

QUICK HEATING DOUBLE TETRODE for use as output tube, frequency multiplier or modulator. The tube has been designed for intermittent filament service in transistorized mobile equipment

FILAMENT: oxide coated

HEATING: direct; parallel supply

Filament voltage $V_f = 3.15 \text{ V} \pm 10 \%$

Filament current $I_f = 1.65 \text{ A}$

Cathode heating time for obtaining an output power of more than 70 % of the ultimate power $T_h = \text{max. } 1 \text{ sec.}$
It is recommended that the filament be fed from a D.C.-A.C. converter

TYPICAL CHARACTERISTICS

Anode voltage	$V_a = 200 \text{ V}$
Grid No.2 voltage	$V_{g2} = 200 \text{ V}$
Anode current	$I_a = 30 \text{ mA}$
Mutual conductance	$S = 3.2 \text{ mA/V}$
Amplification factor of grid No.1 with respect to grid No.2	$\mu_{g2g1} = 7.5$

INTERMITTENT SERVICE

Freq.	C teleg. 1) FM teleph.		Tripler - doubler	
(Mc/s)	$V_a(\text{V})$	$P(W) \text{ }^2)$	$V_a(\text{V})$	$P(W) \text{ }^3)$
200	250	11		
	200	9.5		
27.5/165			250	1.25
			200	1.0

¹⁾ Two systems in push-pull

²⁾ Output power in the load according to circuit diagram page 3

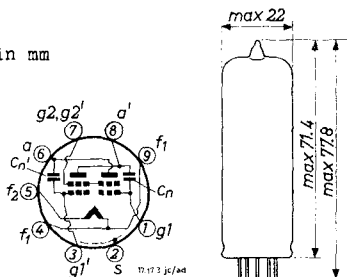
³⁾ Output power in the load according to circuit diagram page 4

CAPACITANCES (without external shield)

Anode to all other elements except grid No.1	$C_a = C_{a'} = 3.2 \text{ pF}$
Grid No.1 to all other elements except anode	$C_{g_1} = C_{g_1'} = 6.8 \text{ pF}$
Grid No.1 to anode	$C_{ag_1} = C_{ag_1'} < 0.1 \text{ pF}$
Anode of one system to grid No.1 of the other system	$C_{ag_1'} = C_{ag_1} < 0.13 \text{ pF}$
Between the grids No.1	$C_{g_1 g_1} = 1.9 \text{ pF}$
Between the anodes	$C_{aa'} = 0.09 \text{ pF}$

The tube has been internally neutralized up to 200 Mc/s

Dimensions in mm



Base: NOVAL

ACCESSORIES

Socket	B8 700 19
Tube retainer	40647

MOUNTING POSITION

If the tube is mounted with its main axis deviating from the vertical, it is recommended that the pins 2 and 7 be placed in a vertical plane

COOLING: radiation and convection

The use of a closed tube shield is not allowed

TEMPERATURE LIMITS (Absolute limits)

Bulb temperature	= max. 225 °C
Pin temperature	= max. 120 °C

NET WEIGHT: 16 g Shipping weight: 23 g

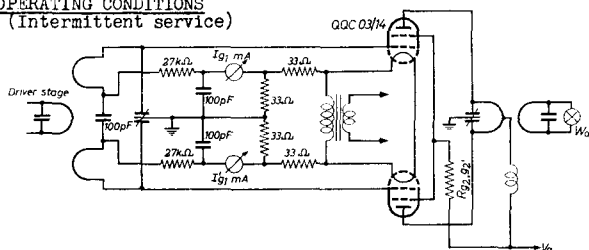
REMARK. The filament voltage should be switched on during the whole conversation period. Interrupting the filament voltage during this period is not recommended.

