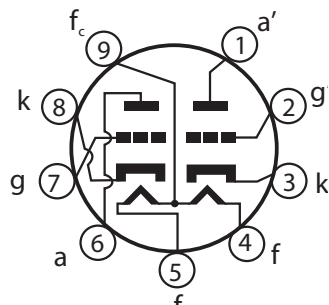


12AY7/6072

R. F. DOUBLE TRIODE

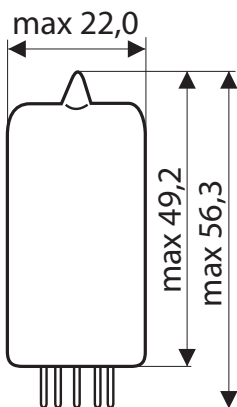


Base: NOVAL

$U_f = 6,3 \text{ or } 12,6 \text{ V}$
 $I_f = 300 \text{ or } 150 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $U_g = -4 \text{ V}$
 $I_a = 3,0 \text{ mA}$
 $S = 1,75 \text{ mA/V}$
 $R_i = 22,8 \text{ k}\Omega$
 $\mu = 40$



Limiting Values:

$U_a = 300 \text{ V}$
 $U_g = -50 \text{ V}$
 $W_a = 1,5 \text{ W}$
 $U_{k/f} = \pm 90 \text{ V}$
 $I_k = 10 \text{ mA}$

Capacitances:

	system I.	system II.	
$C_{g/k} = 1,6$	1,6	1,6	pF
$C_a = 0,33$	0,33	0,33	pF
$C_{g/a} = 1,7$	1,7	1,7	pF



TRANSFER CHARACTERISTICS

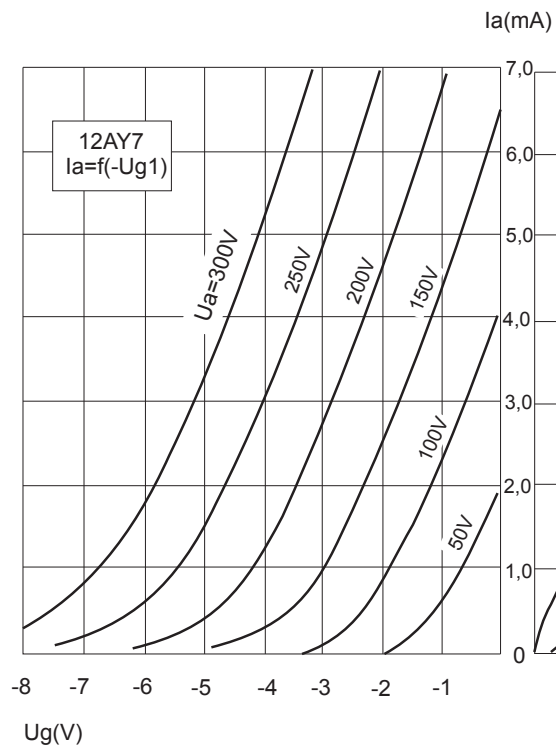
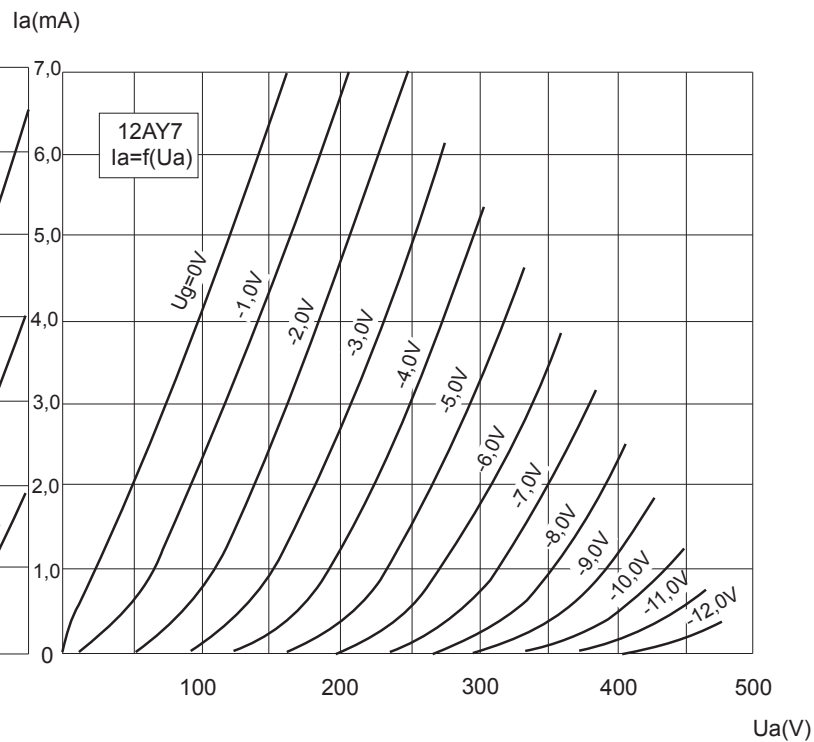
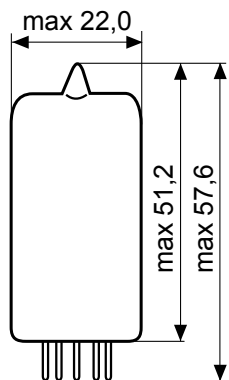
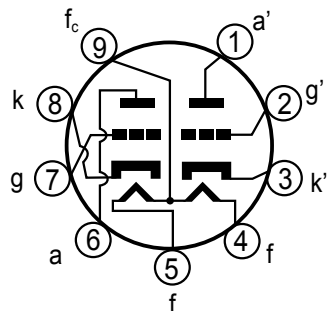


PLATE CHARACTERISTICS



12BH7-A

R. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3 \text{ or } 12,6 \text{ V}$
 $I_f = 600 \text{ or } 300 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $U_g = -10,5 \text{ V}$
 $I_a = 11,5 \text{ mA}$
 $S = 3,1 \text{ mA/V}$
 $R_i = 5,3 \text{ k}\Omega$
 $\mu = 16,5$

Limiting Values:

$U_a = 300 \text{ V}$
 $U_g = -50 \text{ V}$
 $W_a = 3,5 \text{ W}$
 $U_{+k/f-} = 200 \text{ V}$
 $U_{-k/f+} = 100 \text{ V}$
 $I_k = 20 \text{ mA}$
 $R_g = 0,25 \text{ M}\Omega \text{ (fixed bias)}$
 $= 1,0 \text{ M}\Omega \text{ (cathode bias)}$



TRANSFER CHARACTERISTICS

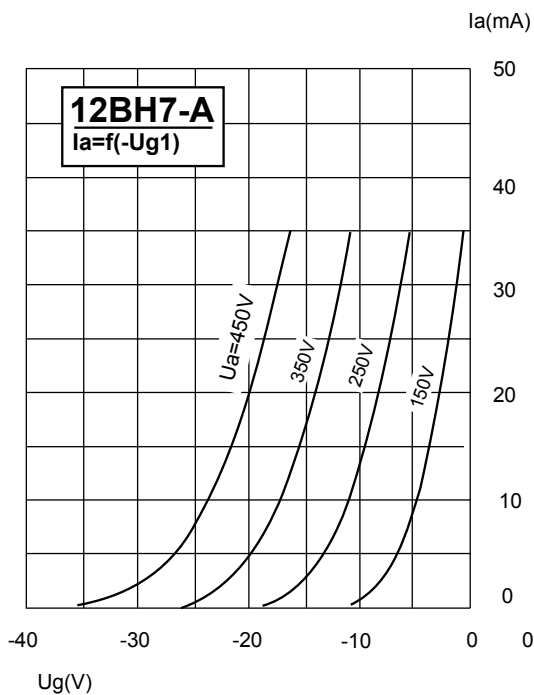
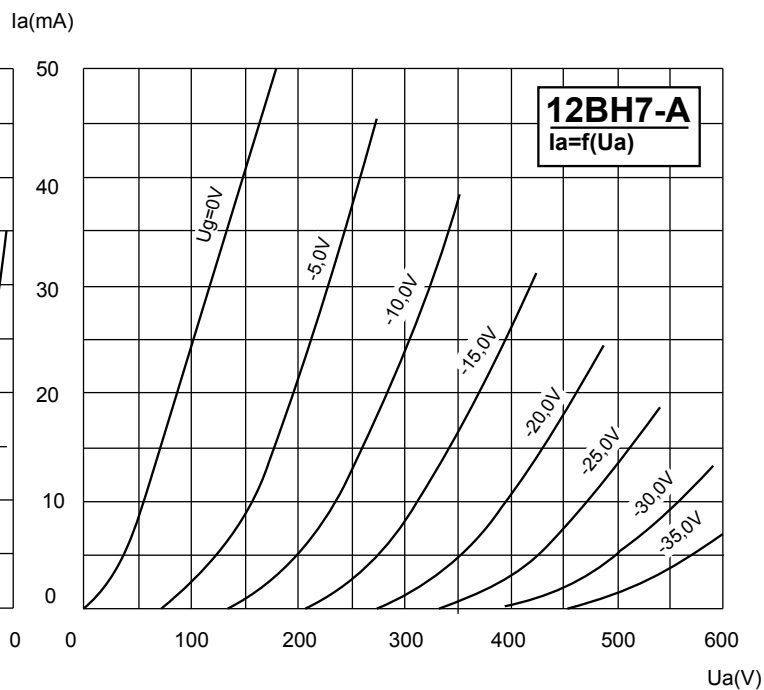
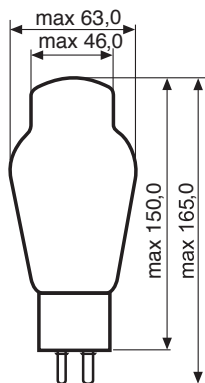
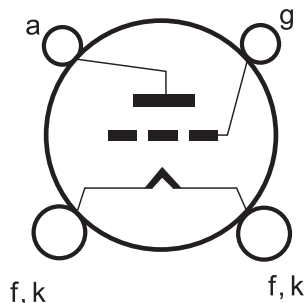


PLATE CHARACTERISTICS



2A3-40

A. F. TRIODE



Base: 4-PIN CERAMIC BASE

$$U_f = 2,5 \text{ V}$$

$$I_f = 2,5 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_g = -45 \text{ V}$$

$$I_a = 60 \text{ mA}$$

$$S = 5,25 \text{ mA/V}$$

$$\mu = 4,2$$

$$R_i = 800 \text{ } \Omega$$

Capacitances:

$$C_{g1} = 17 \text{ pF}$$

$$C_a = 11 \text{ pF}$$

$$C_{g1-a} = 7,5 \text{ pF}$$

Limiting Values:

$$U_a = 450 \text{ V}$$

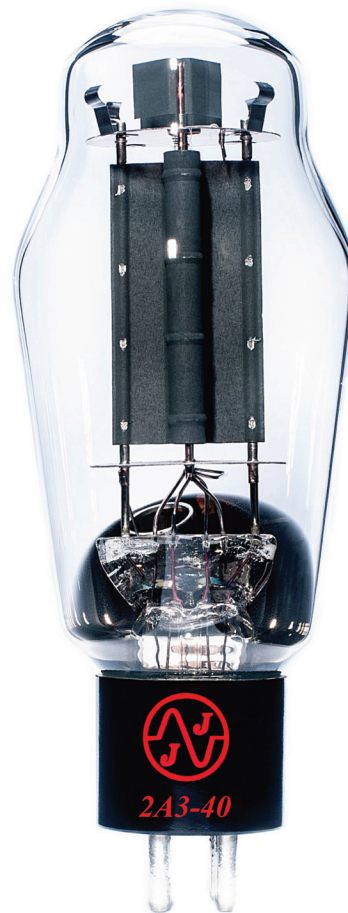
$$W_a = 40 \text{ W}$$

Maximum plate current of average tube
for fixed bias

$$I_a = 70 \text{ mA}$$

Maximum plate current for manually
adjusted grid bias or self-biasing

$$I_a = 100 \text{ mA}$$



TRANSFER CHARACTERISTICS

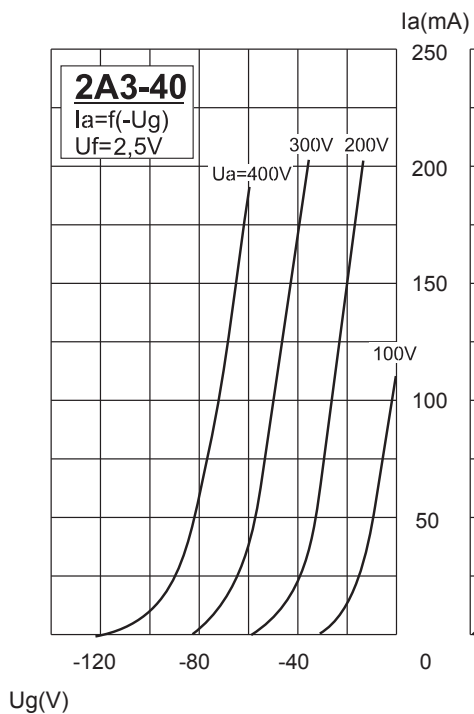
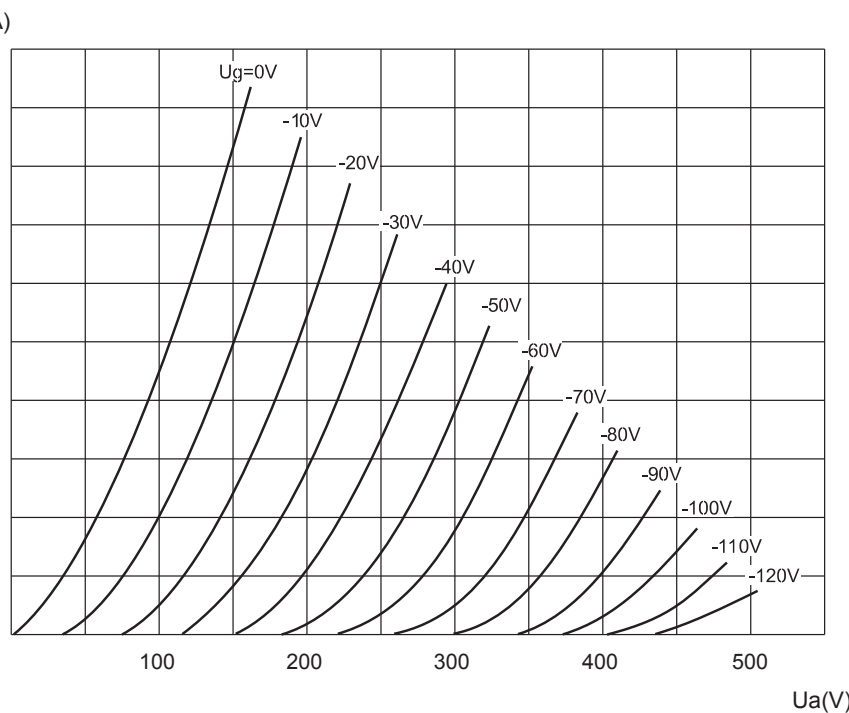
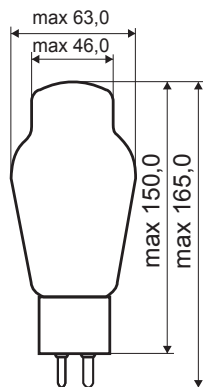
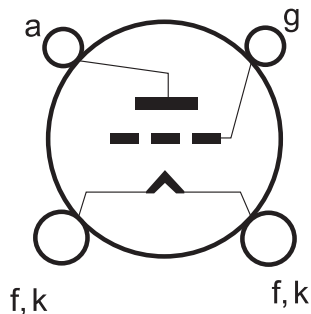


