

OUTPUT PENTODE

EL33

High-sensitivity output pentode for use
in A.C. mains-operated equipment.

HEATER

V_h	6.3	V
I_h	0.9	A

CAPACITANCE

C_{a-g1}	1.0	$\mu\mu\text{F}$
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OPERATING CONDITIONS AS CLASS "A" AMPLIFIER

V_a	250	V
V_{g2}	250	V
I_a	36	mA
V_{g1}	-6.0	V
I_{g2}	4.0	mA
g_m	9.0	mA/V
r_a	50	$k\Omega$
μ_{g1-g2}	23	
P_{out}	4.0	W
R_a	7.0	$k\Omega$
$V_{in(r.m.s.)}$	4.2	V
$V_{in(r.m.s.)} (P_{out}=50 \text{ mW})$	0.33	V
D_{tot}	10	%
R_k	150	Ω

OPERATING CONDITIONS FOR TWO VALVES IN PUSH-PULL

V_a	250	V
V_{g2}	250	V
$I_{a(0)}$	2×24	mA
$I_a \text{ max.}$	2×28.5	mA
$I_{g2(0)}$	2×2.8	mA
$I_{g2} \text{ max.}$	2×4.6	mA
R_k	140	Ω
R_{a-a}	10	$k\Omega$
P_{out}	8.2	W
$V_{in(r.m.s.)}$	6.7	V
D_{tot}	3.1	%

OPERATING CONDITIONS AS TRIODE (g_2 connected to a)

V_a	250	V
I_a	20	mA
V_g	-8.5	
g_m	6.5	mA/V
μ	20	
r_a	3.0	$k\Omega$
R_k	425	Ω
R_a	7.0	$k\Omega$
P_{out}	1.1	W
D_{tot}	5.0	%
$V_{in(r.m.s.)}$	5.9	V
$V_{in(r.m.s.)} (P_{out}=50 \text{ mW})$	1.1	V

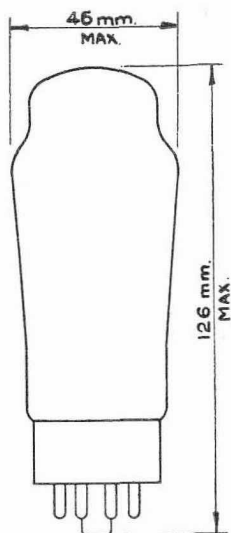
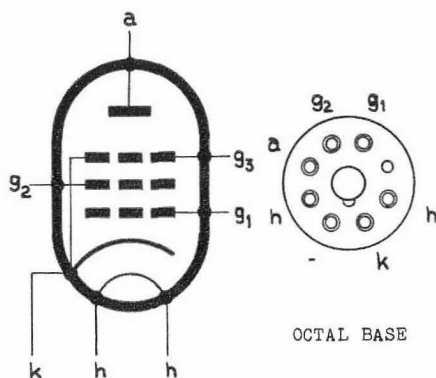
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LIMITING VALUES

