SUBMINIATURE U.H.F. TRIODE

DC70

Triode primarily intended for use as an oscillator in battery-operated equipment at frequencies of the order of 500Mc/s.

This valve is primarily intended for use in communications equipment of the 'push to talk' type and its continuous life rating under typical supply voltage conditions is relatively short and is chiefly a function of hours of filament operation and filament temperature.

Under 'push to talk' conditions an operating life of about 200 hours may be expected.

FILAMENT

Suitable for d.c. operation only.

V_f	1.25	V
I_f	200	mA

MOUNTING POSITION

Any

Note – Direct soldered connections to the leads of this valve must be at least 5mm from the seal and any bending of the valve leads must be at least 1.5mm from the seal.

If the valve is used with an earthed metal clip a decrease in output power of approximately 10% can be expected up to 200Mc/s.

CAPACITANCES

	Shielded	Unshielded	
C_{a-g}	1.5	1.5	pF
C_{g-f}	1.3	1.25	pF
C_{a-f}	1.9	1.0	pF

CHARACTERISTICS

V_a	150	V
I_a	14.5	mA
V_{g1}	−4.5	V
g_m	3.75	mA/V
r_a	4.0	kΩ
μ	15	

OPERATING CONDITIONS AS CLASS 'C' TELEGRAPHY R.F. OSCILLATOR

f	10	50	200	400	500	Mc/s
V_a	150	150	150	150	150	V
I_a	17.1	17.1	17.3	18.5	18.7	mA
I_g	2.9	2.9	2.7	1.5	1.3	mA
R_g	5.6	4.7	3.9	6.8	6.8	kΩ
P_{load}	1.4	1.4	1.0	0.8	0.55	W
η_{load}	55	55	39	29	20	%
$V_{a(pk)}$	120					V
$V_{g(pk)}$	32					V

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OPERATING CONDITIONS AS CLASS 'C' TELEGRAPHY R.F. AMPLIFIER

f	50	200	Mc/s
V_a	150	150	V
V_g	−18	−18	V
I_a	16.4	16.8	mA
I_g	3.6	3.2	mA
P_{load}	1.5	1.2	W
η_{load}	61	48	%

P_{drive} measured at the grid is approximately 200mW at f=200Mc/s and does not include the power lost in the grid tuned circuit.

OPERATING CONDITIONS AS FREQUENCY MULTIPLIER

Single valve doubler

f_{out}	50	Mc/s
V_a	150	V
V_g	−45	V
I_a	17.3	mA
I_g	2.7	mA
P_{load}	1.0	W
η_{load}	39	%

Two valve push-push doubler

f_{out}	200	470	500	Mc/s
V_a	150	150	150	V
V_g	−45	−40	−40	V
I_a	2×18	2×11.8	2×11.9	mA
I_g	2×2.0	2×0.7	2×0.6	mA
P_{load}	1.6	0.38	0.34	W
η_{load}	30	11	10	%

Single valve trebler

f_{out}	50	470	500	Mc/s
V_a	150	150	150	V
V_g	−80	−80	−80	V
I_a	18.1	14.3	14.4	mA
I_g	1.9	0.7	0.6	mA
P_{load}	650	220	190	mW
η_{load}	24	10	9.0	%

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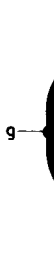
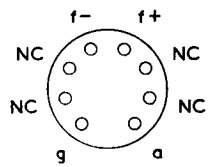
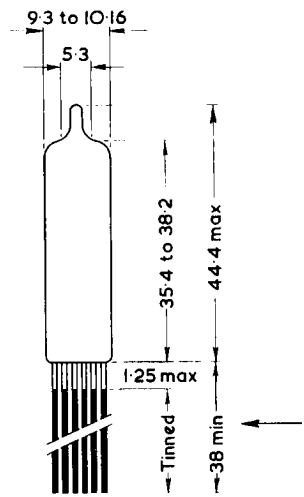
LIMITING VALUES

V_a max.	150	V
p_a max.	2.4	W
I_g max.	5.0	mA
R_{g-f} max.	500	kΩ
V_f max. (absolute)	1.35	V
V_g max.:—r.f. amplifier	−30	V
frequency doubler	−45	V
push-push doubler (f<400Mc/s)	−45	V
push-push doubler (f>400Mc/s)	−40	V
frequency trebler	−80	V
I_k max.:—	20	mA
push-push doubler (f<400Mc/s)	2×20	mA
push-push doubler (f>400Mc/s)	2×12.5	mA
frequency trebler (f>400Mc/s)	15	mA