PLATE CHARACTERISTICS



300B

A. F. TRIODE



Base: 4-PIN CERAMIC BASE

$$U_f = 5 \text{ V}$$

$$I_f = 1,3 \text{ A}$$

Typical Characteristics:

$$U_a = 300 \text{ V}$$

$$U_{g1} = -61 \text{ V}$$

$$I_a = 60 \text{ mA}$$

$$S = 5,5 \text{ mA/V}$$

$$R_i = 700 \text{ } \Omega$$

$$\mu = 3,85$$

Capacitances:

$$C_{g1} = 17 \text{ pF}$$

$$C_a = 11 \text{ pF}$$

$$C_{g1-a} = 7,5 \text{ pF}$$

Limiting Values:

$$U_a = 450 \text{ V}$$

$$W_a = 40 \text{ W}$$

Maximum plate current of average tube for fixed bias

$$I_a = 70 \text{ mA}$$

Maximum plate current for manually adjusted grid bias or self-biasing

$$I_a = 100 \text{ mA}$$

*Moderate power, filamentary triodes
for Class A service.*



TRANSFER CHARACTERISTICS

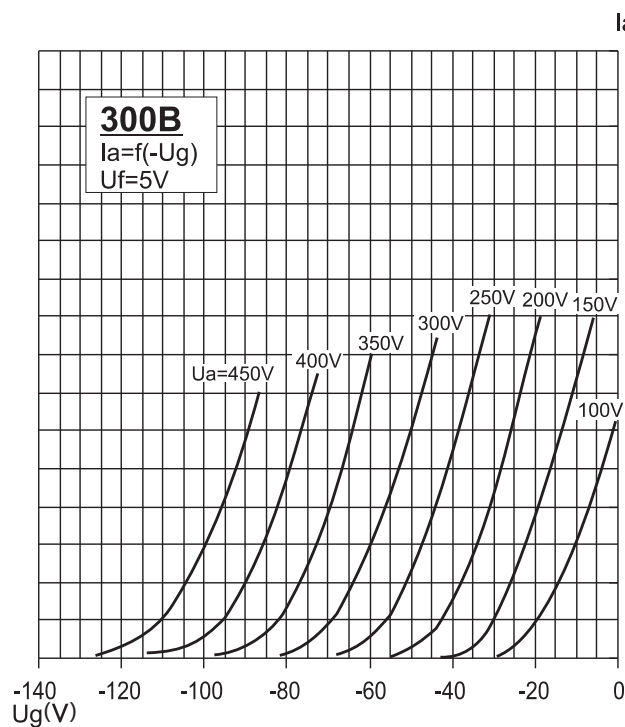
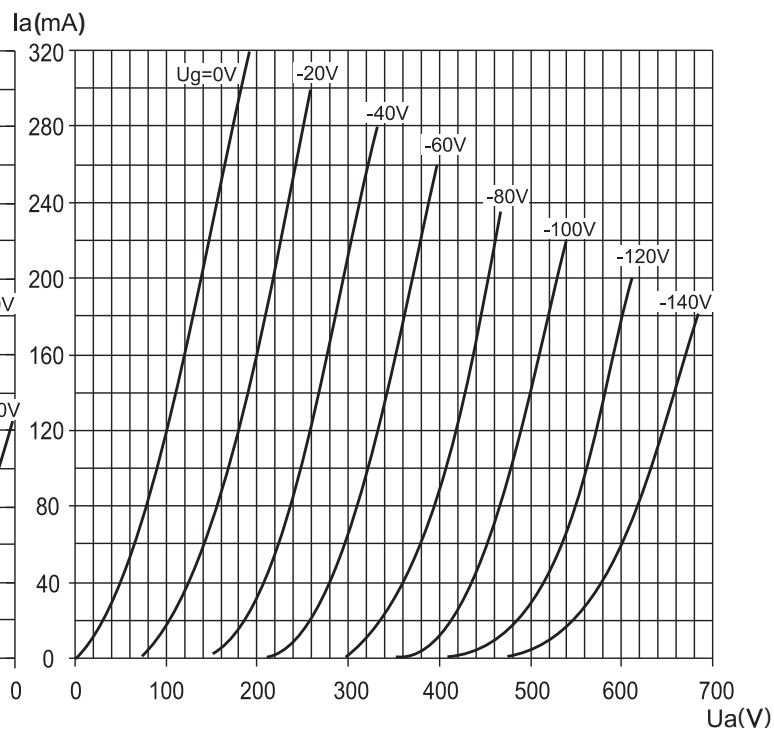
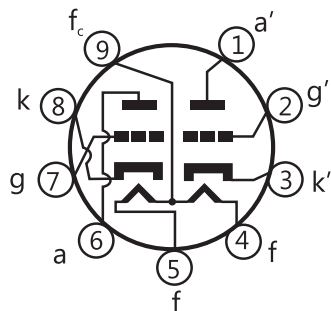


PLATE CHARACTERISTICS



5751

A. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 350/175 \text{ mA}$

Limiting Values:

$U_a = 300 \text{ V}$
 $U_g = -50 \text{ V}$
 $W_a = 1 \text{ W}$
 $U_{k/f} = 180 \text{ V}$

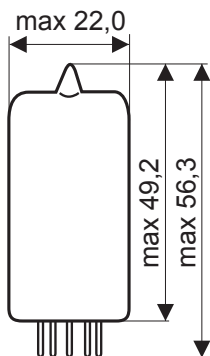
Typical Characteristics:

$U_a = 100 \text{ V}$
 $U_g = -1 \text{ V}$
 $I_a = 0,8 \text{ mA}$
 $S = 1,2 \text{ mA/V}$
 $R_i = 58 \text{ k}\Omega$
 $\mu = 70$

Capacitances:

system I. system II.

$C_{g/k} =$	1,6	1,6	pF
$C_a =$	0,33	0,33	pF
$C_{g/a} =$	1,7	1,7	pF



TRANSFER CHARACTERISTICS

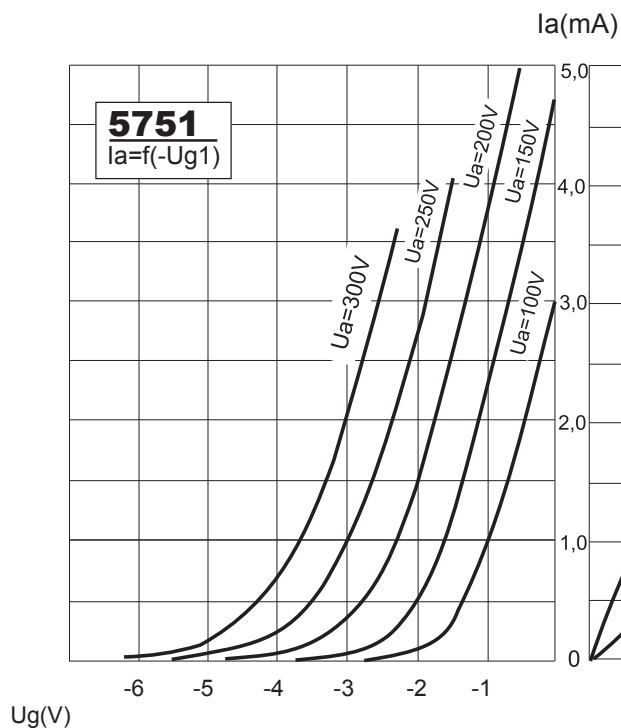
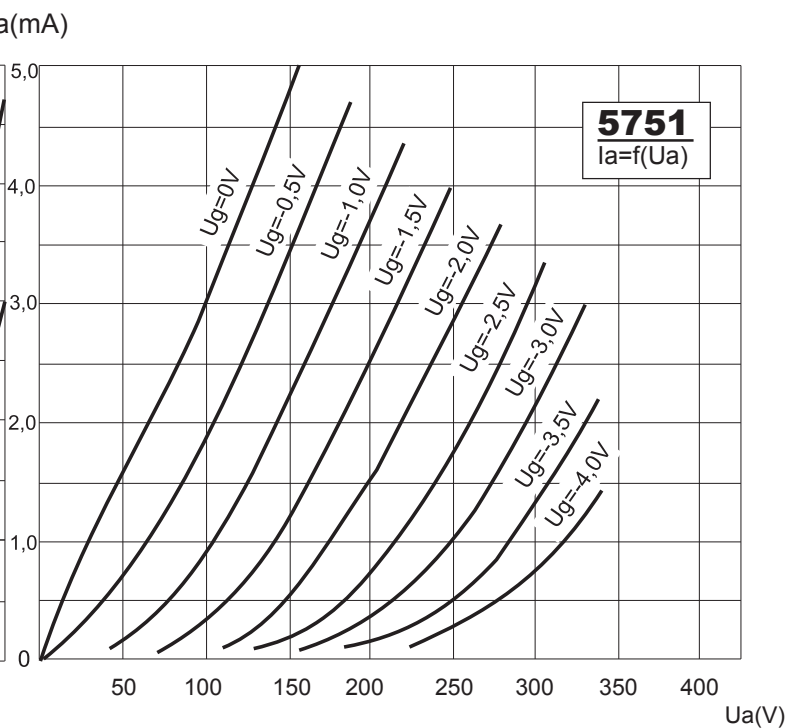
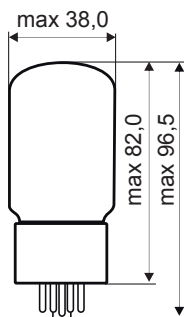
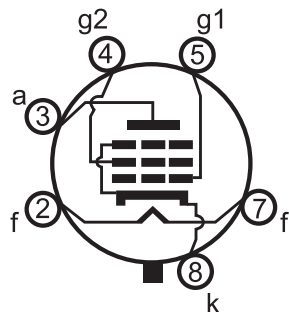


PLATE CHARACTERISTICS



5881

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,9 \text{ A}$$

Typical Characteristics: Class A1:

Single tube Push-Pull

U_a	= 250	270	V
U_{g2}	= 250	270	V
U_{g1}	= -14	-17,5	V
I_a	= 63	134	mA
I_{g2}	= 4,3	11	mA
R_a	= 2,5	-	k Ω
R_{a-a}	= -	5	k Ω
N	= 6,7	17,5	W

Limiting Values:

	Triode	Pentode	
U_a	= 450	500	V
U_{g2}	= 450	450	V
W_a	= 26	23	W

Grid No 1 Circuit Resistance

Fixed Bias	0,1	M Ω
Self Bias	0,5	M Ω



TRANSFER CHARACTERISTICS

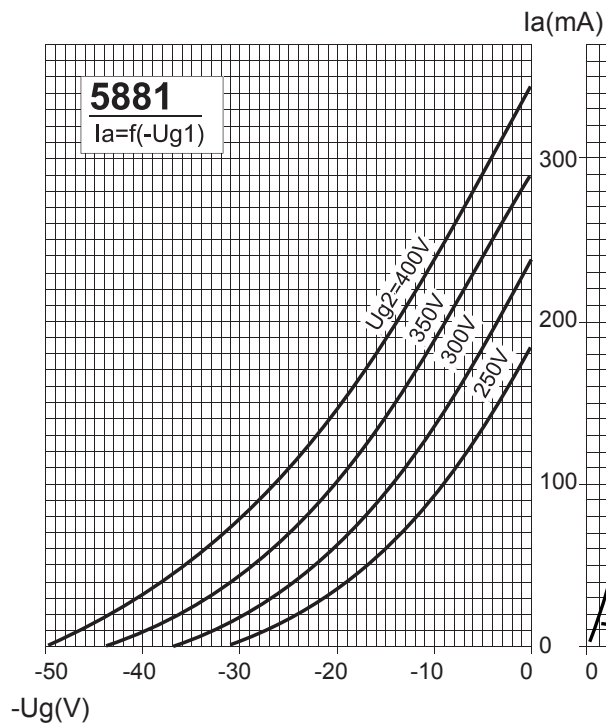
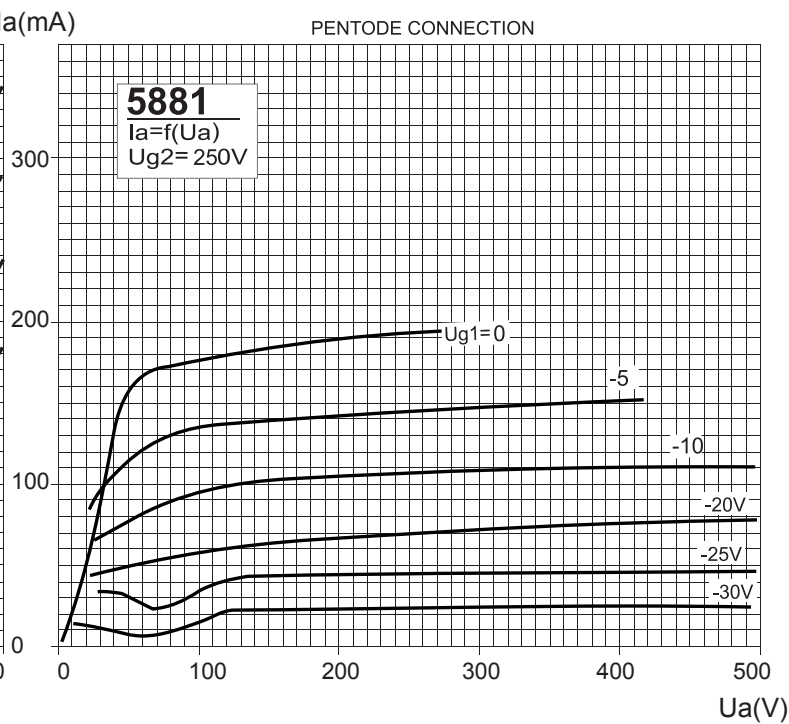
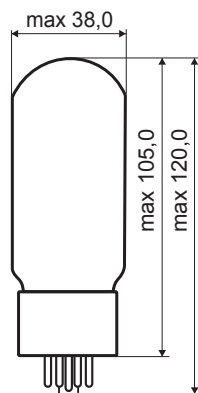
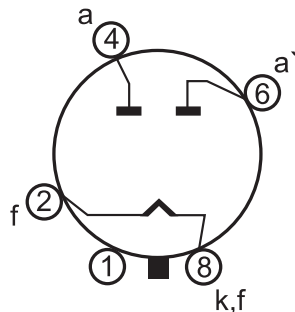


PLATE CHARACTERISTICS



5U4GB

FULL – WAVE VACUUM RECTIFIER



Base: OCTAL

$U_f = 5 \text{ V}$

$I_f = 3 \text{ A}$

Typical Characteristics:

Capacitor Input: see graph # 1

Choke Input: see graph # 2

Limiting Values:

