

MINIATURE HEPTODE FREQUENCY CHANGER

DK96

Miniature heptode, primarily intended for use as a frequency changer in battery operated receivers and suitable for a.g.c.

FILAMENT

Suitable for d.c. operation from a series or parallel supply.

	Series	Parallel	V
V_f	1.3	1.4	
I_f	24	25	mA

CAPACITANCES

C_{a-all}	8.1	pF ←
C_{g1-all}	3.9	pF
C_{g2-all}	4.8	pF
C_{g3-all}	7.4	pF ←
C_{a-g1}	<0.11	pF
C_{a-g2}	<0.3	pF
C_{a-g3}	<0.36	pF
C_{g1-g2}	3.0	pF
C_{g1-g3}	<0.2	pF
C_{g2-g3}	1.6	pF

TYPICAL OPERATING CONDITIONS

$*V_a = V_b$	64	85	V
V_{g3}	0	0	V
R_{g4}	0	120	kΩ
R_{g2}	18	33	kΩ
R_{g1-f+}	27	27	kΩ
$V_{g4}(\text{approx.})$	64	68	V
$V_{g2}(\text{approx.})$	35	35	V
$V_{g1(r.m.s.)}$	4.0	4.0	V
I_k	2.45	2.4	mA
I_a	550	600	μA
I_{g4}	120	140	μA
I_{g2}	1.6	1.5	mA
I_{g1}	85	85	μA
g_c	275	300	μA/V
r_a	750	800	kΩ ←
V_{g3} (for 100 : 1 reduction in g_c)	-4.5	-6.5	V

OSCILLATOR SECTION (With g_1 connected to f+)

$V_a = V_b$	64	85	V
V_{g4}	64	64	V
V_{g3}	0	0	V
V_{g2}	35	35	V
V_{g1}	+1.4	+1.4	V
I_{g2}	1.7	1.7	mA
$g_m(g_1-g_2)$	600	600	μA/V ←
μ_{g1-g2}	7.5	7.5	

*Based on line voltages of 67.5 and 90V decreased by the negative bias for the output valve.

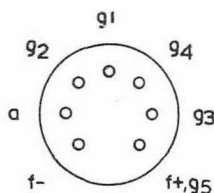
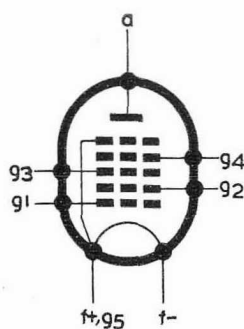
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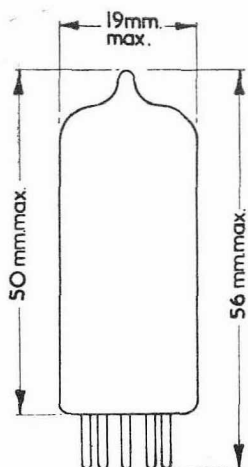
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LIMITING VALUES

V_b max. (absolute)	110	V
V_b max.	90	V
V_a max.	90	V
p_a max.	150	mW
V_{g2} max.	60	V
p_{g2} max.	100	mW
V_{g4} max.	90	V
p_{g4}	30	mW
I_k max.	2.6	mA
R_{g2-f} max.	3.0	M Ω
R_{g1-f} max.	100	k Ω
V_{g3} max. ($I_{g3} = +0.3\mu A$)	+1.0	V
V_{g1} max. ($I_{g1} = +0.3\mu A$)	0	V



