E34LS
Power Pentode

TESLOVAK

The E34LS is a power pentode designed especially for high fidelity audio systems. It has a plate dissipation of 30 watts and delivers high power without drawing control-grid current.

The E34LS features high efficiency with extremely low distortion. Great care is taken in manufacturing so that there is very little spread in characteristics of individual tubes. Thus, the rated output power can be obtained with all tubes. The tube also features high sensitivity which results in low distortion introduced by driver stages.

The tube features a large plate dissipation reserve. The high allowable grid leak resistance improves the performance of preceeding stages.

ELECTRICAL

Cathode	coated unipotential	
Heater Voltage	6.3	Volts
Heater Current	1.5	Amps

DIRECT INTERLECTRODE CAPACITANCES

Grid No. 1 to all other elements except plate	15.2	μμf
Plate to all other elements except grid No. 1	8.4	μμf
Plate to grid No. 1	1.1	μμf max
Grid No. 1 to heater	1.0	μμf max
Heater to Cathode	1.0	μμf

MECHANICAL

Base	JEDEC #8ET, octal, 8 pin	
Bulb	Tubular, 1 5/16" max. dia.	
Max. overall length	4 7/16	inch
Max. seated height	3 7/8	inch
Max. diameter	1 1/2	inch
Mounting Position	any	

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P E N T A L A B O R A T O R I E S

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ELECTRON TUBES FOR INDUSTRY

E34LS Power Pentode

MAXIMUM RATINGS - Design Center Values

Plate Voltage	800	Volts
Plate Voltage without plate current	2000	Volts
Plate Dissipation	32.5	Watts
Plate Dissipation without input signal	30	Watts
Grid No. 2 voltage	425	Volts
Grid No. 2 voltage without plate current	800	Volts
Grid No. 2 dissipation	8	Watts
Cathode current	150	mA
Grid current starting point, Grid No. 1 voltage when grid No. 1 current is 0.3 μamp	1.3	Volts
Grid No. 1 circuit resistance (class A and AB)	0.7	megohm
Grid No. 1 circuit resistance (class B)	0.5	megohm
External resistance between heater and cathode	20,000	Ohms
Voltage between heater and cathode	100	Volts

OPERATING CHARACTERISTICS CLASS A, one tube

Supply voltage	265	265	Volts
Plate voltage	250	250	Volts
Grid No. 2 series resistor	2000	0	Ohms
Grid No. 3 voltage	0	0	Volts
Grid No. 1 bias	-14.5	-13.5	Volts
Plate current	70	100	mA
Grid No. 2 current	10	15	mA
Transconductance	9,000	11,000	micromhos
Amplification factor of grid No. 2 with respect to grid No. 1	11	11	
Plate resistance	18,000	15,000	Ohms
Plate load resistance	3,000	2,000	Ohms
Input voltage	9.3	8.7	Volts(rms)
Max. signal power output	8	11	Watts
Total harmonic distortion	10	10	%
Input voltage for power output of 50 m watts	0.65	0.5	Volts(rms)

OPERATING CHARACTERISTICS CLASS B, two tubes
Supply Voltage = 425 Volts

Common grid No. 2 resistor (without decoupling)		1000		Ohms
Grid No. 1 bias		-38		Volts
Grid No. 3 voltage		0		Volts
Input voltage	0	27	27	Volts(rms)
Load resistance, plate to plate	---	3400	4000	Ohms
Supply voltage	425	425	400	Volts
Plate voltage	420	400	375	Volts

Plate current	2x30	2x120	2x100	mA
Grid No. 2 current	2x4.4	2x25	2x25	mA
Max. signal, power output	0	55	45	Watts
Total harminic distortion	---	5	6	%

OPERATING CHARACTERISTICS CLASS B, two tubes
Supply Voltage = 375 Volts

Common grid No. 2 resistor (without decoupling)		470		Ohms
Grid No. 1 bias		-32		Volts
Grid No. 3 voltage		0		Volts
Input voltage	0	22.7	22.7	Volts(rms)
Load resistance, plate to plate	---	2800	3800	Ohms
Supply voltage	375	375	350	Volts
Plate voltage	370	350	325	Volts
Plate current	2x35	2x120	2x93	mA
Grid No. 2 current	2x4.7	2x25	2x25	mA
Max. signal, power output	0	44	36	Watts
Total harminic distortion	---	5	6	%