H.F. class C telegraphy or F.M. telephony; two systems in push-pull

LIMITING VALUES (Intermittent service; absolute limits)

Frequency	f up to	200 Mc/s
Anode voltage	$V_a = V_{a'} = \max.$	300 V
Anode dissipation	$W_a = W_{a'} = \max.$	7 W
Anode current	$I_a = I_{a'} = \max.$	55 mA
Grids No.2 voltage	$V_{g2, g2'} = \max.$	200 V
Grids No.2 dissipation	$W_{g2, g2'} = \max.$	2x1 W
Negative grid No.1 voltage	$-V_{g1} = -V_{g1'} = \max.$	150 V
Grid No.1 dissipation	$W_{g1} = W_{g1'} = \max.$	0.2 W
Grid No.1 current	$I_{g1} = I_{g1'} = \max.$	4 mA
Grid No.1 circuit resistance	$R_{g1} = R_{g1'} = \max.$	100 k Ω
Cathode current	$I_k = \max.$	2x65 mA
Peak cathode current	$I_{kp} = \max.$	2x300 mA

OPERATING CONDITIONS (Intermittent service)



Frequency	$f = 200$	200 Mc/s
Anode voltage	$V_a = V_{a'} = 250$	200 V
Grids No.2 supply voltage	$V_{bg2, g2'} = 250$	200 V
Grids No.2 resistor	$R_{g2, g2'} = 22$	6.8 k Ω
Anode current	$I_a = I_{a'} = 45$	45 mA
Grids No.2 current	$I_{g2, g2'} = 4.2$	5.1 mA
Grid No.1 current	$I_{g1} = I_{g1'} = 1.5$	1.5 mA
Anode input power	$W_{ia} = W_{ia'} = 11.2$	9.0 W
Anode dissipation	$W_a = W_{a'} = 4.5$	3.5 W
Grids No.2 dissipation	$W_{g2, g2'} = 0.65$	0.85 W
Output power	$W_{\ell} = 11$	9.5 W ¹⁾

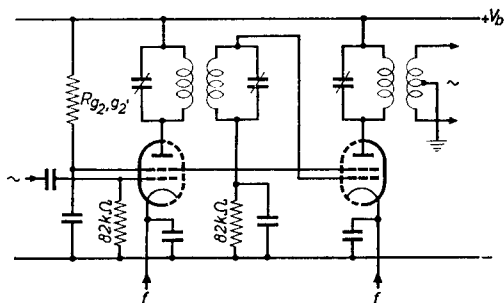
¹⁾ Useful power in the load

H.F. class C frequency tripler and doubler (one system as tripler and one system as doubler)

LIMITING VALUES (Intermittent service; absolute limits)

Frequency	f	up to	200 Mc/s
Anode voltage	$V_a = V_{a'}$	= max.	300 V
Anode dissipation	$W_a = W_{a'}$	= max.	7 W
Anode current	$I_a = I_{a'}$	= max.	45 mA
Grids No.2 voltage	$V_{g2, g2'}$	= max.	200 V
Grids No.2 dissipation	$W_{g2, g2'}$	= max.	2x1 W
Grid No.1 current	$I_{g1} = I_{g1'}$	= max.	3 mA
Grid No.1 circuit resistance	$R_{g1} = R_{g1'}$	= max.	100 k Ω
Cathode current	I_k	= max.	2x50 mA
Peak cathode current	I_{kp}	= max.	2x300 mA

OPERATING CONDITIONS (Intermittent service)



For data see page 5.