B7G Base

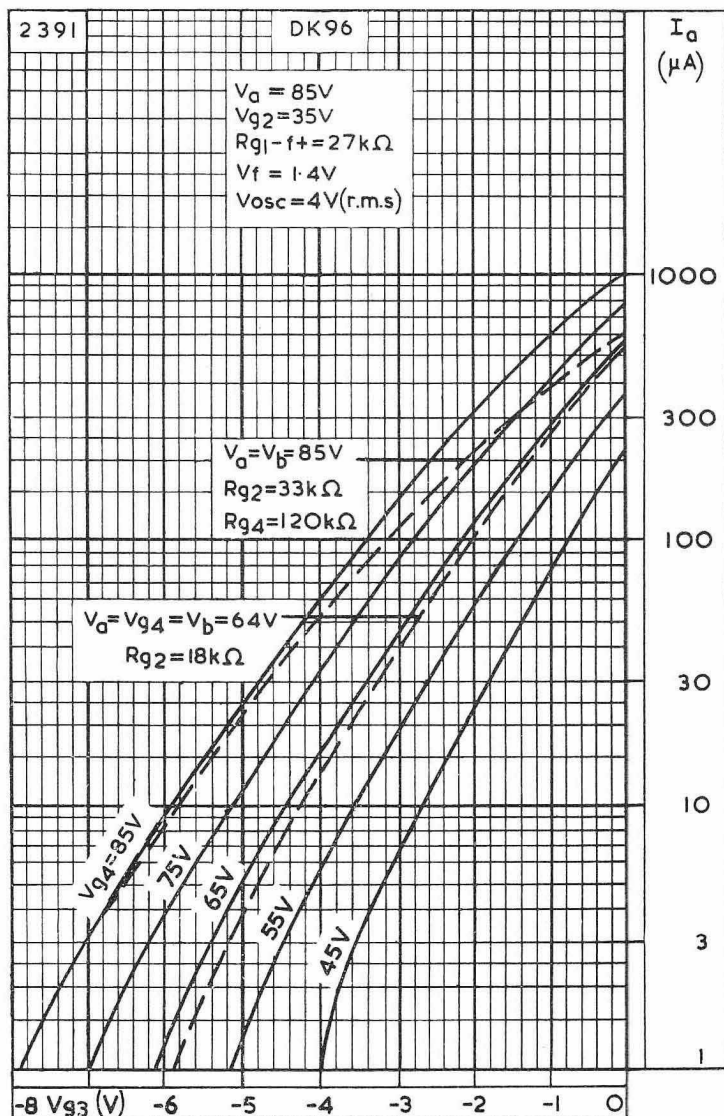


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MINIATURE HEPTODE FREQUENCY CHANGER

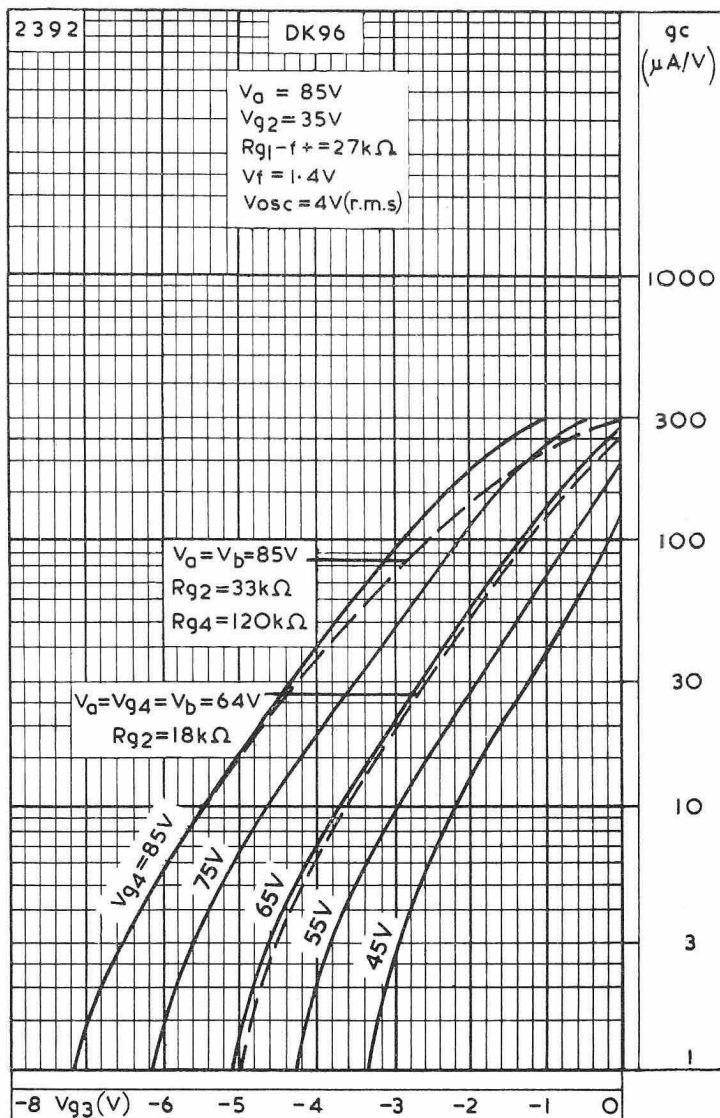
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ANODE CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE WITH
SCREEN-GRID VOLTAGE AS PARAMETER