OPERATING CHARACTERISTICS CLASS B, two tubes
Supply Voltage = 500/400 Volts

Common grid No. 2 resistor (without decoupling)		750		Ohms
Grid No. 1 bias		-36		Volts
Grid No. 3 voltage		0		Volts
Input voltage	0	25.8	25.8	Volts(rms)
Load resistance, plate to plate	---	4000	5000	Ohms
Plate supply voltage	500	500	475	Volts
Plate voltage	495	475	450	Volts
Grid No. 2 supply voltage	400	400	375	Volts
Plate current	2x30	2x125	2x102	mA
Grid No. 2 current	2x4	2x25	2x25	mA
Max. signal, power output	0	70	58	Watts
Total harminic distortion	---	5	6	%

OPERATING CHARACTERISTICS CLASS B, two tubes
Supply Voltage = 800/400 Volts

Common grid No. 2 resistor (without decoupling)		750		Ohms
Grid No. 1 bias		-39		Volts
Grid No. 3 voltage		0		Volts
Input voltage	0	23.4	23.4	Volts(rms)
Load resistance, plate to plate	---	11,000	11,000	Ohms
Plate supply voltage	800	800	750	Volts
Plate voltage	795	775	725	Volts

Grid No. 2 supply voltage	400	400	375	Volts
Plate current	2x25	2x91	2x84	mA
Grid No. 2 current	2x3	2x19	2x19	mA
Max. signal, power output	0	100	90	Watts
Total harminic distortion	---	5	6	%

OPERATING CHARACTERISTICS CLASS AB, two tubes
Supply Voltage = 375 Volts

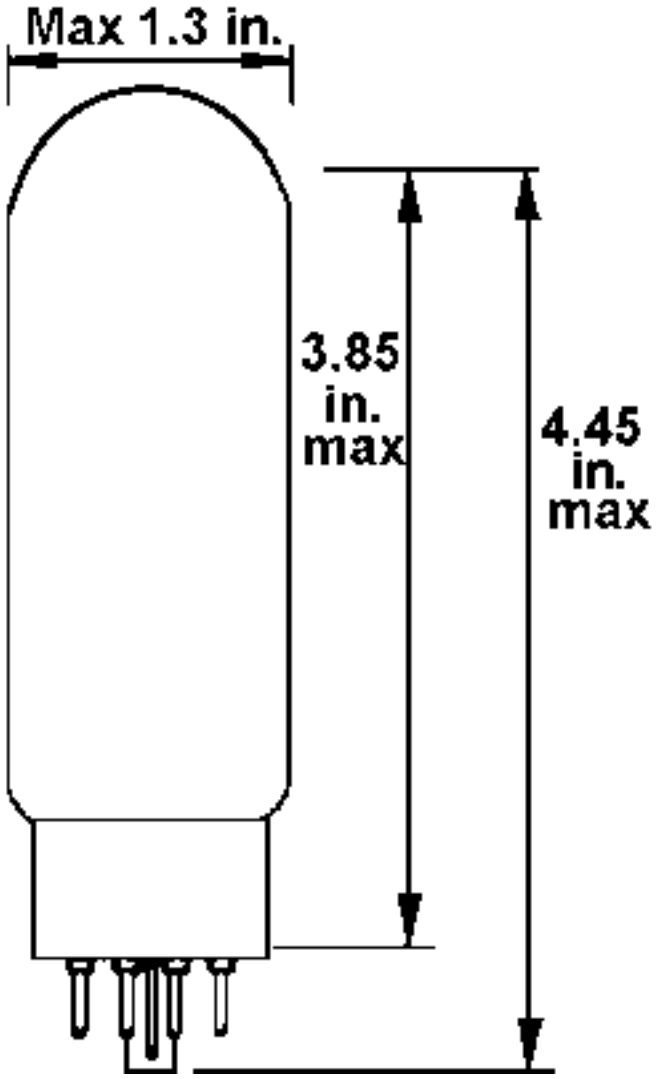
Load resistance, plate to plate		3400		Ohms
Common Grid No. 2 resistor		470		Ohms
Cathode resistor		130		Ohms
Grid No. 3 voltage		0		Volts
Input voltage	0		21	Volts(rms)
Supply voltage	375		375	Volts
Plate voltage + voltage across cathode resistor	355		350	Volts
Plate current	2x75		2x95	mA
Grid No. 2 current	2x11.5		2x22.5	mA
Max. signal, power output	0		35	Watts
Total harminic distortion	---		5	%

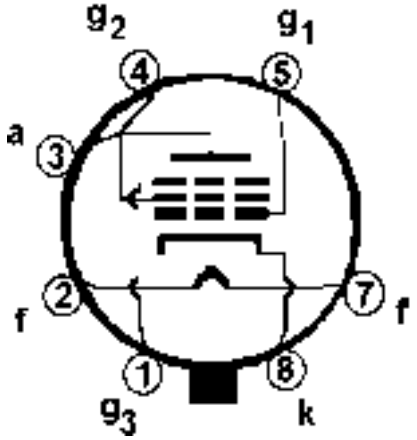
OPERATING CHARACTERISTICS IN TRIODE CONNECTION - Grid No. 2 connected to plate
Class A, one tube, supply voltage 375 volts

