QUICK HEATING DOUBLE TETRODE

YL1130

QUICK REFERENCE DATA

Amplifier and frequency multiplier for intermittent use in mobile transmitters. 70% power output in less than 0.5 seconds.

	Frequency Trebler	Telephony, Anode and Screen Grid Modulation, Class 'C'		Telegraphy or F.M. Telephony, Class 'C'		
f	500/167	200	500	200	500	Mc/s
P_{out}	3.5	9.4	6.6	16	8.0	W
f max.	500	500		500		Mc/s
V_a max.						
(f=200Mc/s)	-	240		300		V
(f=500Mc/s)	200	200		200		V
p_a max.	2×4.0	2×2.6		2×4.0		W

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

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

OPERATING CONDITIONS

f	200	500	Mc/s
P_{out}	16	8.0	W
P_{load}	13	6.5	W
η_a	68	57	%
V_a	275	175	V
I_a	2×42.5	2×40	mA
V_{g2}	175	175	V
I_{g2}	2×7.0	2×6.0	mA
$-V_{g1}$	20	22	V
I_{g1}	2×1.3	2×1.2	mA
$v_{in(g1-g1)pk}$	65	65	V
$P_{load(driver)}$	0.7	1.5	W
p_a	2×3.5	2×3.0	W
p_{g2}	2×1.2	2×1.0	W

TELEPHONY, ANODE AND SCREEN-GRID MODULATION, CLASS 'C'

OPERATING CONDITIONS (Carrier conditions for 100% modulation).

f	200	500	Mc/s
P_{out}	9.4	6.6	W
P_{load}	8.0	5.0	W
η_a	67	59	%
V_a	220	175	V
I_a	2 x 32	2 x 32	mA
V_{g2}	175	175	V
I_{g2}	2 x 4.0	2 x 3.5	mA
$-V_{g1}$	35	30	V
I_{g1}	2 x 1.2	2 x 1.2	mA
$v_{in(g1-g1)pk}$	105	100	V
$P_{load(driver)}$	0.6	1.5	W
p_a	2 x 2.4	2 x 2.3	W
p_{g2}	2 x 0.8	2 x 0.8	W
For 100% modulation			
P_{mod}	8.0	6.5	W
$v_{g2(pk)}$	125	125	V

FREQUENCY TREBLER

OPERATING CONDITIONS

f_{out}/f_{in}	500/167	Mc/s
P_{out}	3.5	W
P_{load}	2.0	W
η_a	33	%
V_a	175	V
I_a	2 x 30	mA
V_{g2}	175	V
I_{g2}	2×4.5	mA ←
$-V_{g1}$	75	V
I_{g1}	2×1.2	mA ←
$v_{in(g1-g1)pk}$	175	V
$P_{load(driver)}$	1.5	W ←
p_a	2 x 3.5	W
p_{g2}	2 x 0.8	W

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RATINGS (ABSOLUTE MAXIMUM SYSTEM) ←

	Frequency Trebler	Telephony, Class 'C'		Telegraphy, Class 'C'		
f max.	500	200	500	200	500	Mc/s
V_a max.	200	240	200	300	200	V
V_{g2} max.	200	200	200	200	200	V
$-V_{g1}$ max.	150	150	150	150	150	V
I_k max.	2 x 40	2 x 40	2 x 40	2×60	2×60	mA
p_a max.	2 x 4.0	2 x 2.6	2 x 2.6	2 x 4.0	2 x 4.0	W
p_{g2} max.	2 x 1.3	2 x 1.0	2 x 1.0	2×1.5	2×1.5	W
I_{g1} max.	2 x 3.0	2 x 3.0	2 x 3.0	2×5.0	2×5.0	mA
p_{g1} max.	2 x 0.2	2 x 0.2	2 x 0.2	2 x 0.2	2 x 0.2	W
R_{g1-f} max. (per section)	100	100	100	100	100	kΩ

CATHODE

Quick heating directly heated filament. 70% P_{out} in less than 0.5 second.

*V_f	1.1	V
I_f	2.9	A ←

Frequency of filament supply

Sine wave	max. 200	c/s
Square wave	Any	

*The filament has been designed to accept temporary fluctuations of supply voltage of ±15%.