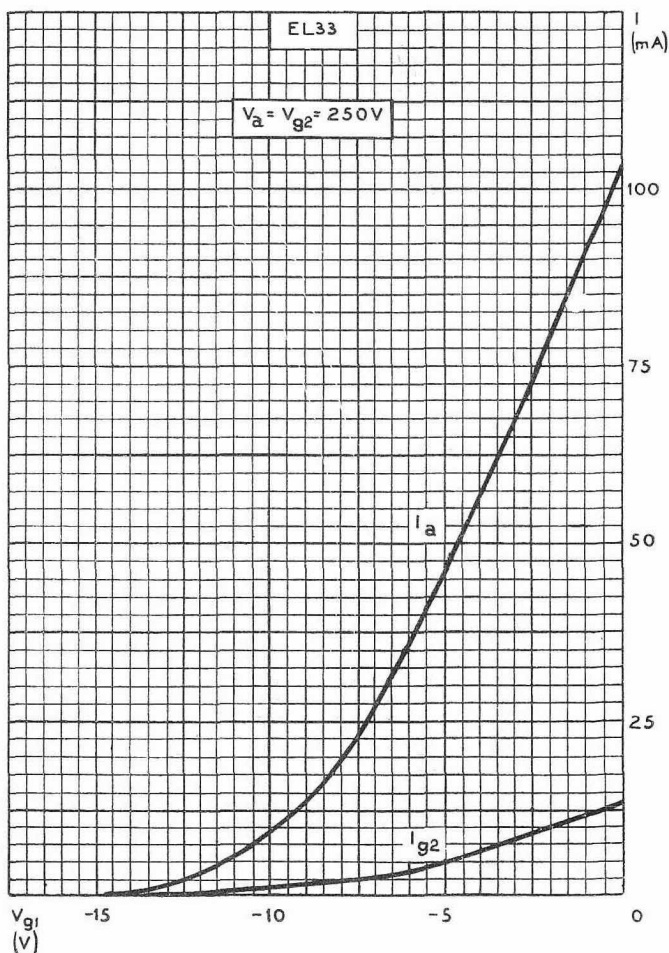
$V_{a(b)}$ max.	550	V
V_a max.	250	V
p_a max.	9.0	W
$V_{g2(b)}$ max.	550	V
V_{g2} max.	275	V
p_{g2} max. (zero sig.)	1.2	W
p_{g2} max. (max. sig.)	2.5	W
I_k max.	55	mA
V_{g1} max. ($I_{g1}=0.3\mu A$)	-1.3	V
R_{g1-k} max.	1.0	M Ω
V_{h-k} max.	50	V
R_{h-k} max.	5.0	k Ω



OUTPUT PENTODE

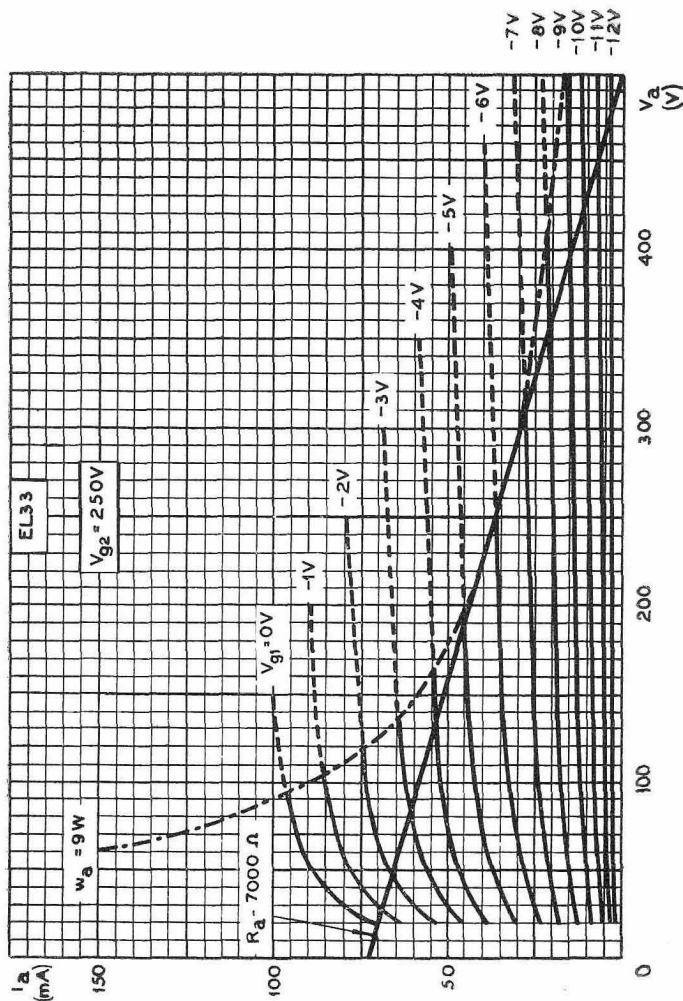
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ANODE CURRENT AND SCREEN-GRID CURRENT PLOTTED
AGAINST CONTROL-GRID VOLTAGE

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