Capacitor Input

$f = 50 \text{ Hz}$

$U_a \text{ invp} = 1550 \text{ V}$

$I_p = 1 \text{ A}$

$C = 40 \text{ } \mu\text{F}$

Choke Input

$f = 50 \text{ Hz}$

$U_a \text{ invp} = 1550 \text{ V}$

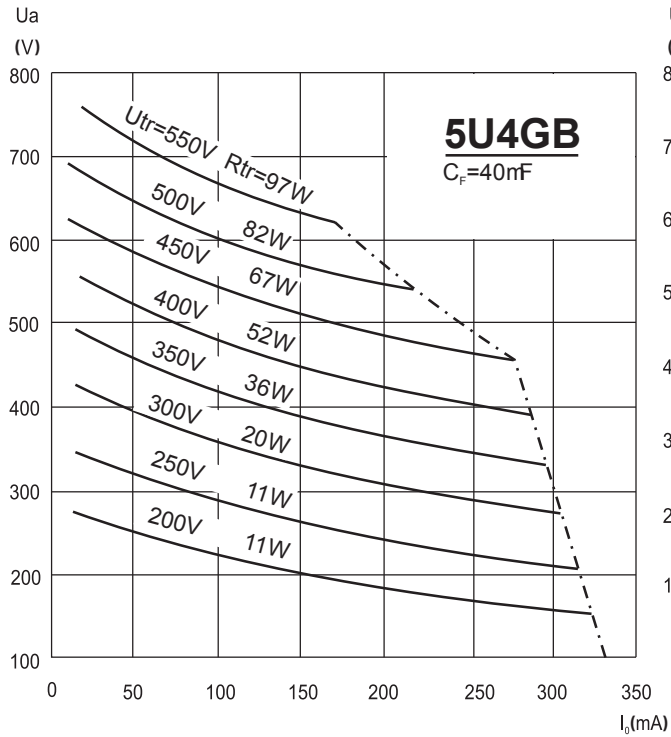
$I_p = 1 \text{ A}$

$L = 10 \text{ H}$

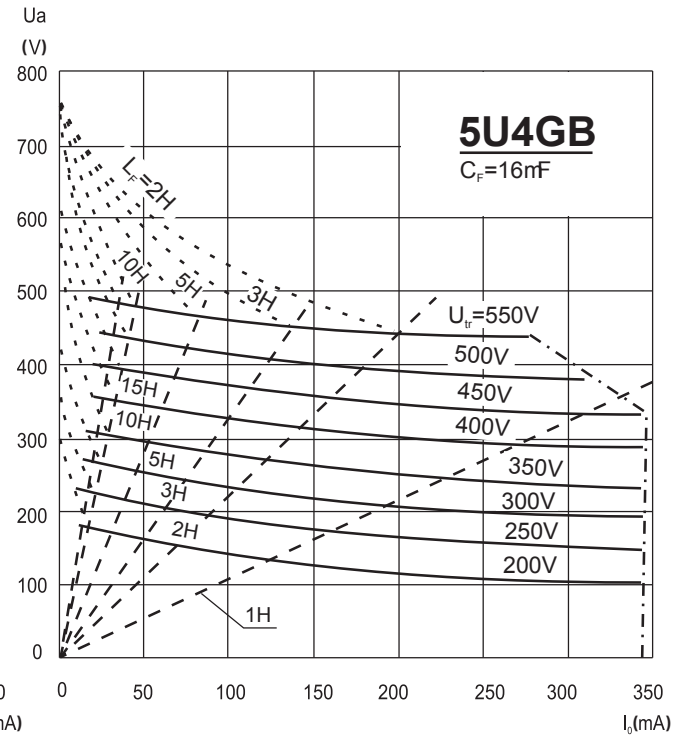


FULL - WAVE VACUUM RECTIFIER

GRAPH #1

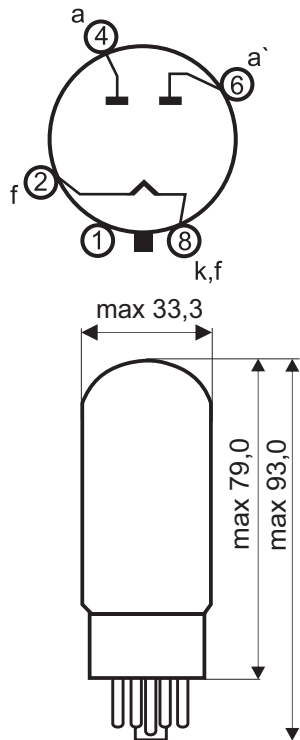


GRAPH #2



5Y3S

DOUBLE ANODE RECTIFYING TUBE



Base: OCTAL

$$U_f = 5 \text{ V}$$

$$I_f = 2 \text{ A}$$

Typical Characteristics:

Capacitor Input

$$\text{AC } U_a \text{ Supply Voltage Each Plate} = 350 \text{ V}$$

$$C = 20 \text{ } \mu\text{F}$$

$$R_t = 50 \text{ } \Omega$$

$$\text{DC Output Current} = 125 \text{ mA}$$

$$\text{DC Output Voltage} = 360 \text{ V}$$

$$\text{AC } U_a \text{ Supply Voltage Each Plate} = 500 \text{ V}$$

$$C = 10 \text{ } \mu\text{F}$$

$$R_t = 140 \text{ } \Omega$$

$$\text{DC Output Current} = 84 \text{ mA}$$

$$\text{DC Output Voltage} = 560 \text{ V}$$

Choke Input

$$\text{AC } U_a \text{ Supply Voltage Each Plate} = 350 \text{ V}$$

$$L = 10 \text{ H}$$

$$\text{DC Output Current} = 150 \text{ mA}$$

$$\text{DC Output Voltage} = 245 \text{ V}$$

$$\text{AC } U_a \text{ Supply Voltage Each Plate} = 500 \text{ V}$$

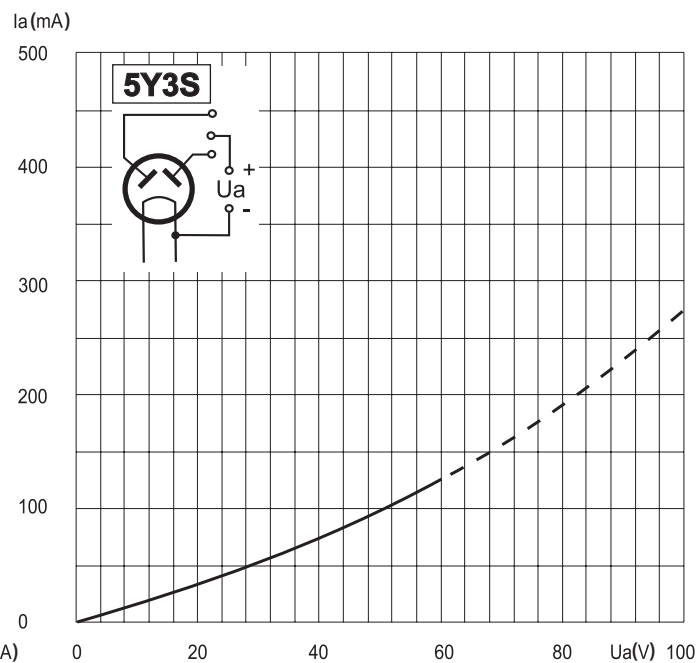
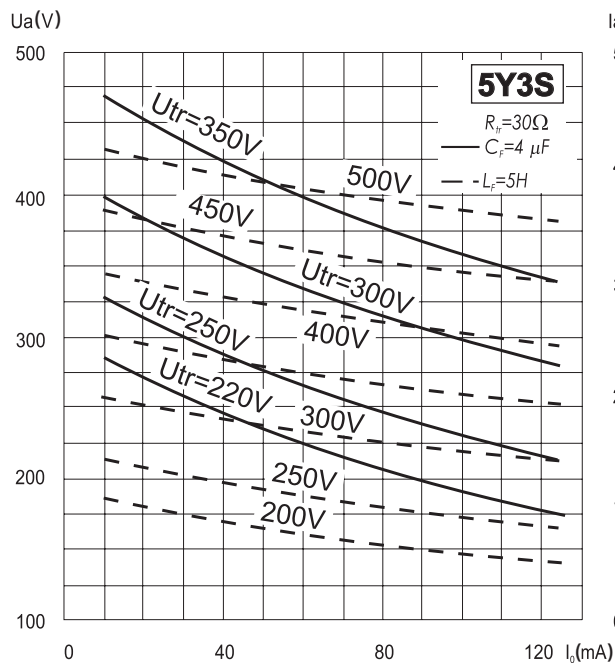
$$L = 10 \text{ H}$$

$$\text{DC Output Current} = 125 \text{ mA}$$

$$\text{DC Output Voltage} = 380 \text{ V}$$

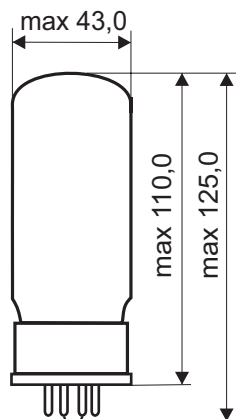
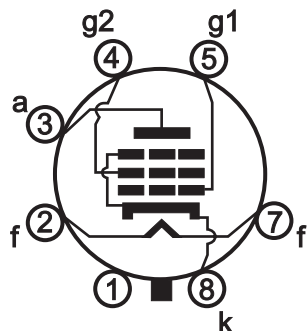


DOUBLE ANODE RECTIFYING TUBE



6550

A. F. BEAM PENTODE



Base: OCTAL

$U_f = 6,3 \text{ V}$

$I_f = 1,6 \text{ A}$

Typical Characteristics:

$U_a = 250 \text{ V}$

$U_{g2} = 250 \text{ V}$

$U_{g1} = -14 \text{ V}$

$I_a = 140 \text{ mA}$

$I_{g2} = \text{max. } 12 \text{ mA}$

$S = 11,8 \text{ mA/V}$

$R_i = 16 \text{ k}\Omega$

Limiting Values:

$U_a = 600 \text{ V}$

$U_{g2} = 400 \text{ V}$

$U_{g1} = -300 \text{ V max.}$

negative - bias value.

$U_{g1} = 0 \text{ V max.}$

positive - bias value.

$I_k = 175 \text{ mA}$

$W_a = 35 \text{ W}$

$W_{g2} = 6 \text{ W}$

Capacitances:

$C_{g1} = 14 \text{ pF}$

$C_a = 12 \text{ pF}$

$C_{a/g1} = 0,85 \text{ pF}$



ULTRA - LINEAR CONNECTION - 40% TAPS

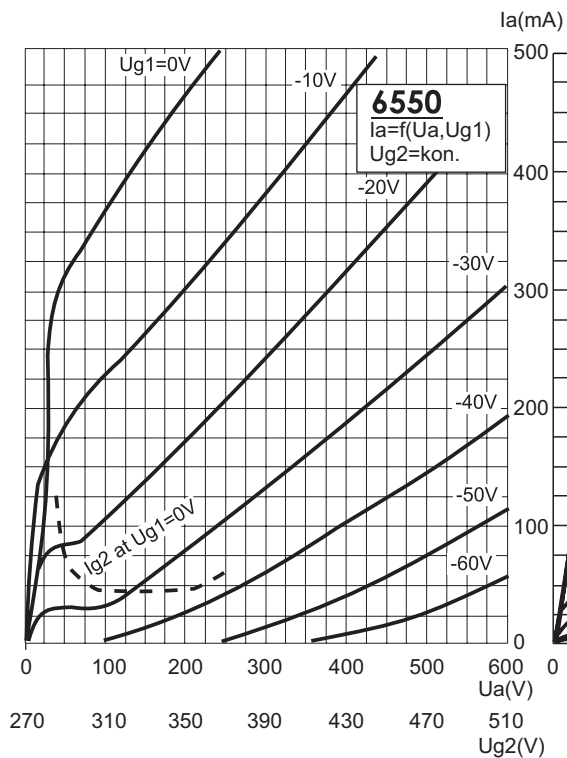
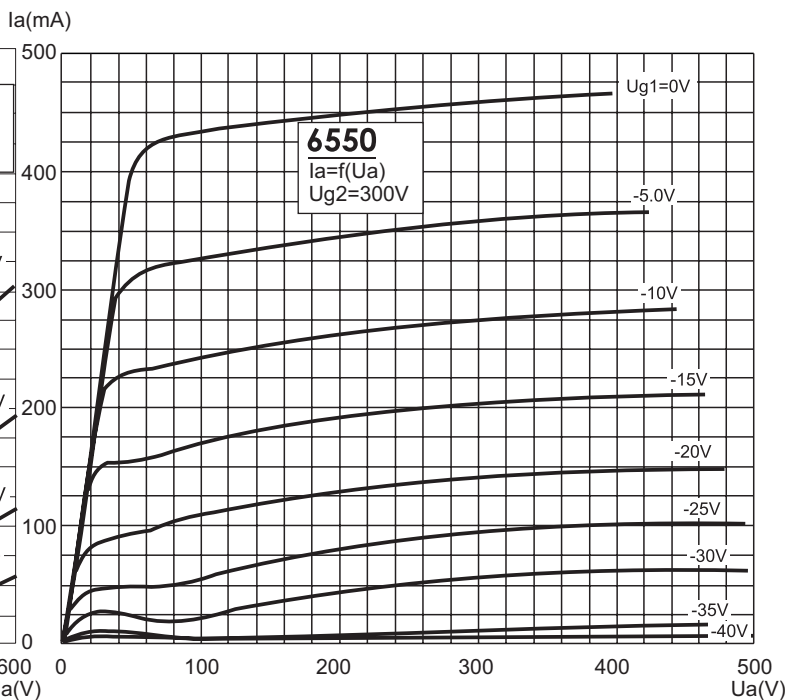
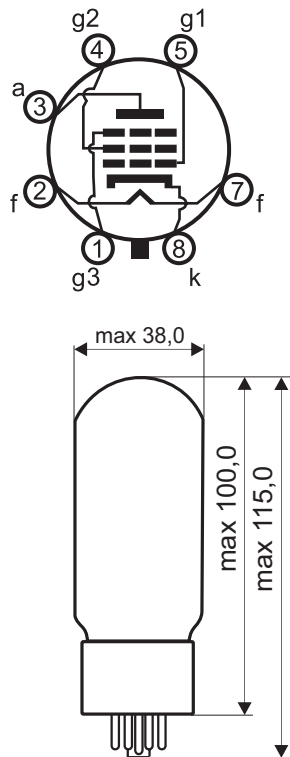


