R.F. DOUBLE TRIODE

Double triode intended for various applications in television receivers.

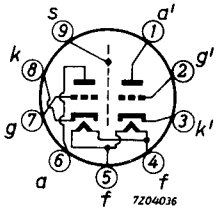
QUICK REFERENCE DATA			
Anode current	I_a	10	mA
Transconductance	S	6.7	mA/V
Amplification factor	μ	48	-

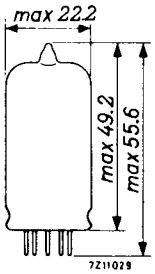
HEATING: Indirect by A.C. or D.C.; series supply

Heater current	I_f	300	mA
Heater voltage	V_f	9.0	V

DIMENSIONS AND CONNECTIONS Dimensions in mm

Base: Noval





CAPACITANCES (each unit unless otherwise specified)

Anode to grid	C_{ag}	1.5	pF
Anode to cathode	C_{ak}	0.18	pF
Anode to cathode + heater + screen	$C_{a/kfs}$	1.2	pF
Grid to cathode + heater + screen	$C_{g/kfs}$	3.1	pF
Anode to cathode + heater + screen (measured with external screen of 22.5 mm diam.)	$C_{a/kfs}$	1.8	pF
Anode to anode other unit	$C_{aa'}$	max. 0.04	pF
Anode to anode other unit (measured with external screen of 22.5 mm diam.)	$C_{aa'}$	max. 0.008	pF
Grid to grid other unit	$C_{gg'}$	max. 0.003	pF
Anode to grid other unit	$C_{ag'}$	max. 0.008	pF
Anode to grid other unit	$C_{a'g}$	max. 0.008	pF
Anode to cathode other unit	$C_{ak'}$	max. 0.008	pF
Anode to cathode other unit	$C_{a'k}$	max. 0.008	pF
Grid to cathode other unit	$C_{gk'}$	max. 0.003	pF
Grid to cathode other unit	$C_{g'k}$	max. 0.003	pF

TYPICAL CHARACTERISTICS (each unit)

Anode voltage	V_a	100	170	200	V
Grid voltage	V_g	−1.2 [1])	−1.75	−2.4	V
Anode current	I_a	4.5	10	10	mA
Transconductance	S	4.8	6.7	6	mA/V
Amplification factor	μ	46	48	46	

REMARK

Microphony

This tube can be used without special precautions against microphony in A.F. applications in which the input voltage $V_i \geq 5$ mV for an output of 50 mW (or 50 mV for an output 5 W) provided the peak acceleration of the tube is not greater than indicated in the section "Microphony" of the "General Operational Recommendations".

[1]) In this case grid current may occur. If this is not permissible, a condition with a bias of −1.5 V should be chosen.

OPERATING CHARACTERISTICS (each unit)

As self-oscillating additive mixer

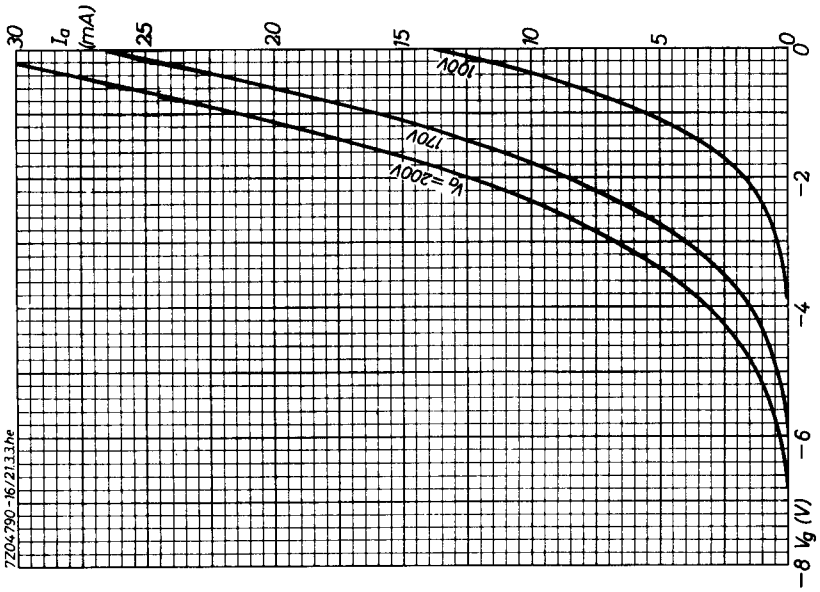
Anode supply voltage	V_b	100	170	200	V
Anode resistor	R_a	4.7	4.7	8.2	kΩ
Grid resistor	R_g	1	1	1	MΩ
Oscillator voltage	$V_{osc.}$	1.8	2.8	2.8	V_{RMS}
Anode current	I_a	2.7	5.5	6	mA
Conversion conductance	S_c	2.2	2.8	2.9	mA/V
Internal resistance	R_i	19	15	14	kΩ
Grid input resistance (f = 100 MHz)	r_g		15		kΩ

