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	
fout	200	200	Mc/s
Pout	5	14.5	W
f max.	200	200	Mc/s
Va 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
Va max.	300	V
Vg2	200	V
-Vg1 max.	150	V
Ig1 max.	2 x 3.0	mA
Ik max.	2 x 50	mA
ik (pk) max.	2 x 225	mA
pa max.	2 x 5.0	W
pg2 max.	2 x 1.0	W
pg1 max.	2 x 0.2	W
Rg1 - f max.	100	kΩ

Typical operation

f	200	200	200	Mc/s
Va	300	250	200	V
Vg2	170	170	150	V
-Vg1	40	40	40	V
vin(g1-g1) pk	110	110	115	V
Ia	2 x 37.5	2 x 33.5	2 x 35	mA
Ig2	2 x 1.2	2 x 0.9	2 x 1.1	mA
Ig1	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
pg2	2 x 0.2	2 x 0.15	2 x 0.17	W
Pload (driver)	1.0	1.0	1.0	W
Pout	14.5	11	8.4	W
Pload	12	9.0	7.4	W
ηa	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
Va max.	240	V
Vg2 max.	200	V
-Vg1 max.	150	V
Ig1 max.	2 x 3.0	mA
Ik max.	2 x 40	mA
ik (pk) max.	2 x 180	mA
pa max.	2 x 3.3	W
pg2 max.	2 x 1.65	W
pg1 max.	2 x 0.2	W
Rg1-k max.	100	kΩ

Typical operation

f	200	Mc/s
Va	200	V
Vg2	130	V
-Vg1	50	V
Ia	2 x 33.5	mA
Ig2	2 x 1.3	mA
Ig1	2 x 0.75	mA
vin(g1-g1)pk	130	V
Pload (driver)	1.0	W
pa	2 x 2.65	W
pg2	0.46	W
Pout	8.0	W
Pload	7.0	W
ηa	60	%
For 100 % modulation		
P mod.	7.0	W
vg2 (pk)	130	V

FREQUENCY TREBLER

Absolute maximum ratings

f max.	200	Mc/s
Va max.	300	V
Vg2 max.	200	V
-Vg1 max.	150	V
Ig1 max.	2 x 2.0	mA
Ik max.	2 x 35	mA
ik(pk) max.	2 x 225	mA
pa max.	2 x 5.0	W
pg2 max.	2 x 1.0	W
pg1 max.	2 x 0.2	W
Rg1-f max.	100	kΩ

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Typical operation

fout	200	200	200	Mc/s
Va	300	250	200	V
Vg2	160	160	160	V
-Vg1	100	100	100	V
Ia	2 x 24	2 x 25	2 x 28.5	mA
Ig2	2 x 1.0	2 x 0.95	2 x 1.5	mA
Ig1	2 x 1.0	2 x 1.0	2 x 1.6	mA
vin(g1-g1)pk	230	230	230	V
pa	2 x 4.7	2 x 4.25	2 x 4.0	W
pg2	2 x 0.15	2 x 0.16	2 x 0.23	W
Pload (driver)	1.0	1.0	2.0	W
Pout	5	4	3.5	W
Pload	3.5	3.0	2.8	W
ηa	35	34	31	%

OPERATING NOTE

Ig1 and Ig2 will vary from valve to valve, hence the use of fixed resistors (Rg1 and Rg2) will result in variations of input and output power. It is therefore recommended that Rg2 be made adjustable.

CATHODE

Directly heated, harp type, 70 % Pout in less than 0.5 second.

Vf (d.c. or r.m.s.)	1.6	V
If	2.5	A

Frequency of filament supply

Sine wave	max. 200	c/s
Square wave	Any	

CAPACITANCES

Internally neutralised for push-pull operation.

ca-g1 (each section)	100	mpF
cout (each section)	3.2	pF
cin (each section)	8.5	pF
ca''-g1'	100	mpF
ca'-g1''	100	mpF
cg1'-g1''	2.4	pF
ca'-a''	75	mpF

CHARACTERISTICS (measured at Va = 200V, Vg2 = 200V, Ia = 30mA)

gm	3.5	mA/V
μg1-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

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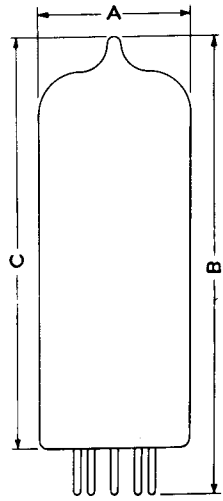
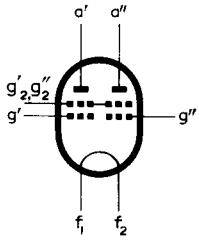
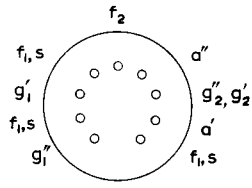
B1147

Dimensions (max)		
	Inches	Millimetres
A	0·875	22·2
B	3·094	78·5
C	2·813	71·5







B9A Base

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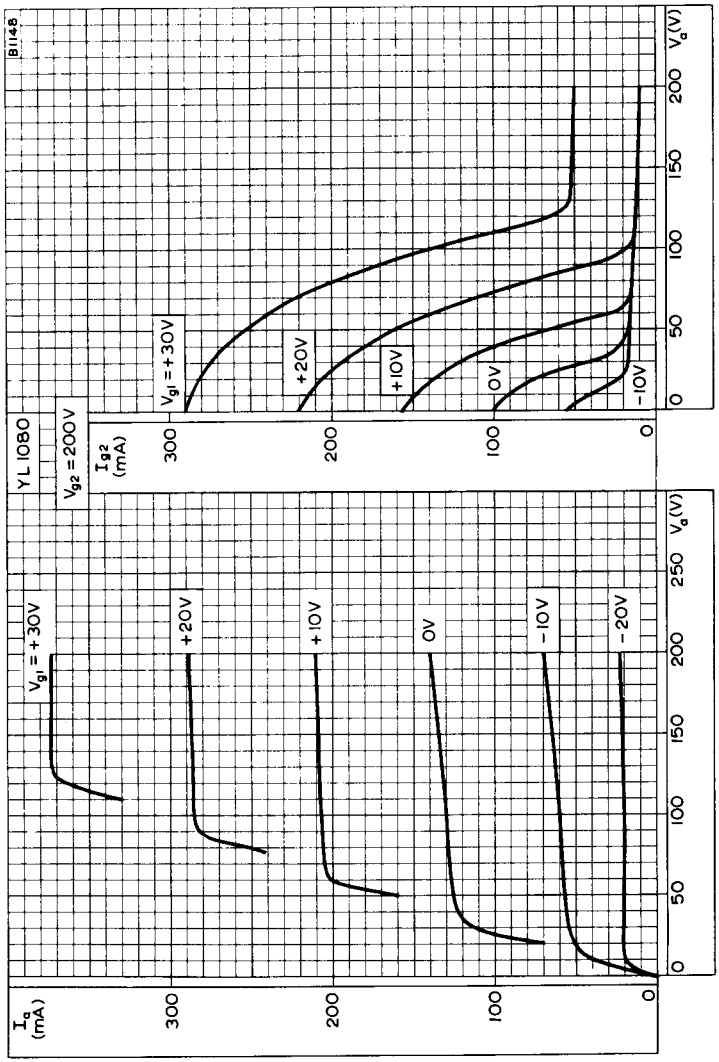

ANODE AND SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL GRID VOLTAGE AS PARAMETER Vg2=200V.