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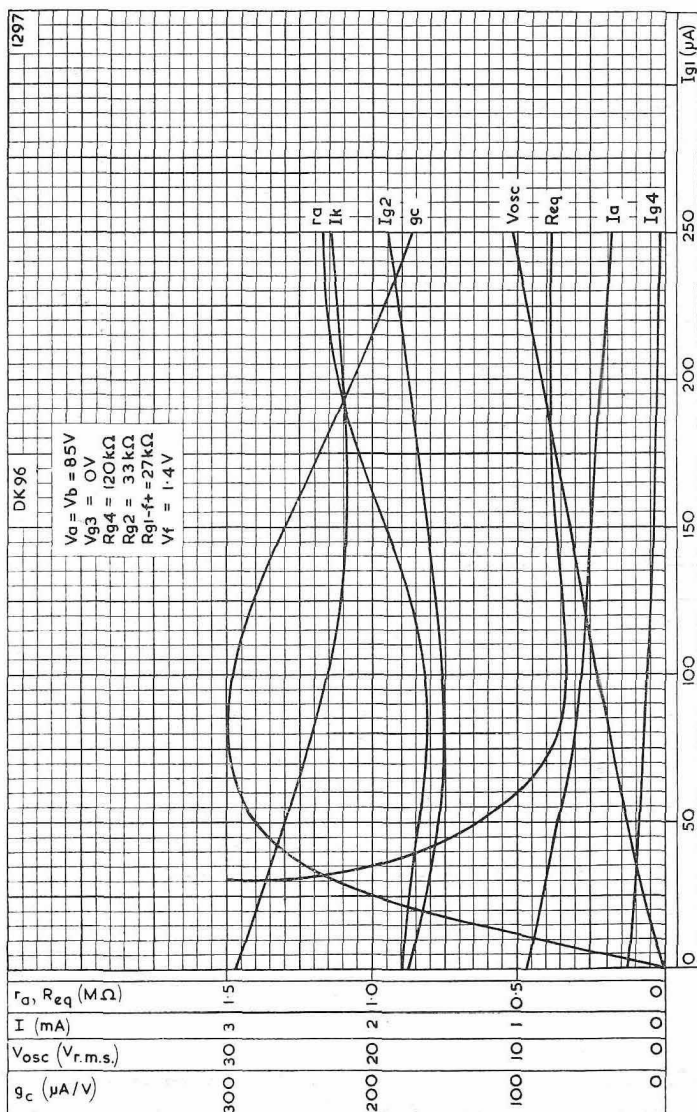


CONVERSION CONDUCTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE WITH SCREEN-GRID VOLTAGE AS PARAMETER

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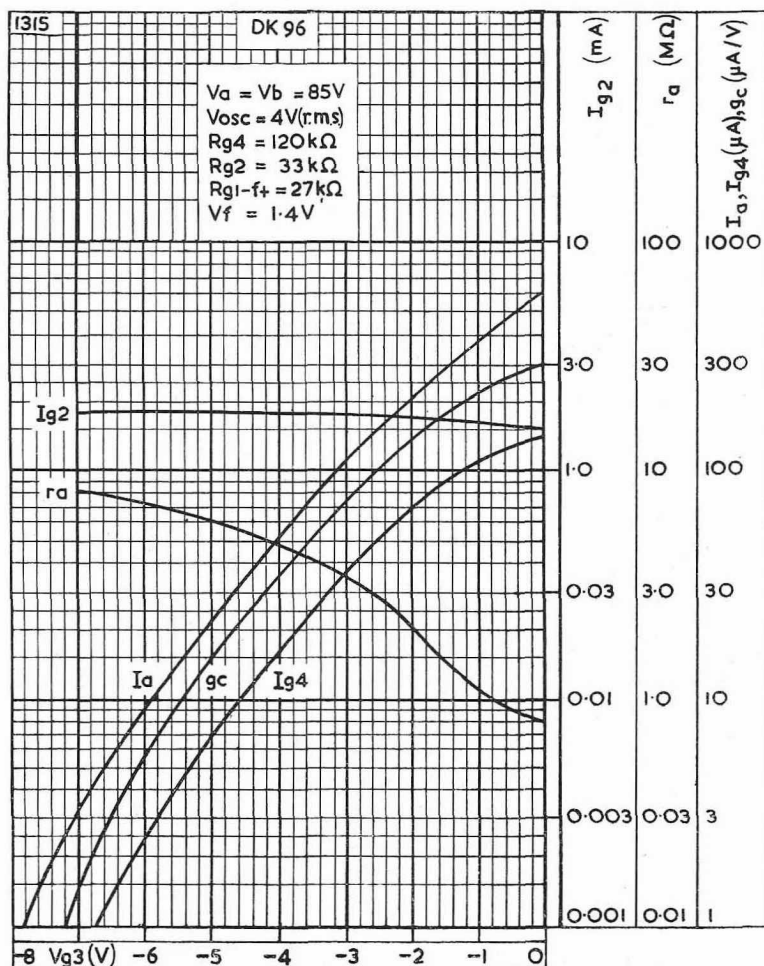