CAPACITANCES

c_{in} (two sections in push-pull)	4.1	pF
c_{out} (two sections in push-pull)	1.2	pF

Internally neutralised for push-pull operation.

CHARACTERISTICS (measured at $V_a = V_{g2} = 175V$, $I_a = 40mA$)

g_m	7.0	mA/V
μ_{g1-g2}	22	←

MOUNTING POSITION Any

If the valve is mounted horizontally it is recommended that pins 3 and 7 be in the vertical plane.

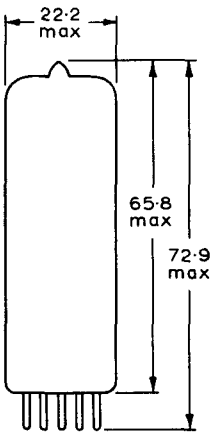
COOLING Radiation and convection

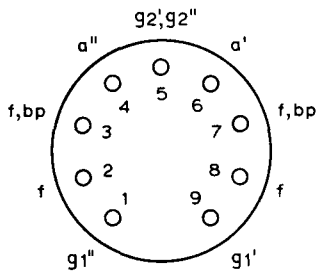
Maximum bulb temperature	230	°C

PHYSICAL DATA

	oz	g
Weight of valve	0.6	16

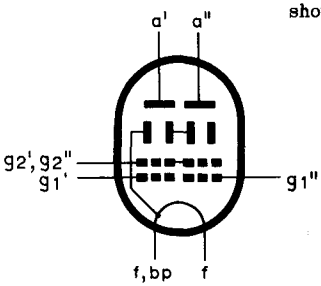
←





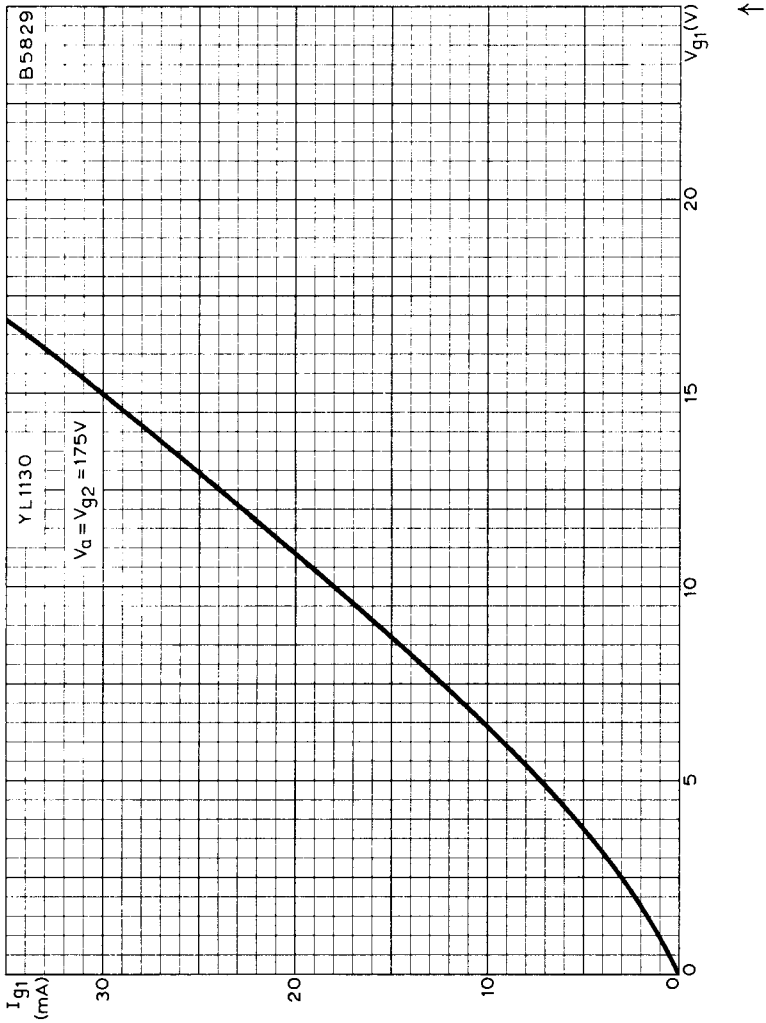
B9A Base

Filament connections (pins 3, 7 and 2, 8) should be connected in parallel on the socket.