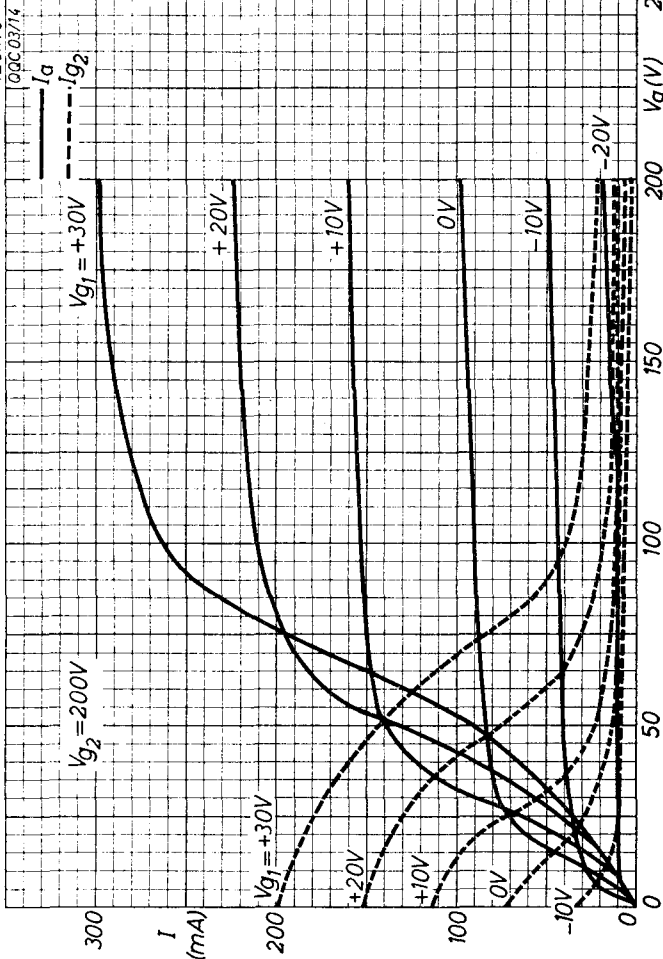
OPERATING CONDITIONS as frequency tripler and doubler;
intermittent service (continued)

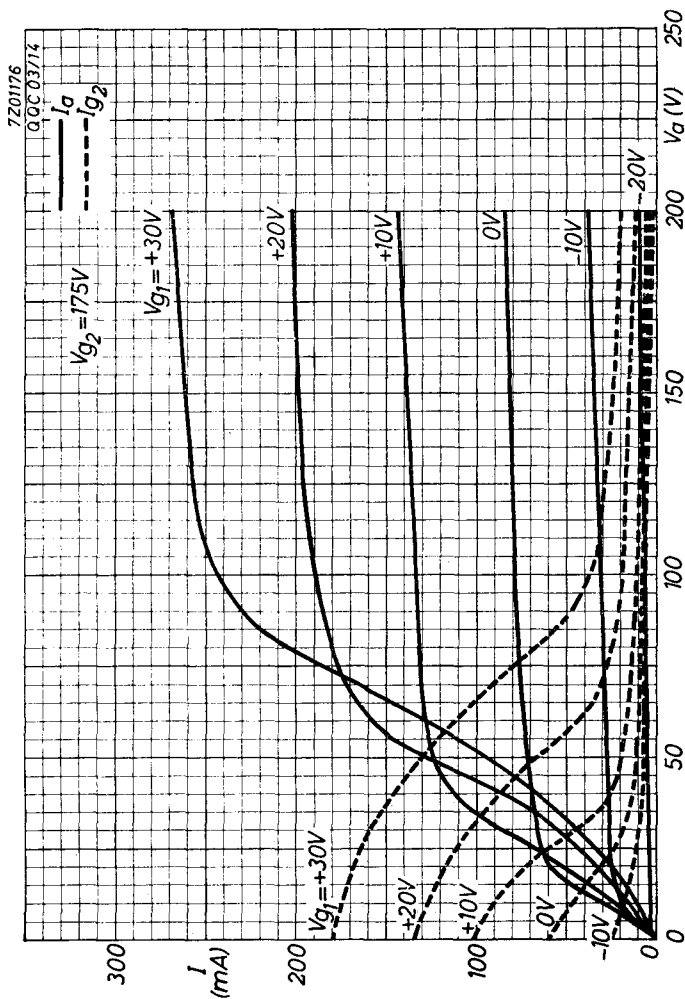
	Tripler	Doubler
Frequency	$f = 27.5/82.5$	$82.5/165 \text{ Mc/s}$
Anode voltage	$V_a = V_a' = 250$	250 V
Grids No.2 supply voltage	$V_{b2, g2'} = 250$	V
Grids No.2 resistor	$R_{g2, g2'} = 39$	k Ω
Anode current	$I_a = I_a' = 20$	20 mA
Grids No.2 current	$I_{g2, g2'} = 4.0$	mA
Grid No.1 current	$I_{g1} = I_{g1}' = 0.75$	1.25 mA
Anode input power	$W_{ia} = W_{ia}' = 5.0$	5.0 W
Anode dissipation	$W_a = W_a' = 3.5$	3.0 W
Grids No.2 dissipation	$W_{g2, g2'} = 0.38$	W
Output power	$W_o = 1.5$	2.0 W
Efficiency	$\eta = 30$	40 %
Output power	$W_l = 1.25$	1.25 W ¹⁾