B8D/F Base



3228

All dimensions in mm

DC70

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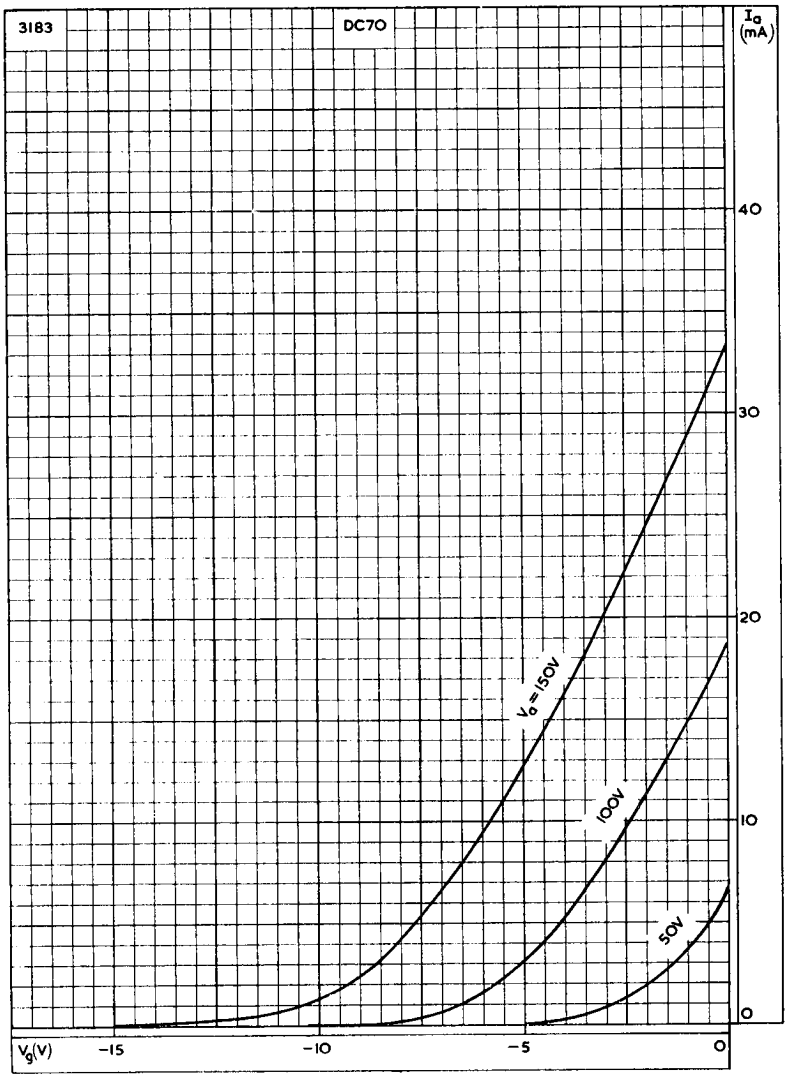

ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE

SUBMINIATURE U.H.F. TRIODE

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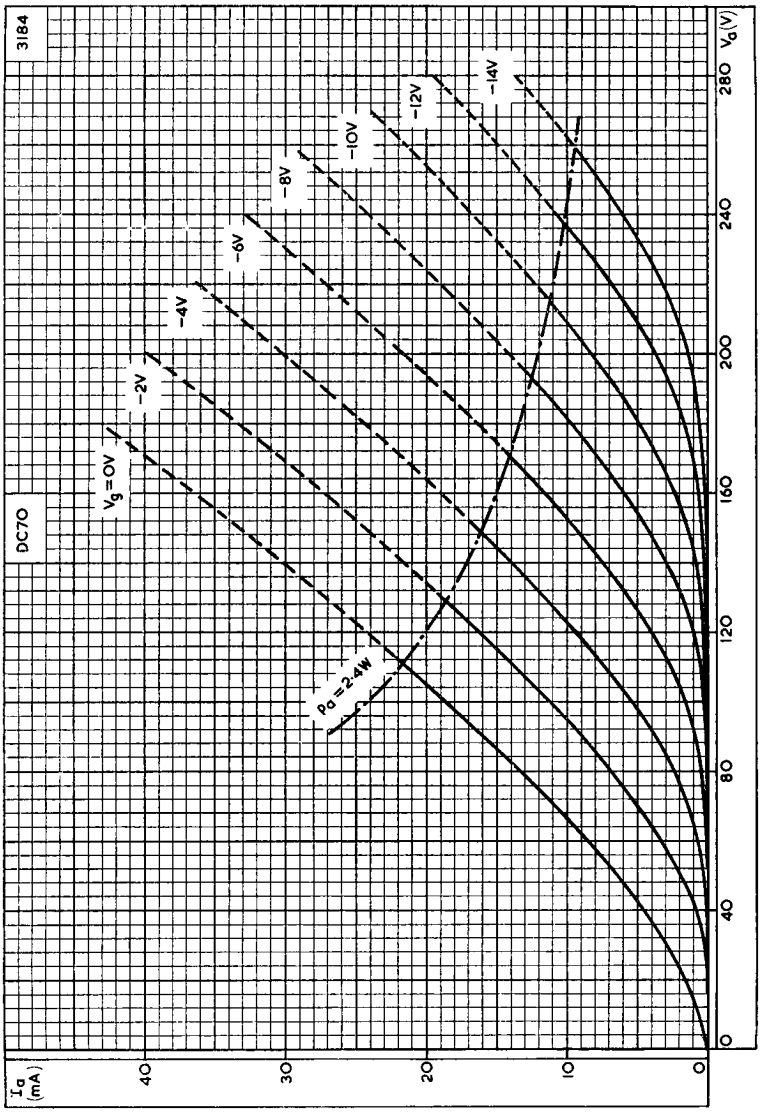

ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE

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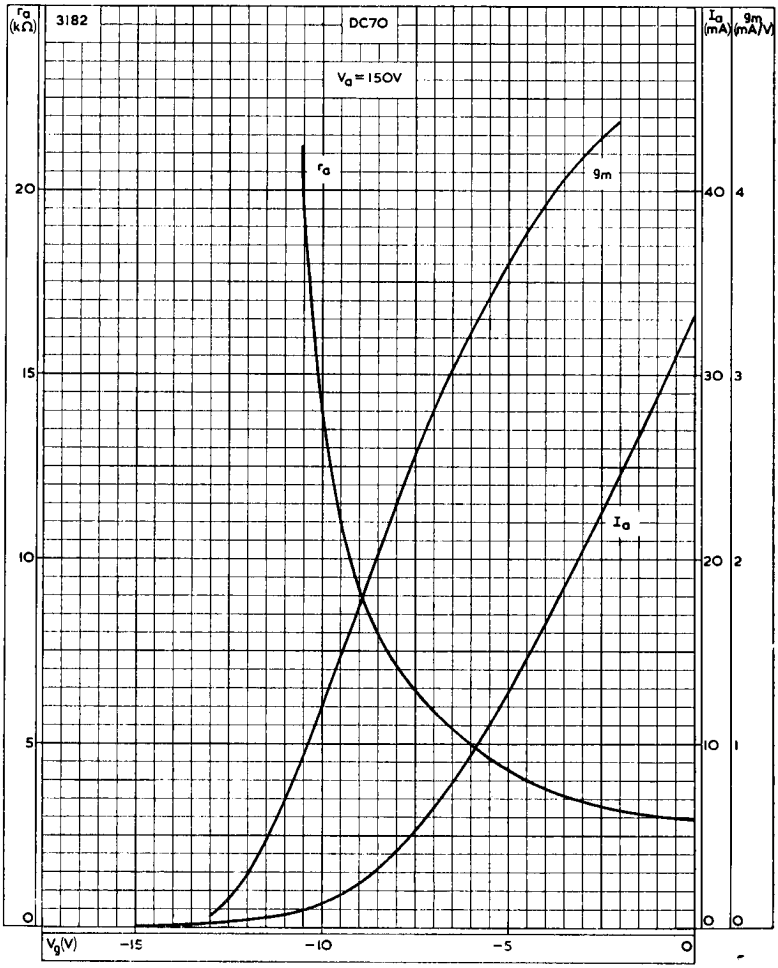

ANODE CURRENT, ANODE IMPEDANCE AND MUTUAL CONDUCTANCE PLOTTED AGAINST GRID VOLTAGE