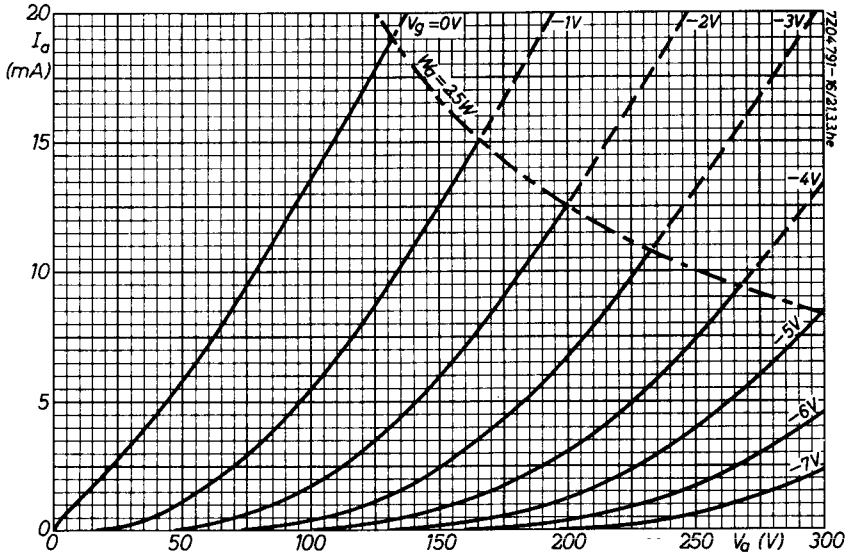
As oscillator in television receivers

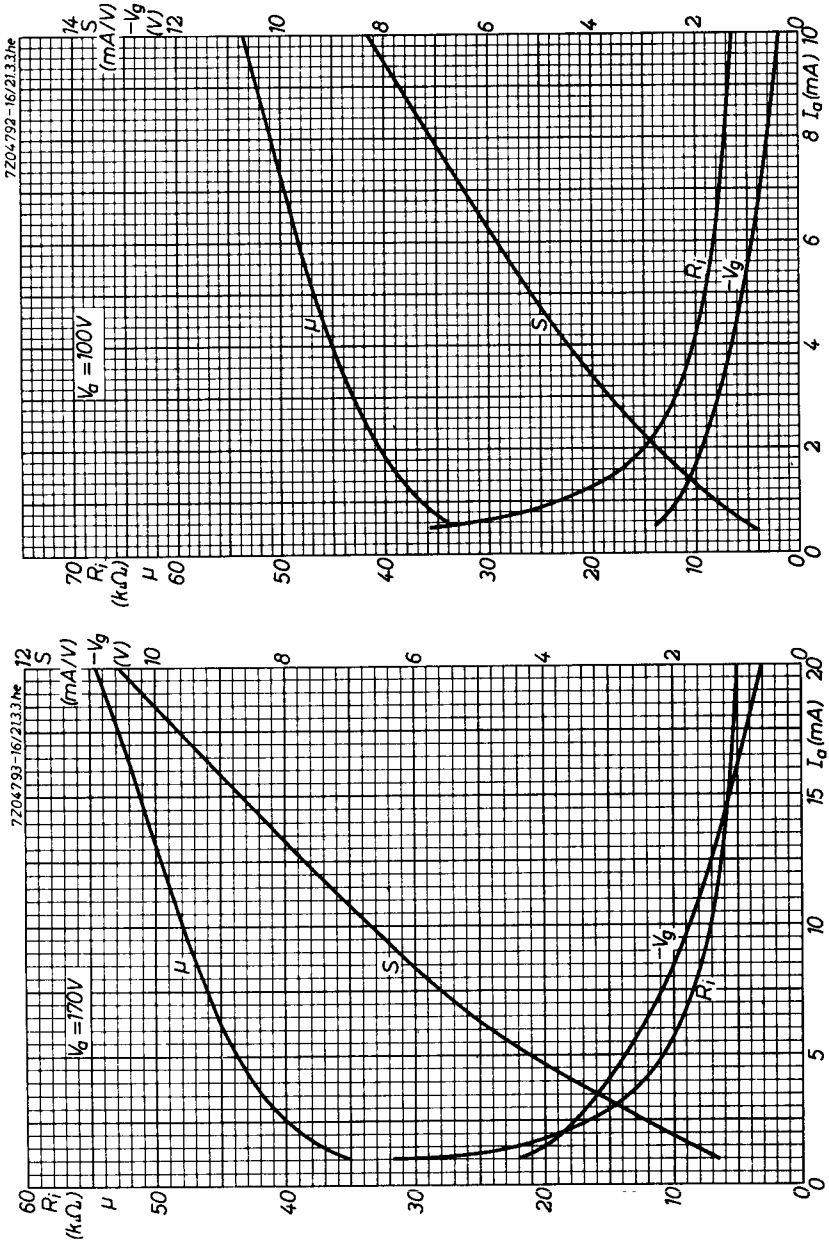
Anode supply voltage	V_b			180	V
Anode resistor	R_a			4.4	kΩ
Grid resistor	R_g			22	kΩ
Oscillator voltage	$V_{osc.}$			9	V_{RMS}
Anode current	I_a			7.4	mA
Anode dissipation	W_a			1.2	W