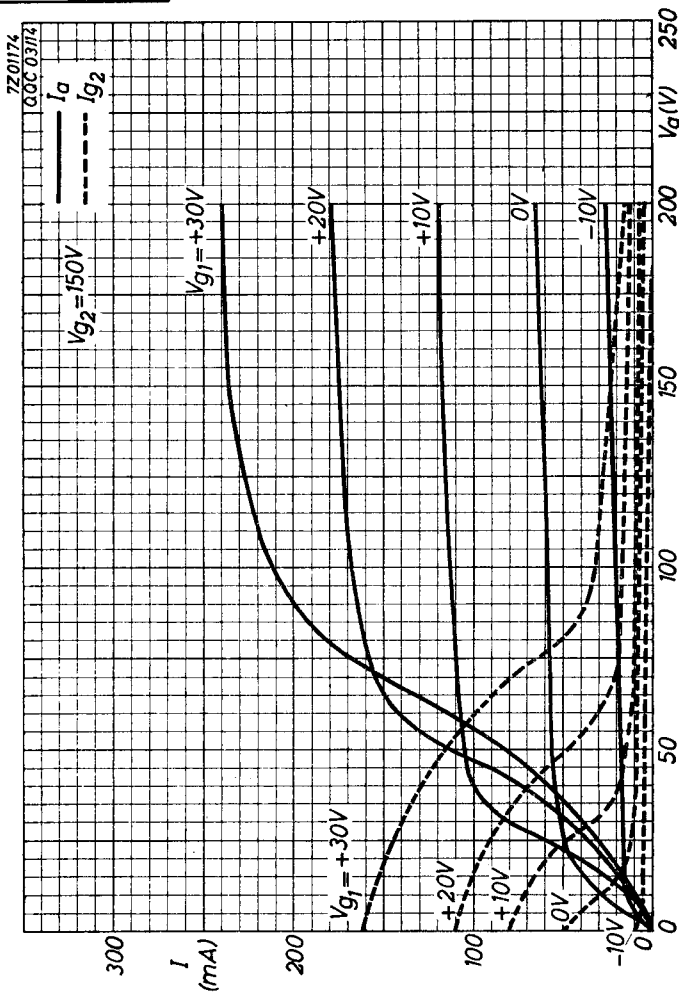
	Tripler	Doubler
Frequency	$f = 27.5/82.5$	$82.5/165 \text{ Mc/s}$
Anode voltage	$V_a = V_a' = 200$	200 V
Grids No.2 supply voltage	$V_{b2, g2'} = 200$	V
Grids No.2 resistor	$R_{g2, g2'} = 22$	k Ω
Anode current	$I_a = I_a' = 20$	20 mA
Grids No.2 current	$I_{g2, g2'} = 4.0$	mA
Grid No.1 current	$I_{g1} = I_{g1}' = 0.75$	1.25 mA
Anode input power	$W_{ia} = W_{ia}' = 4.0$	4.0 W
Anode dissipation	$W_a = W_a' = 2.8$	2.4 W
Grids No.2 dissipation	$W_{g2, g2'} = 0.45$	W
Output power	$W_o = 1.2$	1.6 W
Efficiency	$\eta = 30$	40 %
Output power	$W_l = 1.0$	1.0 W ¹⁾

¹⁾ Useful power in the load

7201175









QQC03/14

page	sheet	date
1	1	1962.12.12
2	2	1962.12.12
3	3	1962.12.12
4	4	1962.12.12
5	5	1962.12.12
6	A	1962.12.12
7	B	1962.12.12
8	C	1962.12.12
9	FP	2000.01.15