Supply voltage	375	Volts
Grid No. 3 voltage	0	Volts
Cathode resistor	370	Ohms
Load resistance	3000	Ohms
Input voltage	18.9	Volts(rms)
Plate current	70	mA
Max. signal power output	6	Watts
Total harmonic distortion	8	%
Input voltage for power output of 50 milliwatts	1.7	Volts(rms)

OPERATING CHARACTERISTICS IN TRIODE CONNECTION - Grid No. 2 connected to plate
Class A, two tube, supply voltage 400 volts

Supply voltage		400		Volts
Grid No. 3 voltage		0		Volts
Cathode resistor		220		Ohms
Load resistance, plate to plate		5000		Ohms
Input voltage	0		22	Volts(rms)
Plate current	2x65		2x71	mA
Max. signal power output	0		16.5	Watts
Total harmonic distortion	---		3	%


Max 1.3 in.
3.85
in.
max
4.45
in.
max


g2
g1
4
5
a
3
2
7
f
f
1
8
g3
k

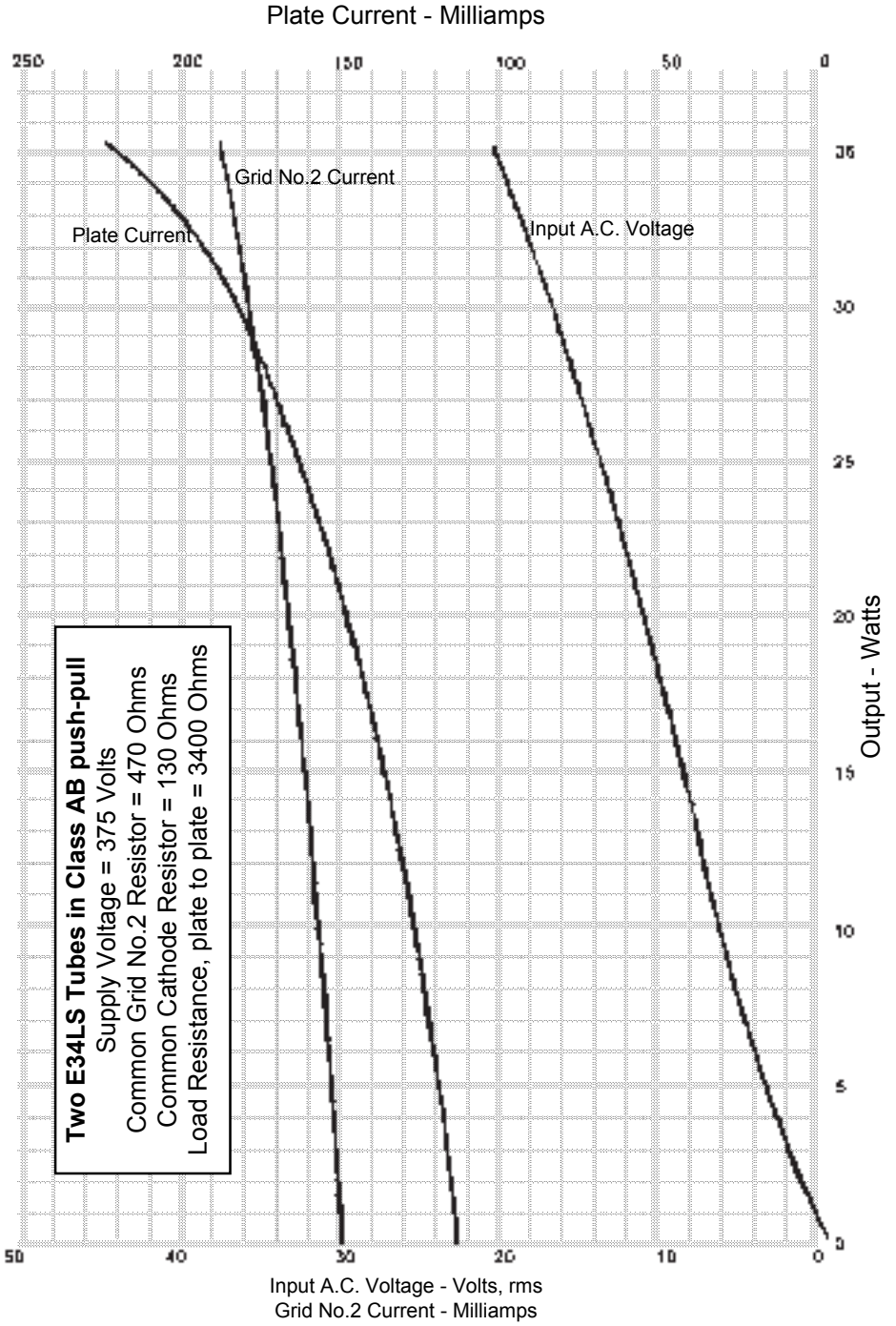


Plate Current - Milliamps
250
200
150
100
50
0
Grid No.2 Current
Plate Current
Input A.C. Voltage
35
30
25
20
15
10
5
0
Output - Watts
Two E34LS Tubes in Class AB push-pull
Supply Voltage = 375 Volts
Common Grid No.2 Resistor = 470 Ohms
Common Cathode Resistor = 130 Ohms
Load Resistance, plate to plate = 3400 Ohms
50
40
30
20
10
0
Input A.C. Voltage - Volts, rms
Grid No.2 Current - Milliamps

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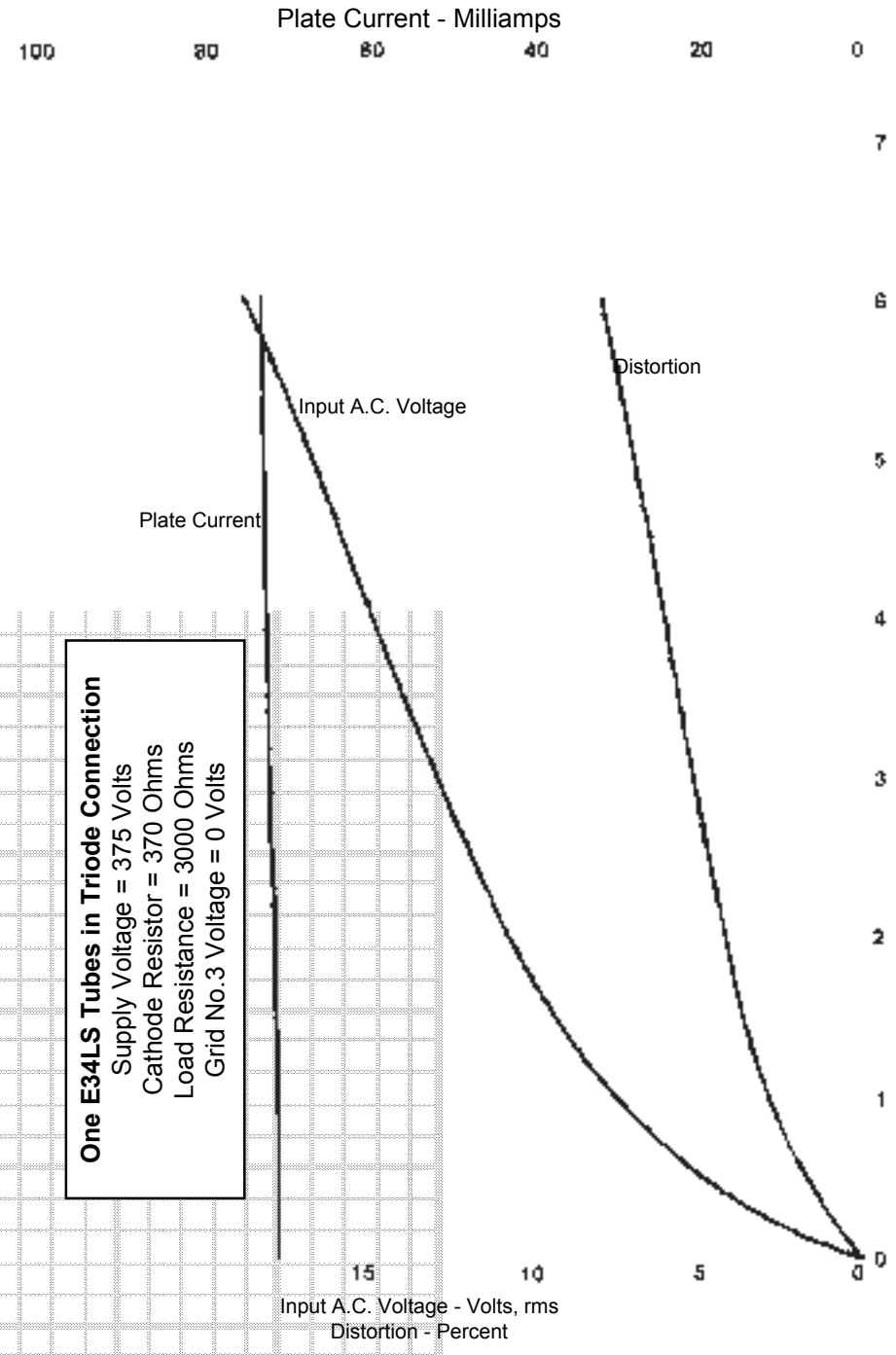