ELECTRODE CURRENTS, CONVERSION CONDUCTANCE, ANODE IMPEDANCE, EQUIVALENT NOISE RESISTANCE AND OSCILLATOR VOLTAGE PLOTTED AGAINST OSCILLATOR GRID CURRENT

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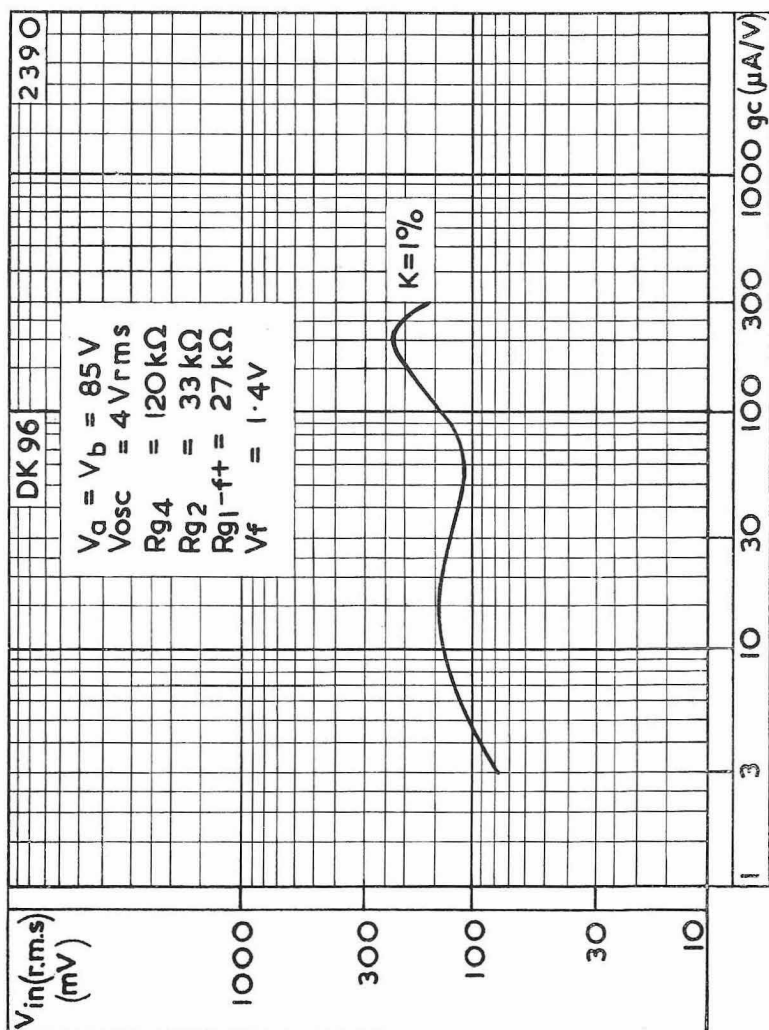


ELECTRODE CURRENTS, CONVERSION CONDUCTANCE AND ANODE IMPEDANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE

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CROSS MODULATION CURVE