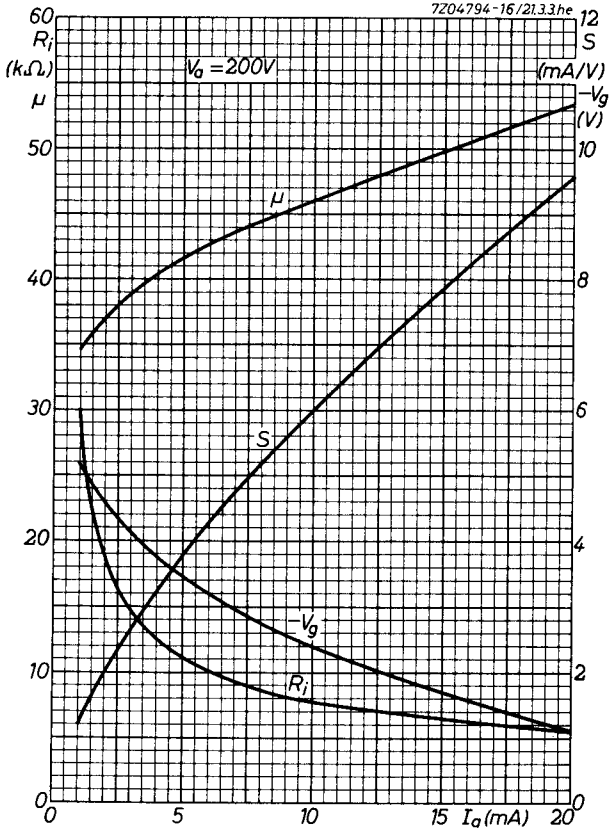
LIMITING VALUES (each unit) (Design centre rating system)

Anode voltage	V_{a_o}	max.	550	V
	V_a	max.	250	V
Anode dissipation	W_a	max.	2.5	W
Anode dissipation, total	$W_a+W_{a'}$	max.	4.5	W
Cathode current	I_k	max.	15	mA
Cathode to heater voltage	V_{kf}	max.	90	V
Grid voltage, negative	$-V_g$	max.	100	V
Grid resistor	R_g	max.	1	MΩ


30
I_a (mA)
25
20
15
10
5
0
100V
170V
V_a =300V
-2
-4
-6
-8 V_g (V)
7204790-16/213.3he


20
I_a
(mA)
15
10
5
0
V_g =0V
-1V
-2V
-3V
V_a =25W
-4V
-5V
-6V
-7V
0
50
100
150
200
250 V_a (V) 300
7204791-16/213.3he


7204792-16/21.33he
V_g = 100V
S (mA/V)
$-V_g$ (V)
R_i (kΩ)
μ
I_a (mA)
7204793-16/21.33he
V_g = 170V
S (mA/V)
$-V_g$ (V)
R_i (kΩ)
μ
I_a (mA)


7Z04794-16/21.3.3he
60
R_i
(kΩ)
μ
50
40
30
20
10
0
V_a = 200V
μ
S
$-V_g$
R_i
0
5
10
15
I_a(mA)
20
12
S
(mA/V)
$-V_g$
(V)
10
8
6
4
2
0

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