PLATE CHARACTERISTICS



6CA7

A. F. OUTPUT PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,5 \text{ A}$$

Typical Characteristics:

$$U_a = 400 \text{ V}$$

$$U_{g2} = 400 \text{ V}$$

$$U_{g1} = 32 \text{ V}$$

$$I_a = 50 \text{ mA}$$

$$I_{g2} = 11 \text{ mA}$$

$$S = 9,5 \text{ mA/V}$$

$$R_a = 24 \text{ k}\Omega$$

Capacitances:

$$C_{g1} = 16,5 \text{ pF}$$

$$C_a = 9 \text{ pF}$$

$$C_{a/g1} = 1 \text{ pF}$$

Limiting Values:

$$U_a = 800 \text{ V}$$

$$U_{g2} = 500 \text{ V}$$

$$W_a = 25 \text{ W}$$

$$W_{g2} = 8 \text{ W}$$

$$I_k = 150 \text{ mA}$$

$$U_{k/f} = 200 \text{ V}$$

$$U_{g1} = -100 \text{ V}$$



TRANSFER CHARACTERISTICS

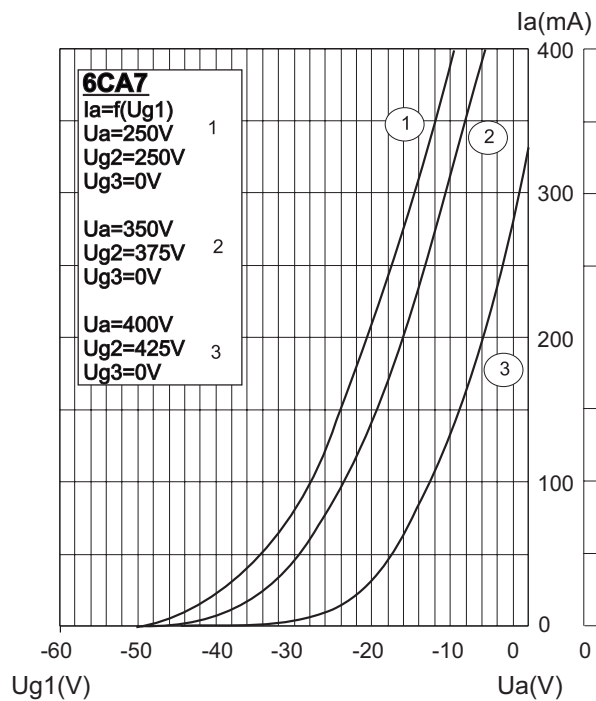
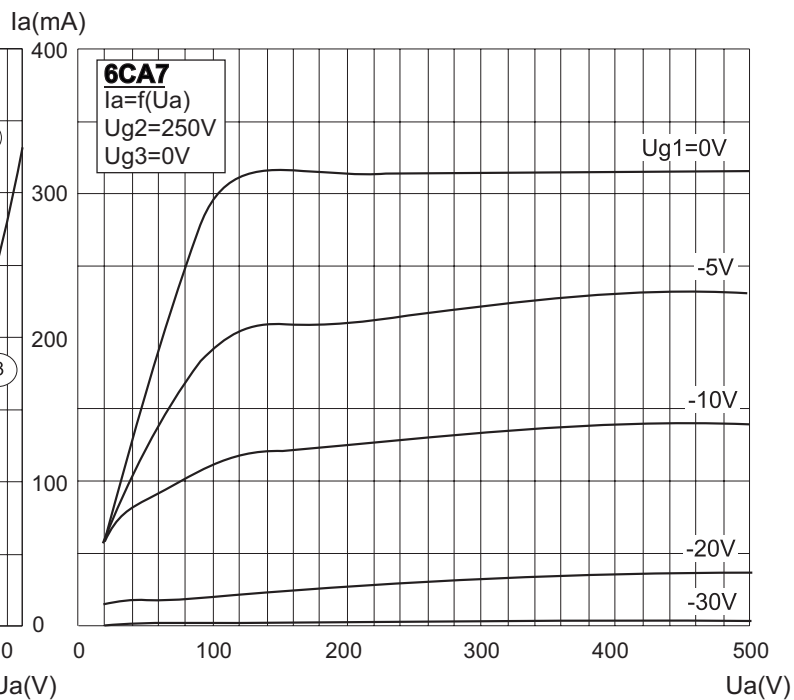
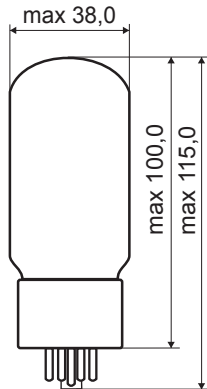
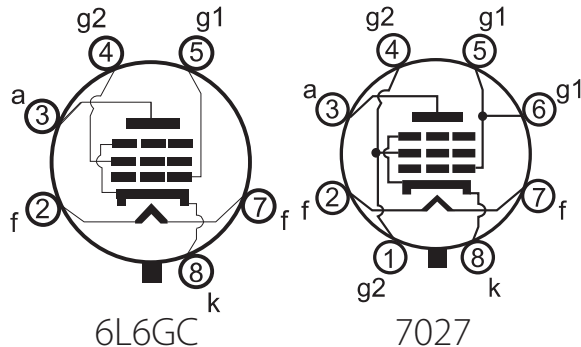


PLATE CHARACTERISTICS



6L6GC (7027)

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,9 \text{ A}$$

Typical Characteristics:

Class A1 Amp.

Single tube Push-Pull

$U_a =$	250	270	V
$U_{g2} =$	250	270	V
$U_{g1} =$	-14	-17,5	V
$I_a =$	72	134	mA
$I_{g2} =$	5	11	mA
$R_a =$	22,5	-	kΩ
$R_{a-a} =$	-	5	kΩ
$N =$	6,5	17,5	W

Limiting Values:

	Triode	Pentode	
$U_a =$	450	500	V
$U_{g2} =$	450	450	V
$W_a =$	30	30	W

Capacitances:

$C_{g1} =$	12,5	pF
$C_a =$	10	pF
$C_{a/g1} =$	1,5	pF

Grid No 1 Circuit Resistance

Fixed Bias	0,1	0,1	MΩ
Self Bias	0,5	0,5	MΩ



TRANSFER CHARACTERISTICS

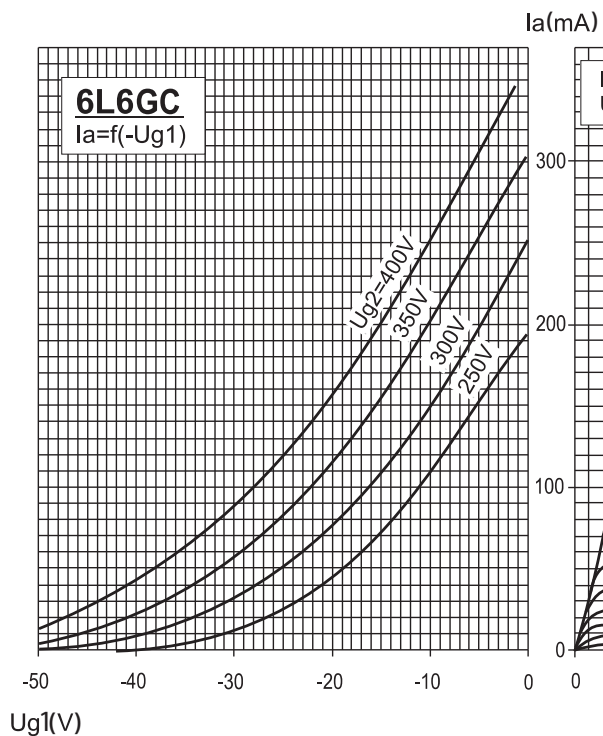
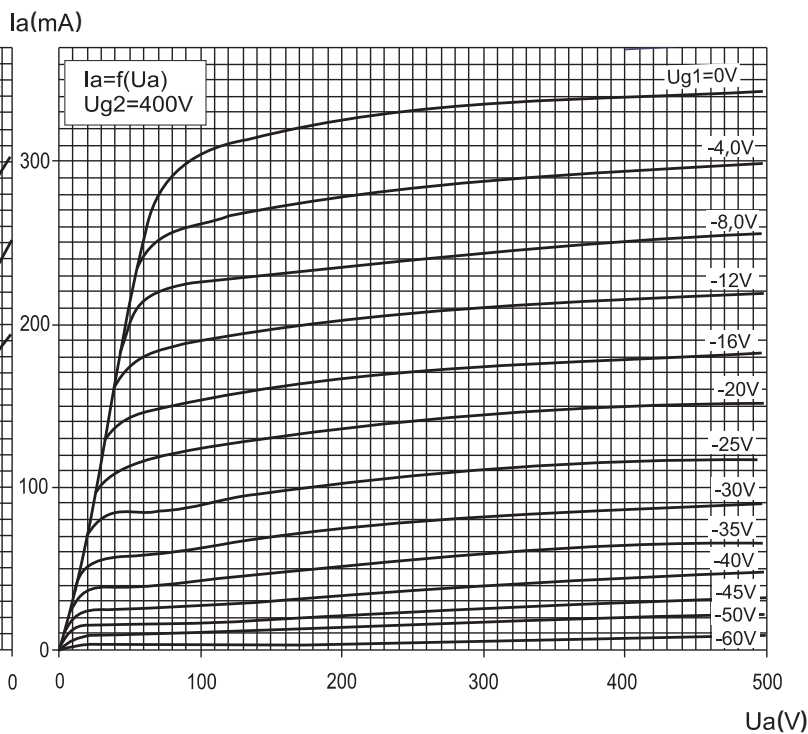
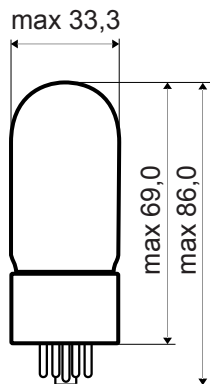
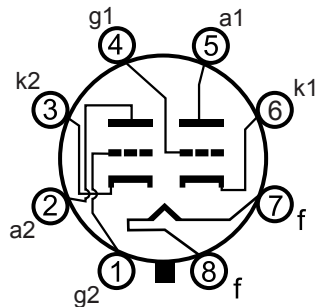


PLATE CHARACTERISTICS



6SL7

DOUBLE TRIODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 300 \text{ mA}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_g = -2 \text{ V}$$

$$I_a = 2,3 \text{ mA}$$

$$S = 1,6 \text{ mA/V}$$

$$R_i = 44 \text{ k}\Omega$$

$$\mu = 70$$

Limiting Values:

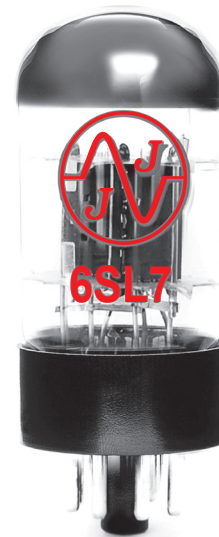
$$U_a = 300 \text{ V}$$

$$W_c = 1,0 \text{ W}$$

$$I_k = 8 \text{ mA}$$

$$U_{k/f} = \pm 90 \text{ V}$$

$$U_{g+} = 0 \text{ V}$$



TRANSFER CHARACTERISTICS

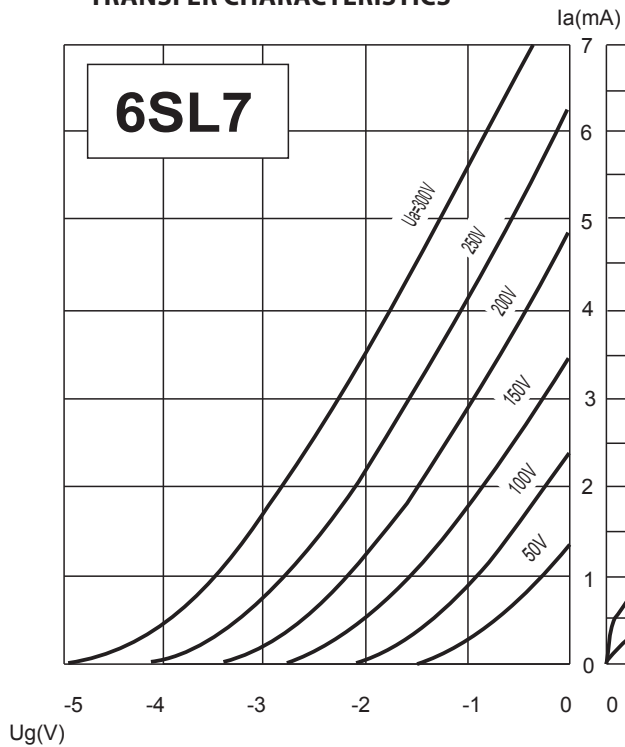
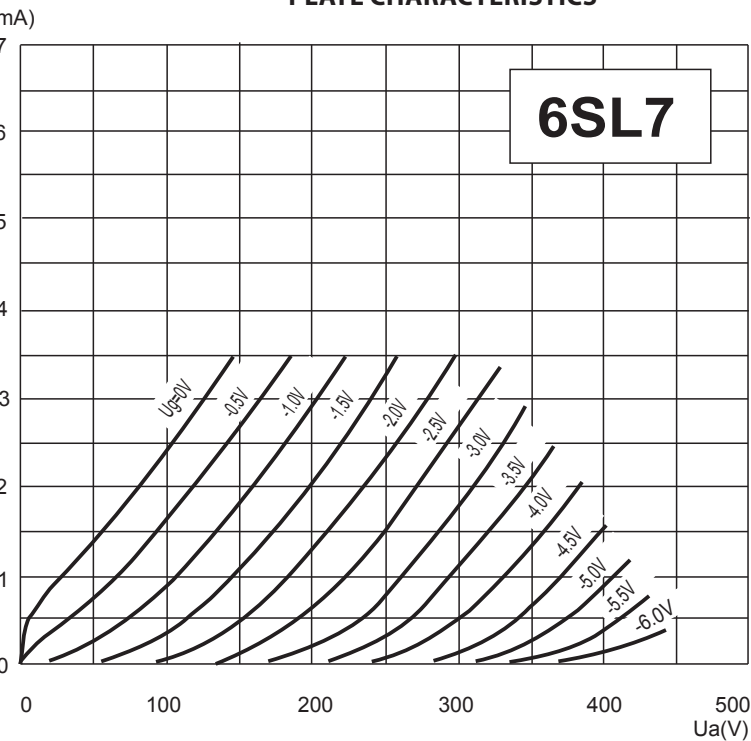
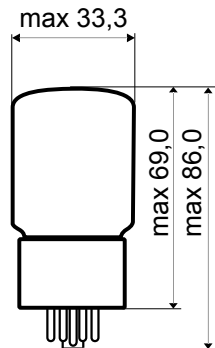
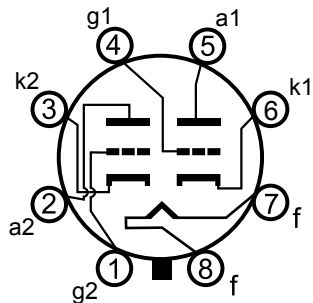


