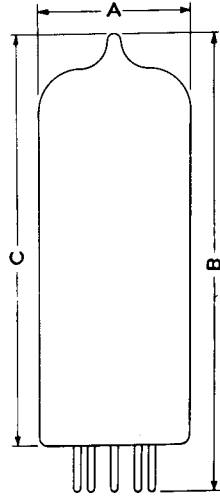
Weight of valve	{	0.6	oz
		16	g
Weight of valve plus carton	{	0.8	oz
		23	g

QUICK HEATING DOUBLE TETRODE

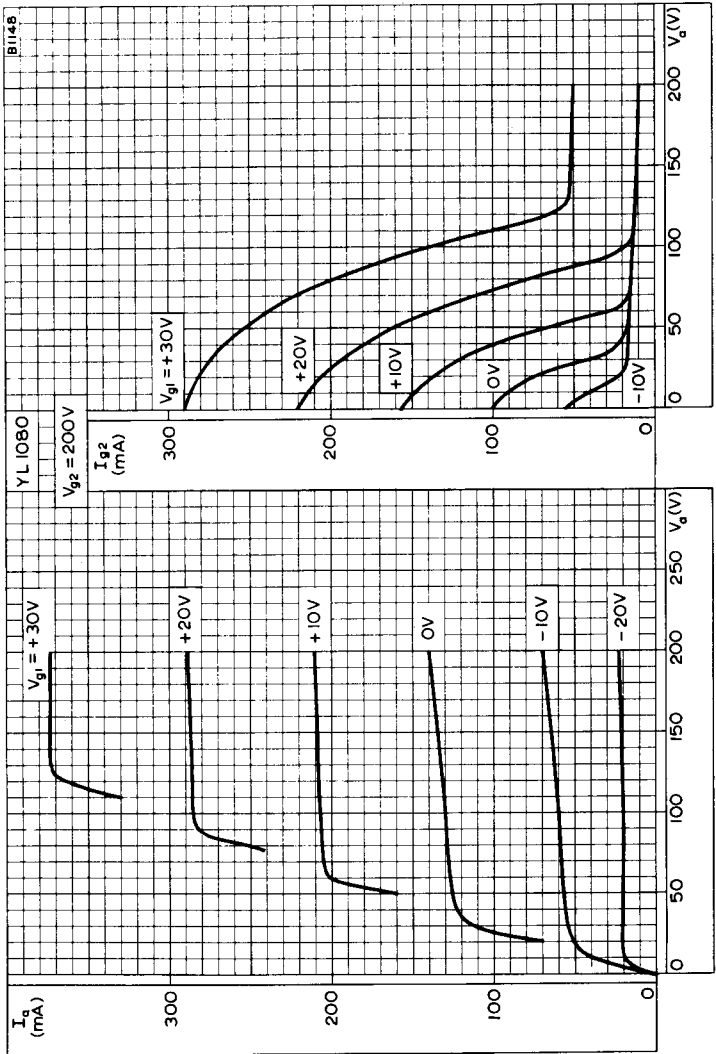
YL1080

B1147

Dimensions (max)		
	Inches	Millimetres
A	0.875	22.2
B	3.094	78.5
C	2.813	71.5



B9A Base



ANODE AND SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL GRID VOLTAGE AS PARAMETER $V_{g2} = 200V$.