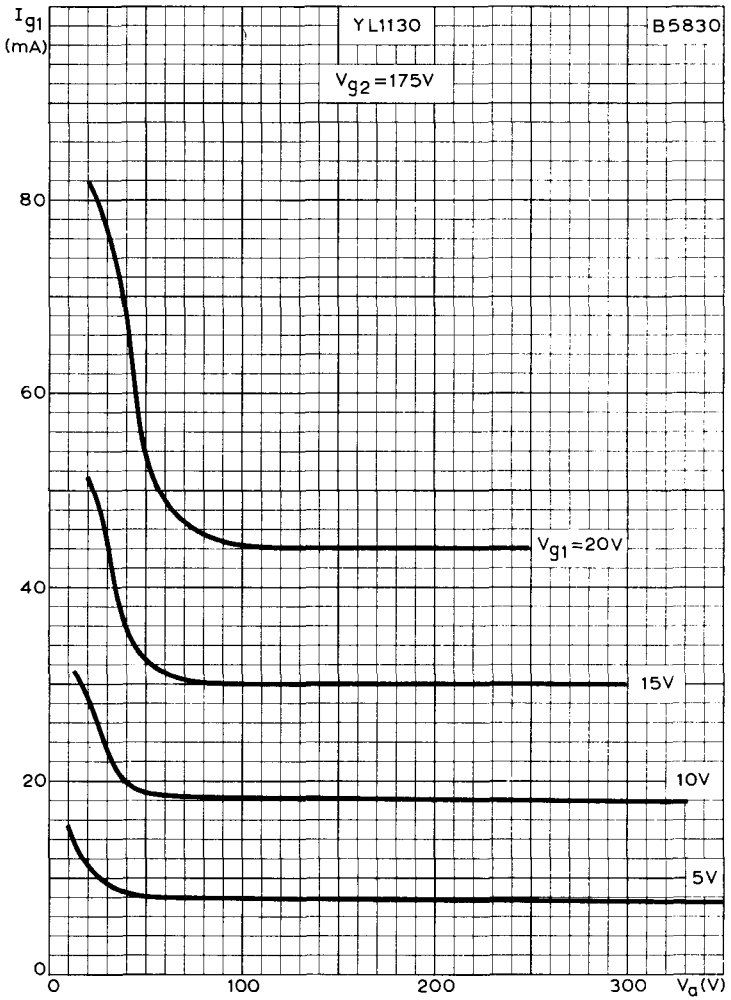


All dimensions in mm

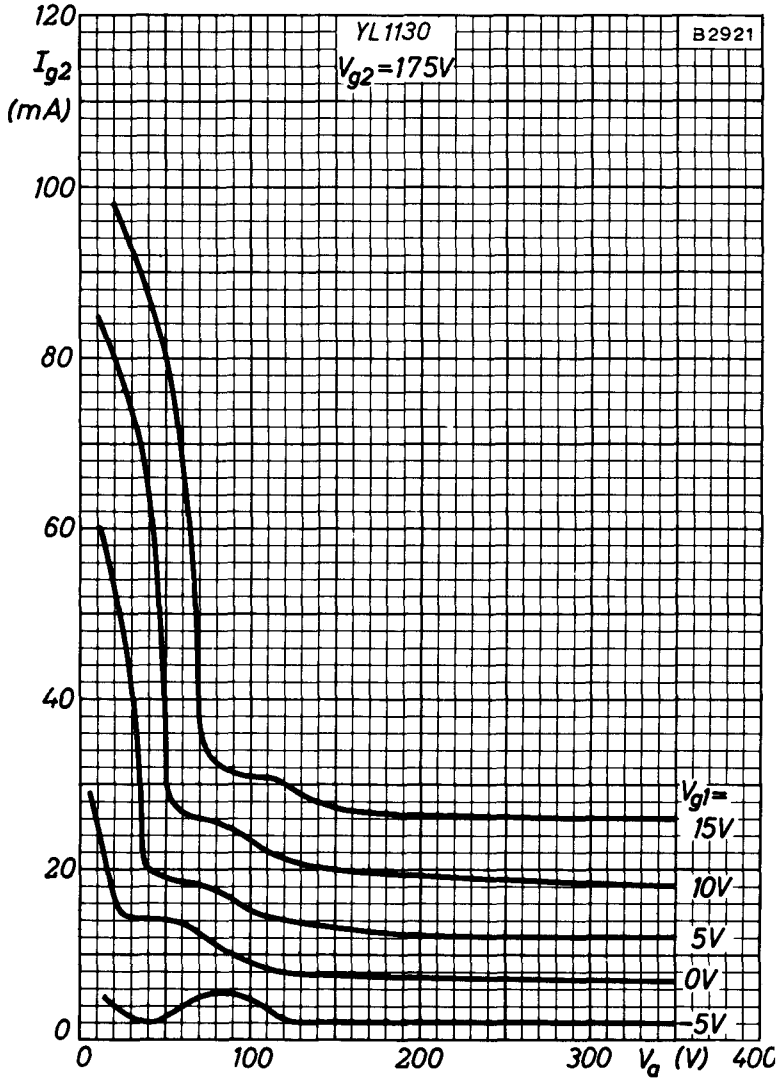
B5826



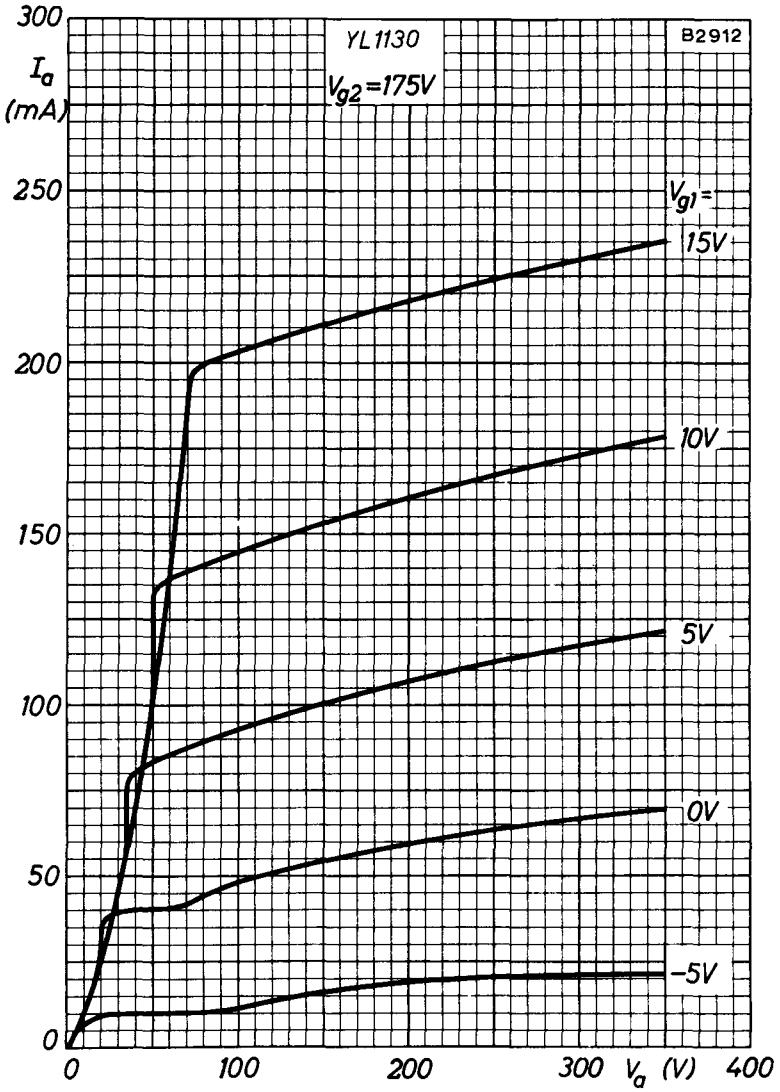
CONTROL-GRID CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE.
$V_a = V_{g2} = 175V$ (EACH SECTION)



CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER
V_{g2} = 175V (EACH SECTION)



SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER
V_{g2}=175V (EACH SECTION)



ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER
V_{g2} = 175V (EACH SECTION)