PLATE CHARACTERISTICS



6SN7

DOUBLE TRIODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 600 \text{ mA}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_g = -8 \text{ V}$$

$$I_a = 9 \text{ mA}$$

$$S = 2,6 \text{ mA/V}$$

$$R_i = 7,7 \text{ k}\Omega$$

$$\mu = 20$$

Limiting Values:

$$U_a = 450 \text{ V}$$

$$W_a, \text{ Each plate} = 5,0 \text{ W}$$

$$W_a, \text{ Both plates} = 7,5 \text{ W}$$

$$I_k = 20 \text{ mA}$$

$$U_{k/f} = \pm 100 \text{ V}$$

$$R_g = 1,0 \text{ M}\Omega \text{ (fixed bias)}$$

$$= 1,0 \text{ M}\Omega \text{ (cathode bias)}$$



TRANSFER CHARACTERISTICS

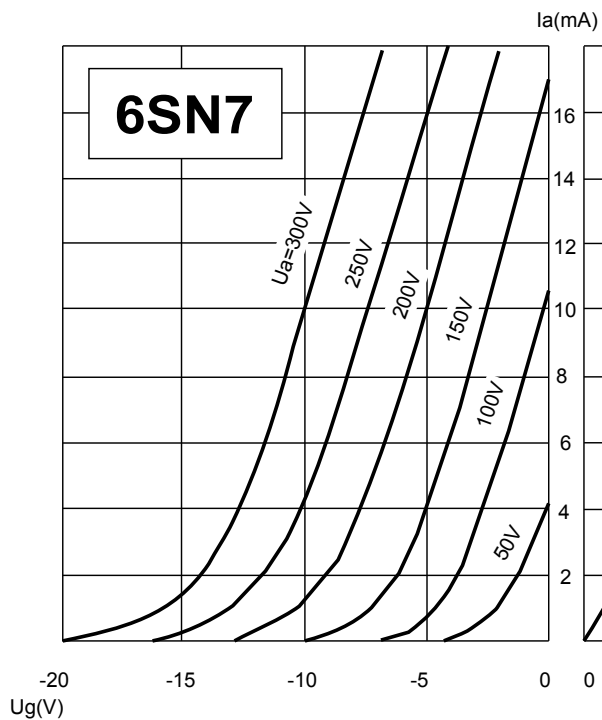
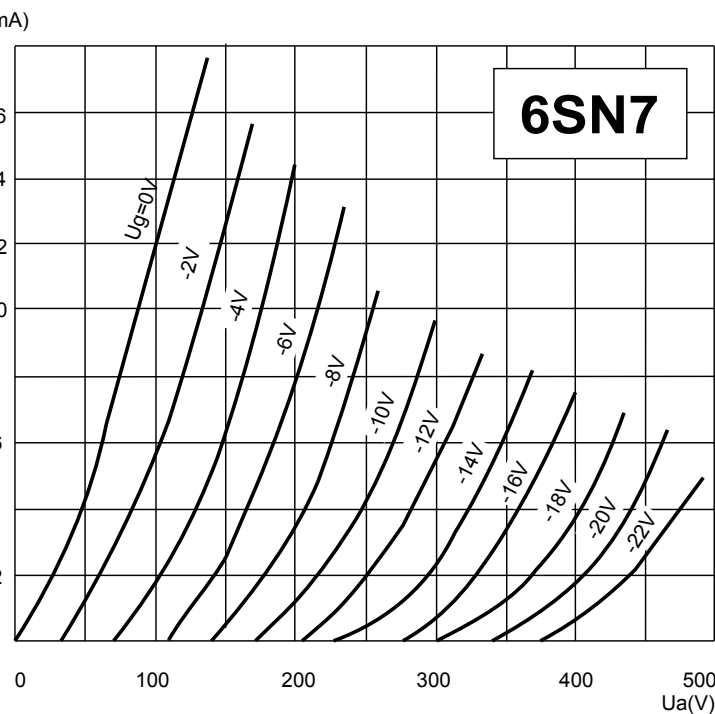
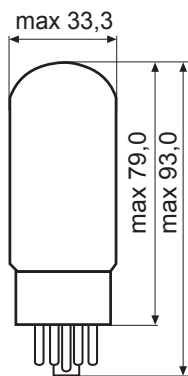
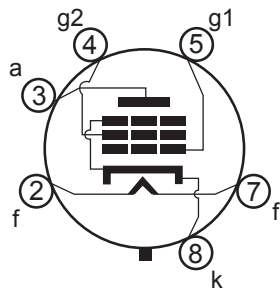


PLATE CHARACTERISTICS



6V6S

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,5 \text{ A}$$

Capacitances:

$$C_{g1} = 9 \text{ pF}$$

$$C_a = 8,5 \text{ pF}$$

$$C_{a/g1} = 0,7 \text{ pF}$$

Typical Characteristics: Class A1 Amp.

Single tube Push-Pull

$U_a = 250$	250	V	Substitutes:
$U_{g2} = 250$	250	V	5871
$U_{g1} = -12,5$	-15	V	6AY5
$I_a = 45$	70	mA	6P6C
$I_{g2} = 5$	13	mA	6V6G
$R_a = 50$	-	kΩ	6V6GT
$R_{a-a} = -$	10	kΩ	6V6GTA
$N = 4,5$	10	W	6V6GTU
			6V6Y
			7184
			CV509
			CV510
			CV511
			OSW3106
			VT107
			VT227
			WT2100082
			WTT123
			7408

Limiting Values:

	Triode	Pentode	
$U_a = 450$	500	V	
$U_{g2} = 450$	450	V	
$W_a = 10$	14	W	
Grid No 1 Circuit Resistance			
Fixed Bias	0,1	0,1	MΩ
Self Bias	0,5	0,5	MΩ



TRANSFER CHARACTERISTICS

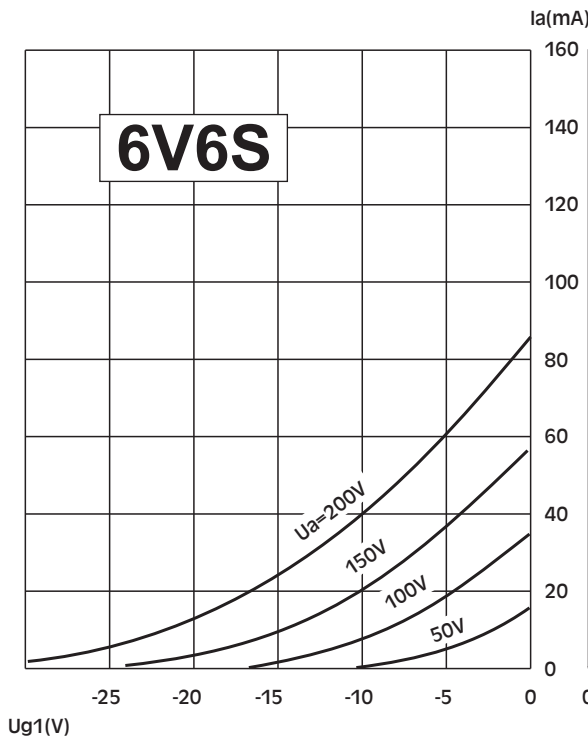
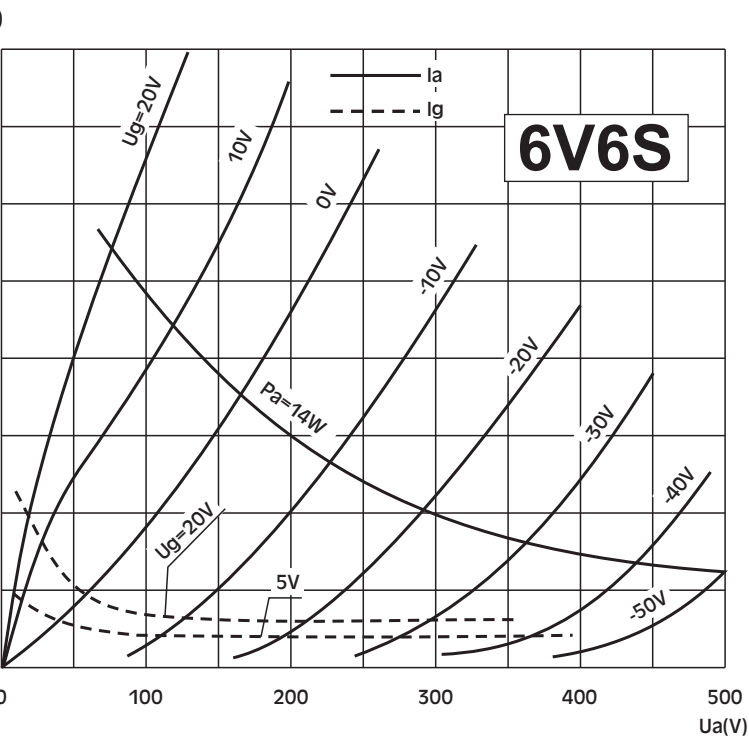
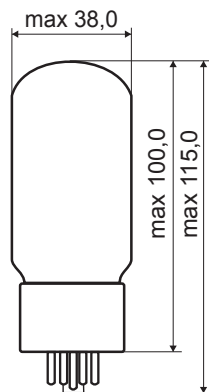
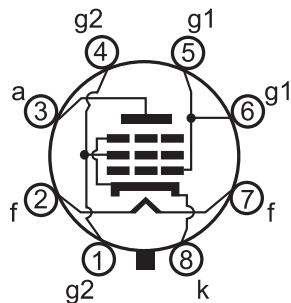


PLATE CHARACTERISTICS



7027A

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,9 \text{ A}$$

Capacitances:

$$C_{g1} = 12,5 \text{ pF}$$

$$C_a = 10 \text{ pF}$$

$$C_{a/g1} = 1,5 \text{ pF}$$

Typical Characteristics:

Class A1 Amp.

Single tube Push-Pull

$$U_a = 250 \quad 270 \text{ V}$$

$$U_{g2} = 250 \quad 270 \text{ V}$$

$$U_{g1} = -14 \quad -17,5 \text{ V}$$

$$I_a = 72 \quad 134 \text{ mA}$$

$$I_{g2} = 5 \quad 11 \text{ mA}$$

$$R_a = 22,5 \quad - \text{ k}\Omega$$

$$R_{a-a} = - \quad 5 \text{ k}\Omega$$

$$N = 6,5 \quad 17,5 \text{ W}$$

Limiting Values:

Triode Pentode

$$U_a = 450 \quad 500 \text{ V}$$

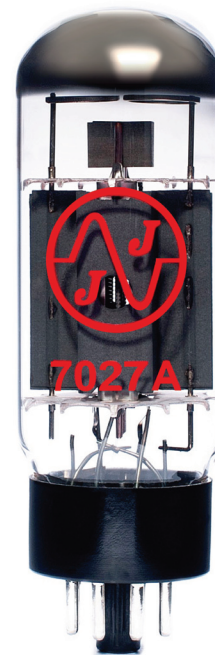
$$U_{g2} = 450 \quad 450 \text{ V}$$

$$W_a = 30 \quad 30 \text{ W}$$

Grid No 1 Circuit Resistance

$$\text{Fixed Bias} \quad 0,1 \quad 0,1 \quad \text{M}\Omega$$

$$\text{Self Bias} \quad 0,5 \quad 0,5 \quad \text{M}\Omega$$



TRANSFER CHARACTERISTICS

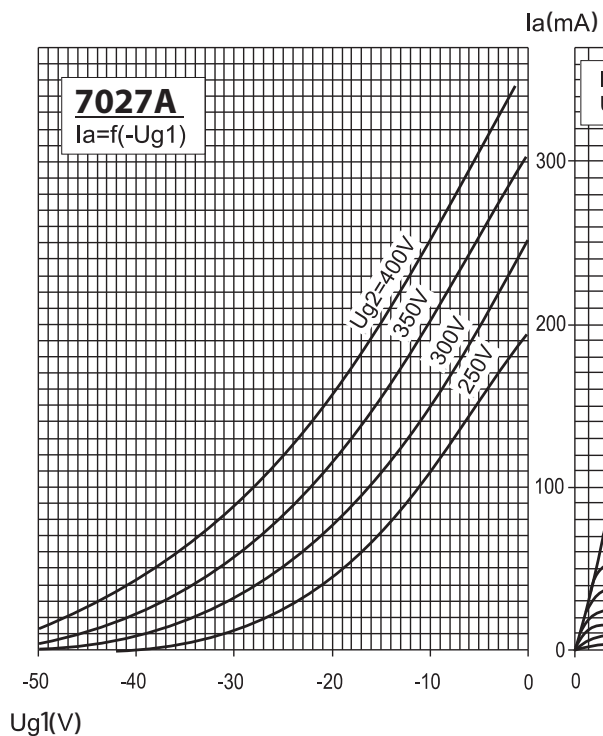
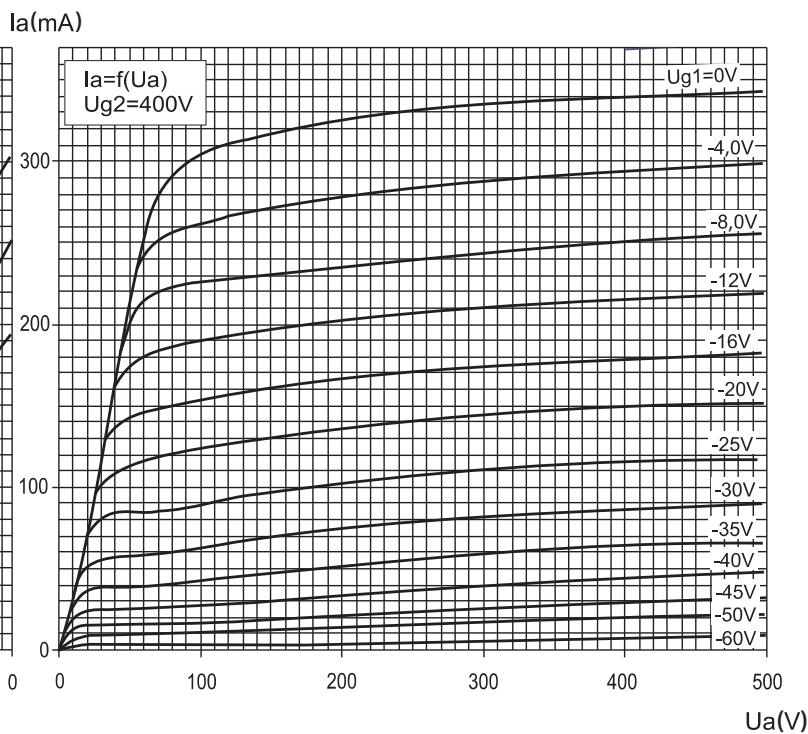
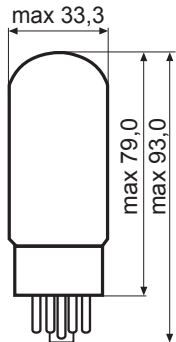
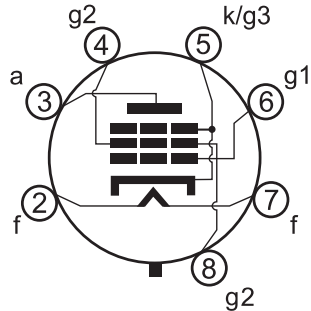


PLATE CHARACTERISTICS



7591S

POWER PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,8 \text{ A}$$

Typical Characteristics: Class A1 Amp.