One E34LS Tubes in Triode Connection
Supply Voltage = 375 Volts
Cathode Resistor = 370 Ohms
Load Resistance = 3000 Ohms
Grid No.3 Voltage = 0 Volts

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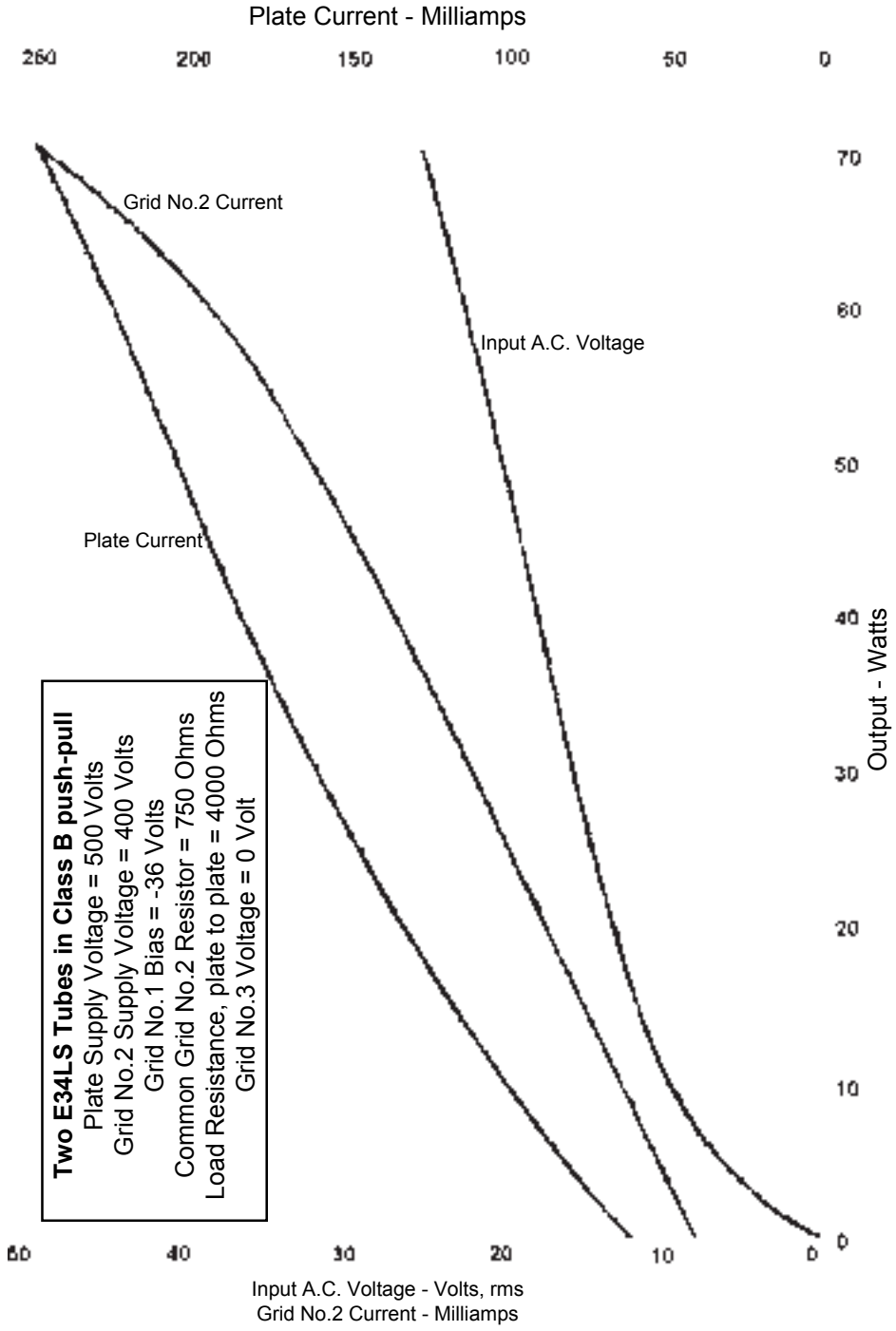

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