$$U_a = 300 \text{ V}$$

$$U_{g2} = 300 \text{ V}$$

$$U_{g1} = -10 \text{ V}$$

$$I_a = 60 \text{ mA}$$

$$I_{g2} = 8 \text{ mA}$$

$$S = 10 \text{ mA/V}$$

$$R_i = 29 \text{ k}\Omega$$

$$\mu = 16,8$$

Limiting Values:

$$U_a = 550 \text{ V}$$

$$U_{g2} = 440 \text{ V}$$

$$W_a = 19 \text{ W}$$

$$W_{g2} = 3,3 \text{ W}$$

$$I_k = 85 \text{ mA}$$

$$R_{g1} = \max 0,3 \text{ M}\Omega \text{ (fixed bias)}$$

$$\max 1 \text{ M}\Omega \text{ (cathode bias)}$$

$$U_{kf} = \max 200 \text{ V}$$

Capacitances:

$$C_{g1} = 10 \text{ pF}$$

$$C_a = 5 \text{ pF}$$

$$C_{a/g1} = 0,25 \text{ pF}$$



TRIODE CHARACTERISTICS

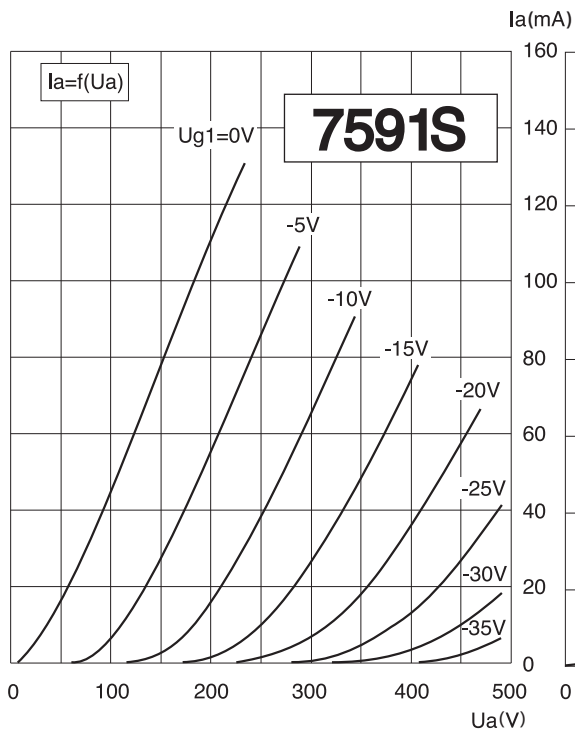
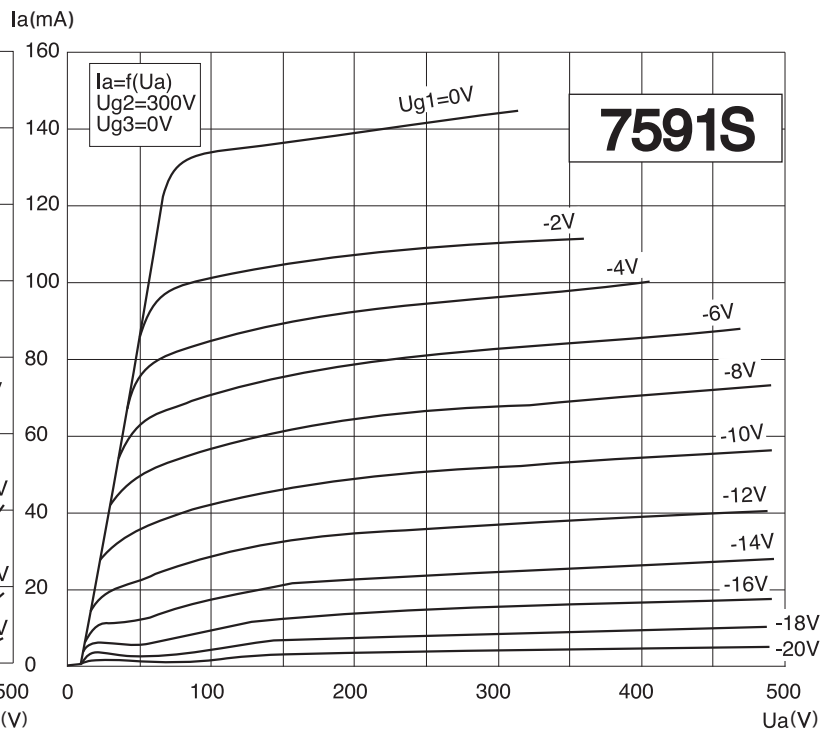


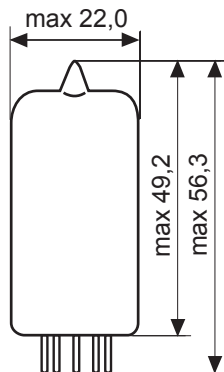
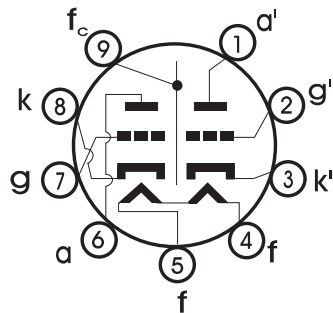
PLATE CHARACTERISTICS



E88CC

6922

R. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3 \text{ V}$
 $I_f = 300 \text{ mA}$

Typical Characteristics:

$U_a = 90 \text{ V}$
 $U_g = -1,3 \text{ V}$
 $I_a = 15 \text{ mA}$
 $S = 12,5 \text{ mA/V}$
 $R_i = 2,6 \text{ k}\Omega$
 $\mu = 33$

Limiting Values:

$U_{a0} = 550 \text{ V}$
 $U_{a(I_a=0)} = 400 \text{ V}$
 $U_a = 220 \text{ V}$
 $U_{a(W_{ar}<0,8 \text{ W})} = 250 \text{ V}$
 $W_{aR} = 1,5 \text{ W}$
 $W_{g1R} = 0,03 \text{ W}$
 $I_k = 20 \text{ mA}$
 $U_g = -100 \text{ V}$
 $R_g = 1 \text{ M}\Omega$
 $U_{+k/f-} = 120 \text{ V}$
 $U_{-k/f+} = 60 \text{ V}$
 $R_{k/f} = 20 \text{ k}\Omega$

Capacitances:

	system I.	system II.	
$C_{g/k}$	3,1	3,1	pF
C_a	0,18	0,18	pF
$C_{g/a}$	1,4	1,4	pF



TRANSFER CHARACTERISTICS

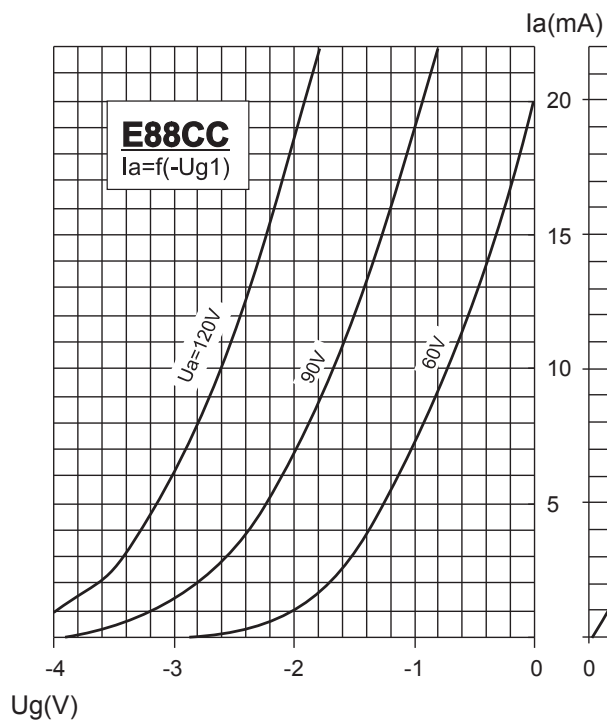
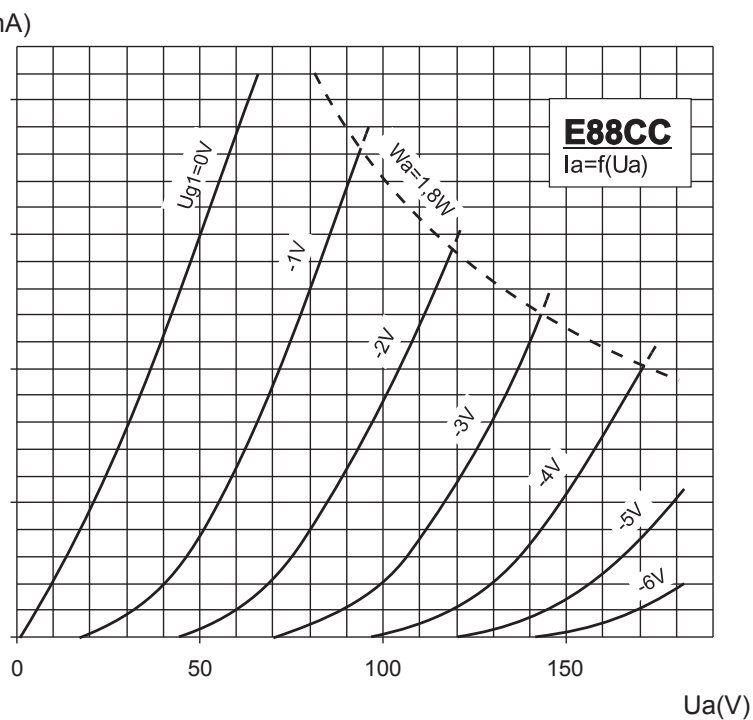


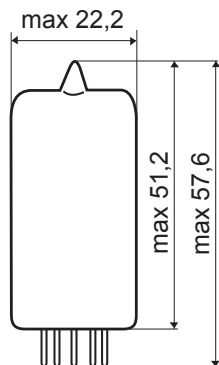
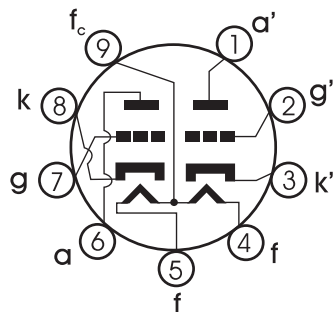
PLATE CHARACTERISTICS



ECC802S

A. F. TWIN TRIODE

NON MICROPHONIC



Base: NOVAL

$$U_f = 6,3/12,6 \text{ V}$$
$$I_f = 300/150 \text{ mA}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$
$$R_k = 800 \Omega$$
$$I_a = 10,5 \text{ mA}$$
$$S = 2,2 \text{ mA/V}$$
$$R_i = 7,7 \text{ k}\Omega$$
$$\mu = 17$$

Limiting Values:

$$U_a = 330 \text{ V}$$
$$W_a = 3 \text{ W}$$
$$I_k = 22 \text{ mA}$$
$$U_g = -55 \text{ V}$$
$$R_g = 1 \text{ M}\Omega$$
$$U_{k/f} = 100 \text{ V}$$

Capacitances:

system I. system II.

$$C_{g/k} = 1,6 \quad 1,6 \quad \text{pF}$$
$$C_a = 0,5 \quad 0,4 \quad \text{pF}$$
$$C_{g/a} = 1,5 \quad 1,5 \quad \text{pF}$$



TRANSFER CHARACTERISTICS

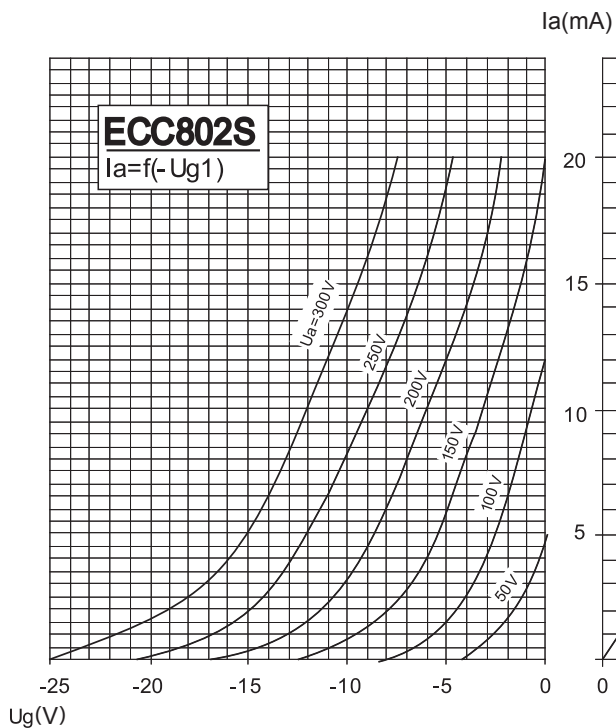
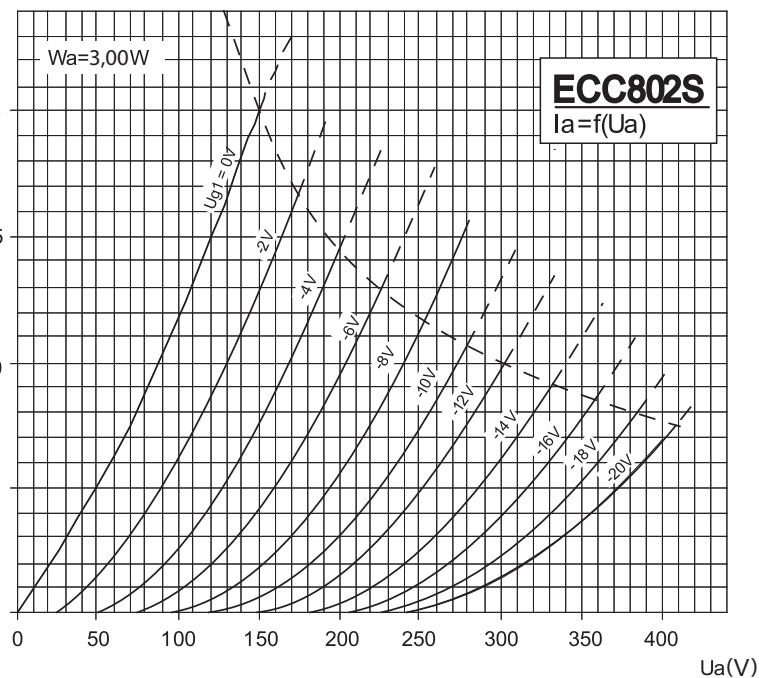


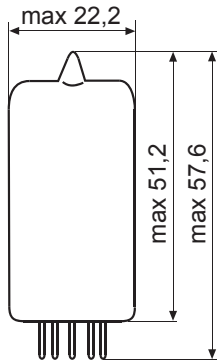
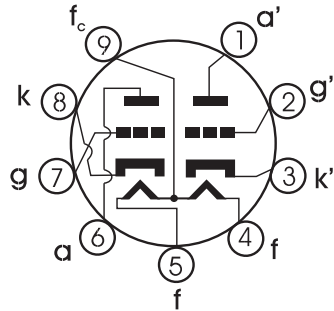
PLATE CHARACTERISTICS



ECC803S

A. F. TWIN TRIODE

NON MICROPHONIC



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 300/150 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $R_k = 1 \text{ k}\Omega$
 $I_a = 1,2 \text{ mA}$
 $S = 1,6 \text{ mA/V}$
 $R_i = 62,5 \text{ k}\Omega$
 $\mu = 100$

Limiting Values:

$U_a = 300 \text{ V}$
 $W_a = 1,2 \text{ W}$
 $I_k = 9 \text{ mA}$
 $U_g = -55 \text{ V}$
 $R_g = 2,2 \text{ M}\Omega$
 $U_{k/f} = 100 \text{ V}$

Capacitances:

system I. system II.

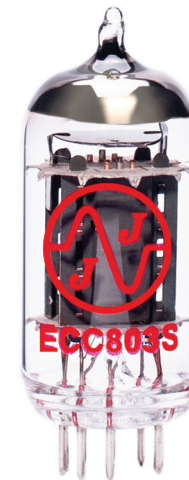
$C_{g/k} = 1,6 \quad 1,6 \quad \text{pF}$
 $C_a = 0,46 \quad 0,34 \quad \text{pF}$
 $C_{g/a} = 1,7 \quad 1,7 \quad \text{pF}$

Operating Characteristics:

Resistance - coupled amplifier cathode grid bias

$U_b = 250 \quad 250 \quad 250 \quad \text{V}$
 $R_a = 47 \quad 100 \quad 220 \quad \text{k}\Omega$
 $I_a = 1,18 \quad 0,86 \quad 0,48 \quad \text{mA}$
 $R_g = 1 \quad 1 \quad 1 \quad \text{M}\Omega$
 $R_k = 1,2 \quad 1,5 \quad 2,7 \quad \text{k}\Omega$

Substitutes: 6057



TRANSFER CHARACTERISTICS

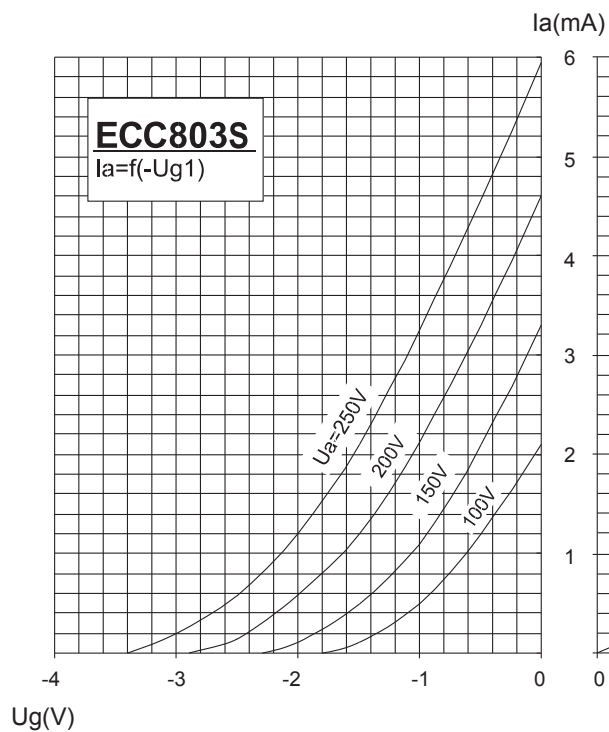
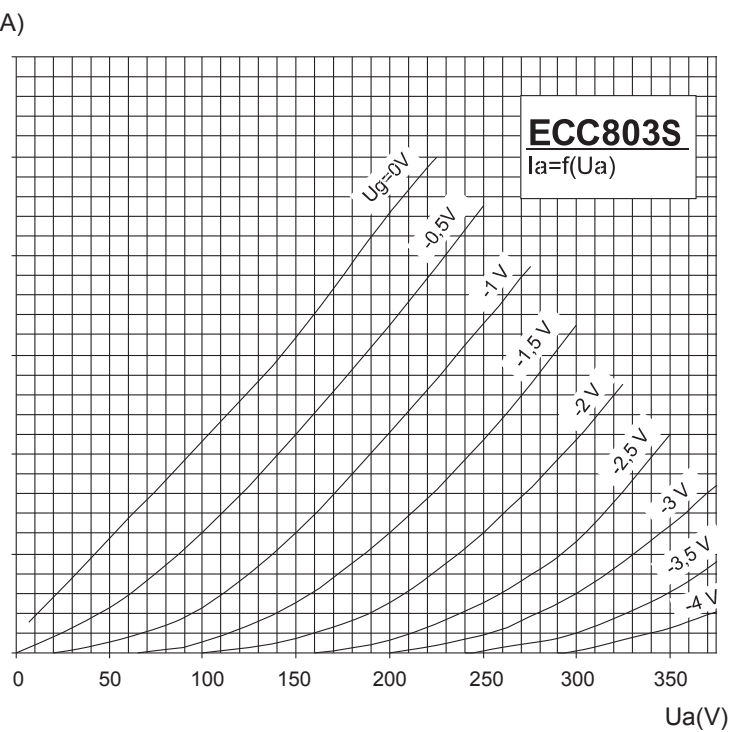


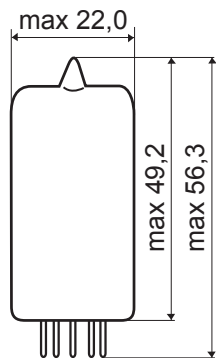
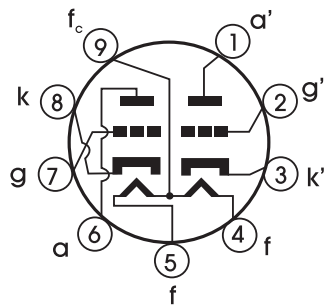
PLATE CHARACTERISTICS



ECC81

12AT7, 6201

R. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 300/150 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $I_a = 10 \text{ mA}$
 $U_g = -2 \text{ V}$
 $S = 5,5 \text{ mA/V}$
 $\mu = 60$
 $R_i = 11 \text{ k}\Omega$

Limiting Values:

$U_a = 300 \text{ V}$
 $W_a = 2,5 \text{ W}$
 $I_k = 15 \text{ mA}$
 $U_g = -50 \text{ V}$
 $U_{k/f} = 90 \text{ V}$
 $R_g = 1 \text{ M}\Omega$



TRANSFER CHARACTERISTICS

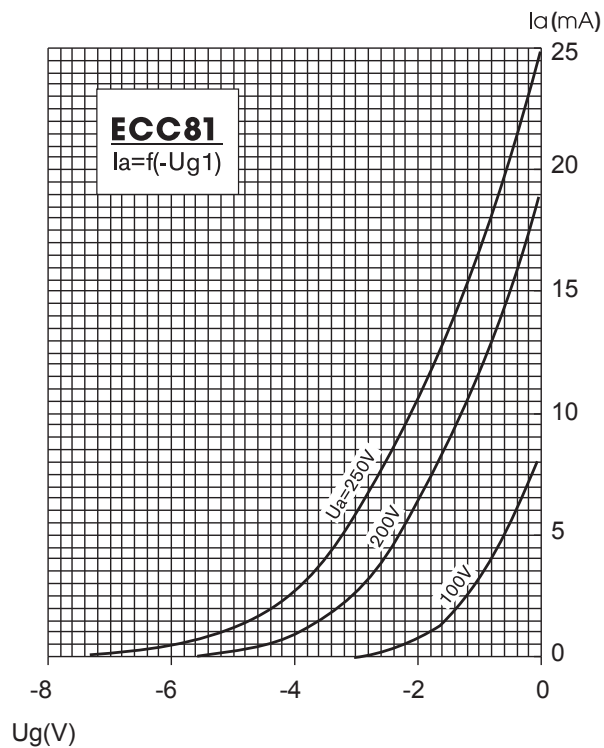
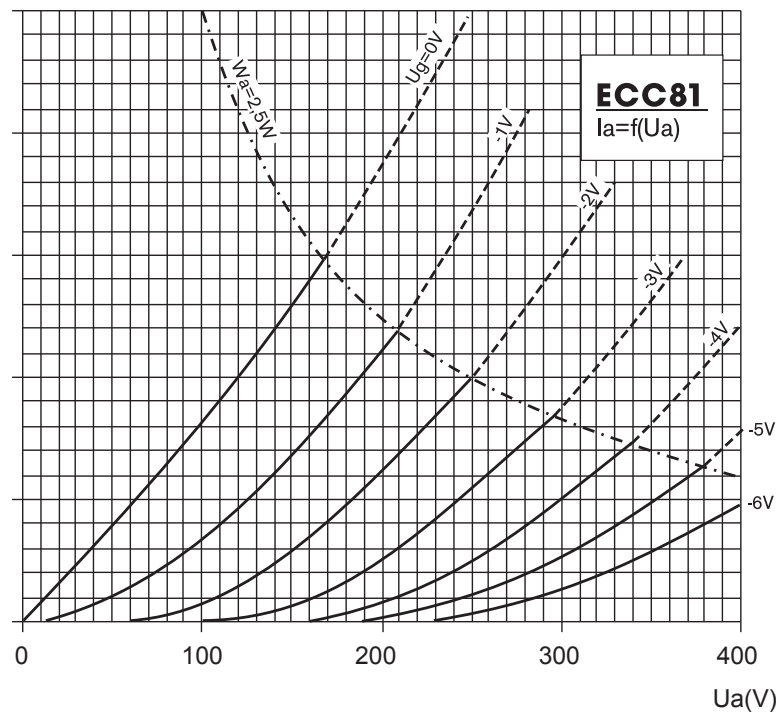


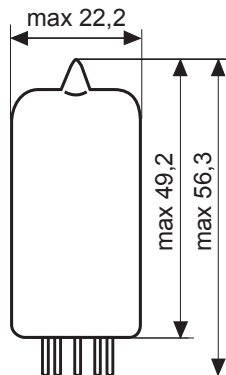
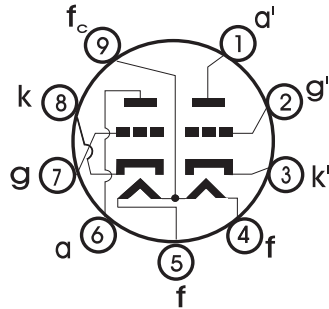
PLATE CHARACTERISTICS



ECC82

12AU7

A. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 300/150 \text{ mA}$

Limiting Values:

$U_a = 300 \text{ V}$
 $W_a = 2,75 \text{ W}$
 $I_k = 20 \text{ mA}$
 $U_g = -50 \text{ V}$
 $R_g = 1 \text{ M}\Omega$
 $U_{k/f} = 180 \text{ V}$
 $R_{k/f} = 150 \text{ k}\Omega$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $U_g = -8,5 \text{ V}$
 $I_a = 10,5 \text{ mA}$
 $S = 2,2 \text{ mA/V}$
 $R_i = 7,7 \text{ k}\Omega$
 $\mu = 17$

Capacitances:

	system I.	system II.	
C_g/k	1,9	1,9	pF
C_a	1,9	1,8	pF
C_g/a	1,63	1,63	pF

As phase inverter:

U_b	250	350	V
I_a	0,7	1,0	mA
$I_{a'}$	0,68	0,93	mA
U_o/U_{g1}	11	11	
U_o	15	24	V _{RMS}
d_{tot}	1	1	%



TRANSFER CHARACTERISTICS

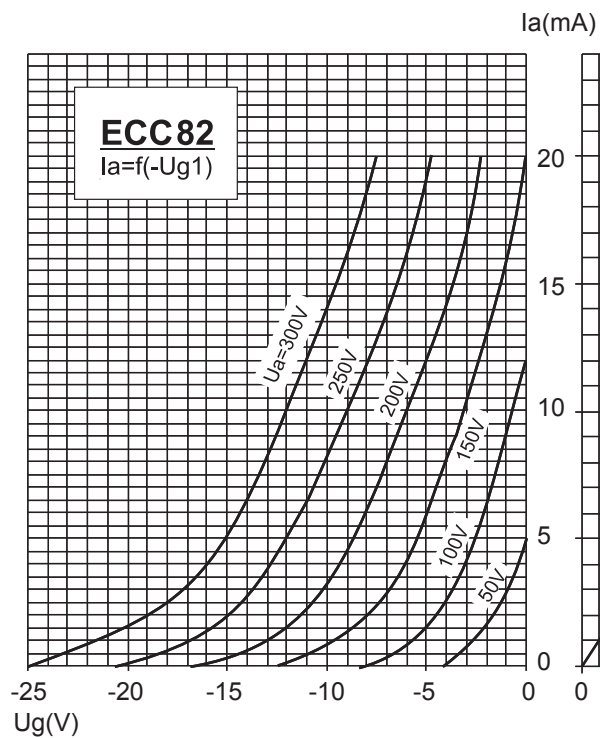
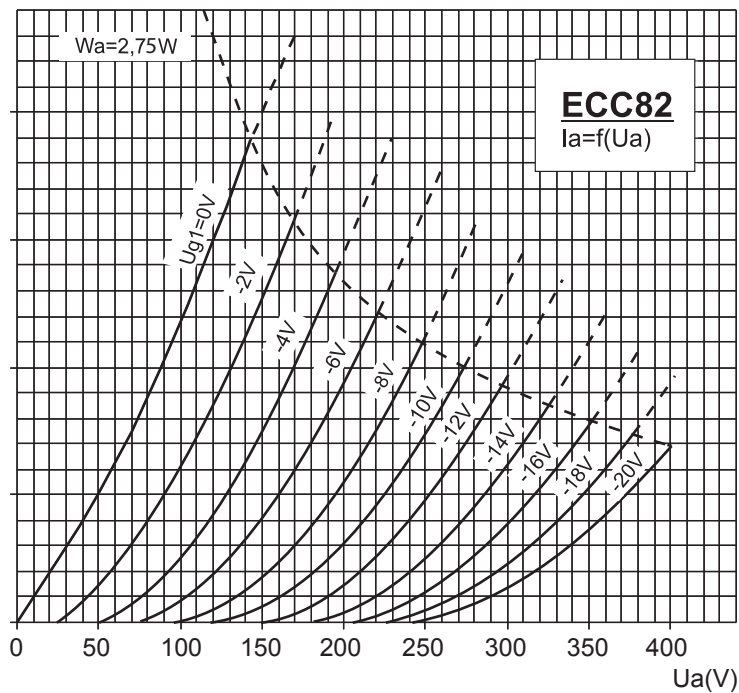


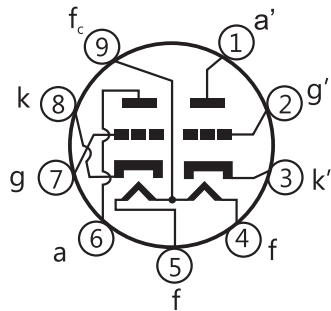
PLATE CHARACTERISTICS



ECC83MG

12AX7MG

A. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 300/150 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $U_g = -2 \text{ V}$
 $I_a = 1,2 \text{ mA}$
 $S = 1,6 \text{ mA/V}$
 $R_i = 62,5 \text{ k}\Omega$
 $\mu = 100$

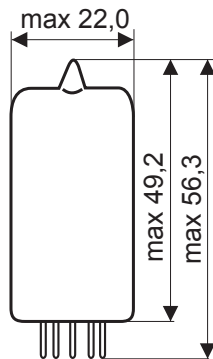
Limiting Values:

$U_a = 300 \text{ V}$
 $U_g = -50 \text{ V}$
 $R_g = 2,2 \text{ M}\Omega$
 $W_a = 1 \text{ W}$
 $U_{k/f} = 180 \text{ V}$
 $I_k = 8 \text{ mA}$
 $R_{k/f} = 150 \text{ k}\Omega$

Capacitances:

system I. system II.

$C_{g/k} = 1,6$	1,6	pF
$C_a = 0,4$	0,4	pF
$C_{g/a} = 1,7$	1,7	pF



TRANSFER CHARACTERISTICS

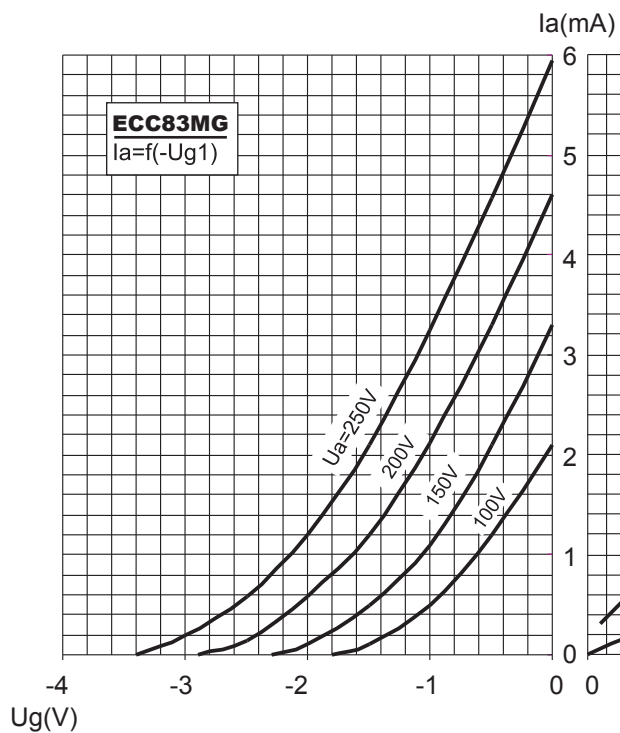
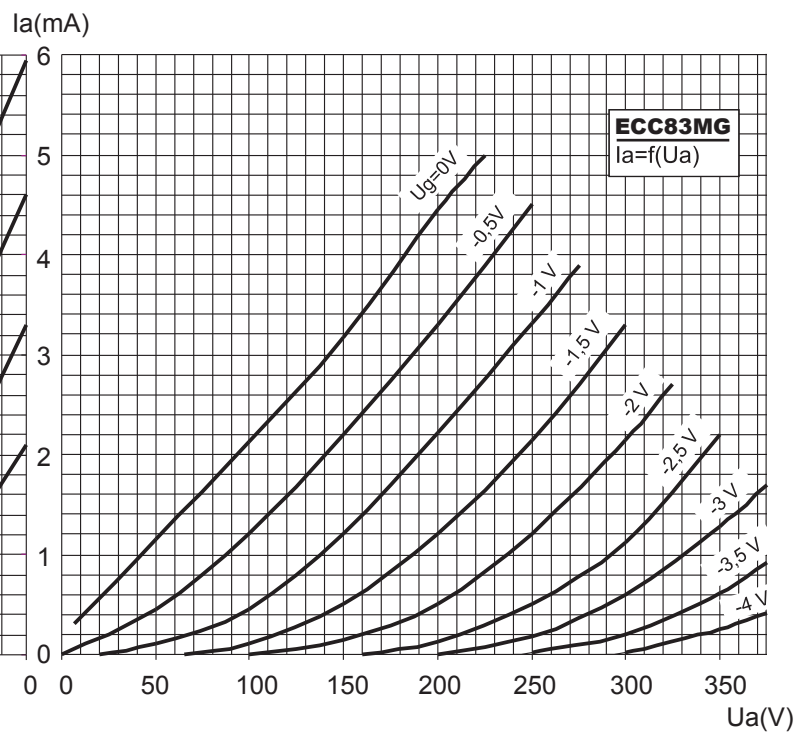


PLATE CHARACTERISTICS

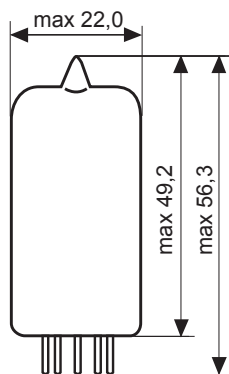
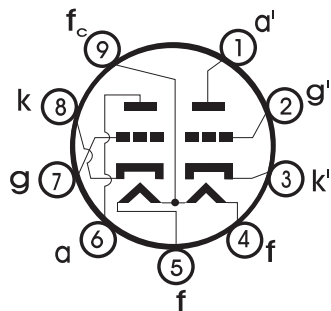


ECC832

12DW7

COMBINATED DOUBLE TRIODE

FOR SPECIAL PURPOSES



Base: NOVAL

$$U_f = 6,3/12,6 \text{ V}$$

$$I_f = 300/150 \text{ mA}$$

Typical Characteristics:

system I. system II.
(pin 6,7,8) (pin 1,2,3)

$U_a =$	250	250	V
$U_g =$	-2	-8,5	V
$I_a =$	1,2	10,5	mA
$S =$	1,6	2,2	mA/V
$R_i =$	62,5	7,7	k Ω
$\mu =$	100	17	

Limiting Values:

Capacitances:

Please, refer to specs. of
ECC 83 (for system I) or
ECC 82 (for system II)

Note: ECC823

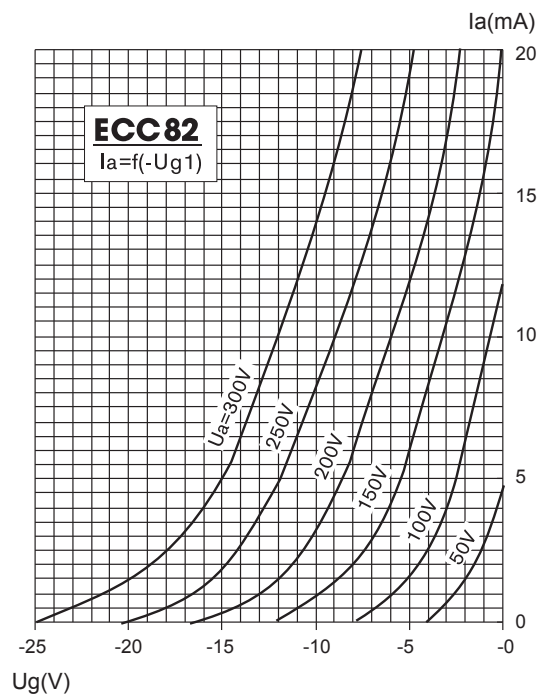
Possibility to supply this tube „on request“ of customer
with reverse pin order pin # 1, 2, 3 - ECC 83, pin # 6, 7,
8 - ECC 82. There is no international equivalent of this
tube. In JJ catalogues it is under ECC823.



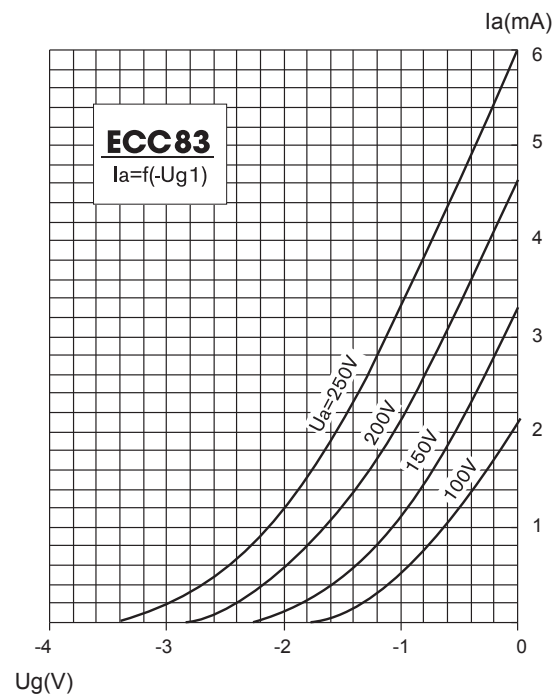
COMBINED DOUBLE TRIODE

FOR SPECIAL PURPOSES

TRANSFER CHARACTERISTICS



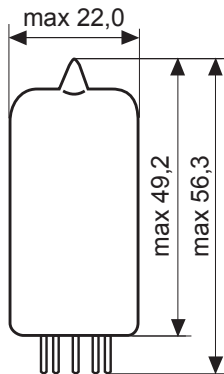
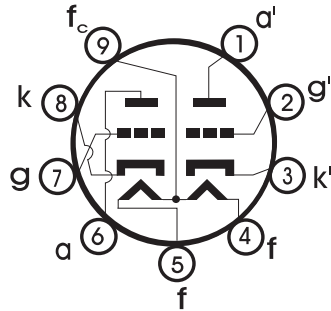
TRANSFER CHARACTERISTICS



ECC83S

12AX7, 7025

A. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 300/150 \text{ mA}$

Typical Characteristics:

$U_a = 250 \text{ V}$
 $U_g = -2 \text{ V}$
 $I_a = 1,2 \text{ mA}$
 $S = 1,6 \text{ mA/V}$
 $R_i = 62,5 \text{ k}\Omega$
 $\mu = 100$

Limiting Values:

$U_a = 300 \text{ V}$
 $W_a = 1 \text{ W}$
 $I_k = 8 \text{ mA}$
 $U_g = -50 \text{ V}$
 $R_g = 2,2 \text{ M}\Omega$
 $U_{k/f} = 180 \text{ V}$
 $R_{k/f} = 150 \text{ k}\Omega$

Capacitances:

system I. system II.

$C_{g/k} =$	1,6	1,6	pF
$C_a =$	0,33	0,33	pF
$C_{g/a} =$	1,7	1,7	pF

Operating Characteristics:

Resistance - coupled amplifier cathode grid bias

$U_b =$	250	400	250	400	250	400	V
$R_a =$	47	47	100	100	220	220	k Ω
$R_g =$	150	150	330	330	680	680	k Ω
$R_k =$	1,2	0,68	1,5	0,82	2,7	1,2	k Ω
$I_a =$	1,18	2,45	0,86	1,72	0,48	1,02	mA



TRANSFER CHARACTERISTICS

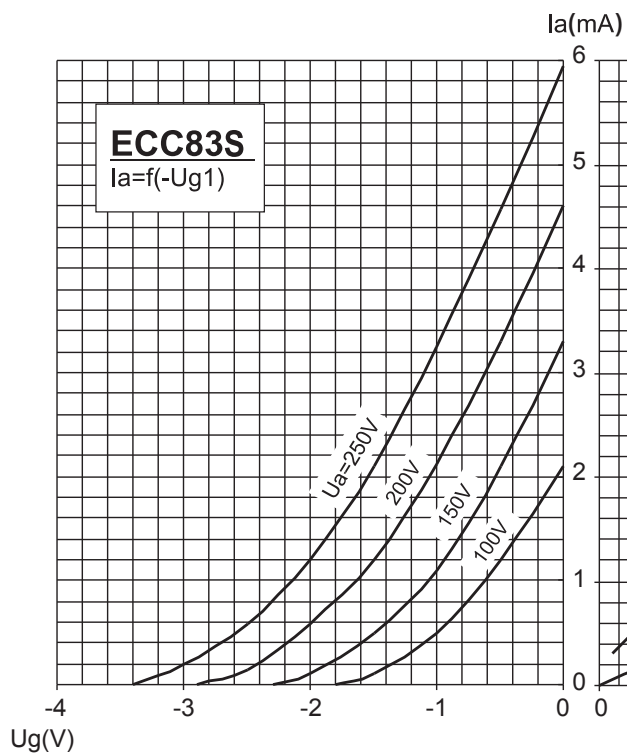
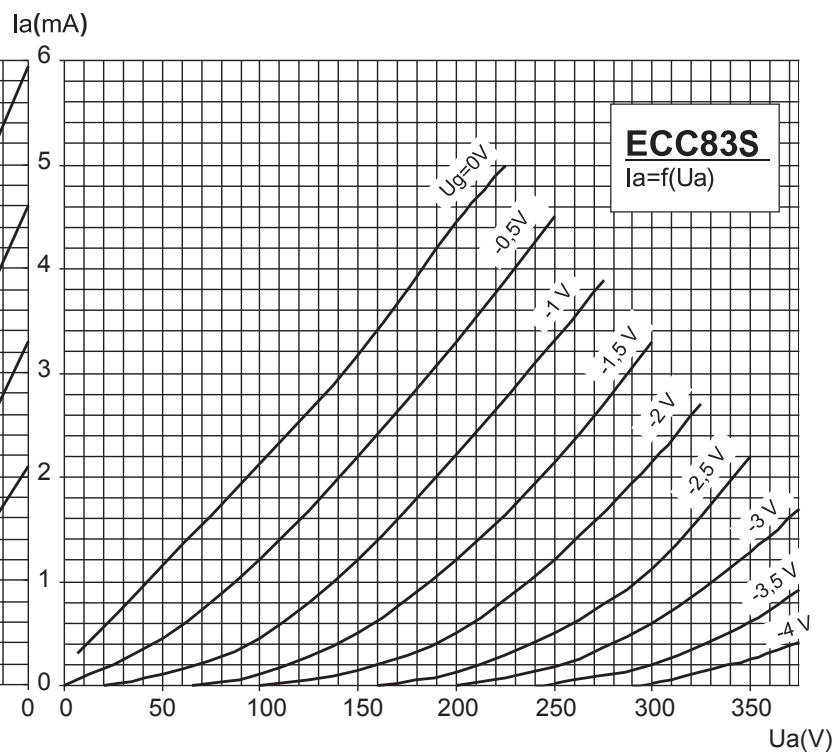
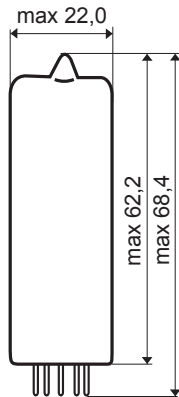
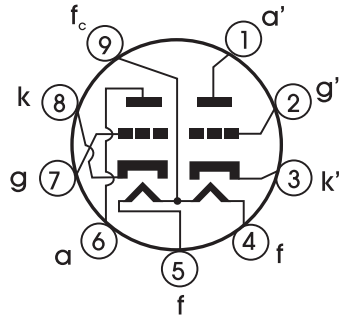


PLATE CHARACTERISTICS



ECC99

R. F. DOUBLE TRIODE



Base: NOVAL

$U_f = 6,3/12,6 \text{ V}$
 $I_f = 800/400 \text{ mA}$

Limiting Values:

$U_a = 400 \text{ V}$
 $I_k = 60 \text{ mA}$
 $U_{k/f} = 200 \text{ V}$
 $W_a = 3,5 \text{ W}$

Typical Characteristics:

$U_a = 150 \text{ V}$
 $U_g = -4 \text{ V}$
 $I_a = 18 \text{ mA}$
 $S = 9,5 \text{ mA/V}$
 $R_i = 2,3 \text{ k}\Omega$
 $\mu = 22$

Capacitances:

system I. system II.

$C_{g/k} = 5,8$	5,8	pF
$C_a = 0,91$	0,81	pF
$C_{g/a} = 5,1$	5,1	pF

Recommended use:

Driver of power triodes such as 300 B, 2A3..., Output stage headphone amplifiers, preamplifiers, power stage little P-P triode amplifiers (10W-4xECC99) and parallel voltage power supplies. Can be used instead of 5687, E182CC, 6840, 6BL7.

Note: Outlets on some of these types could have different set-up.



TRANSFER CHARACTERISTICS

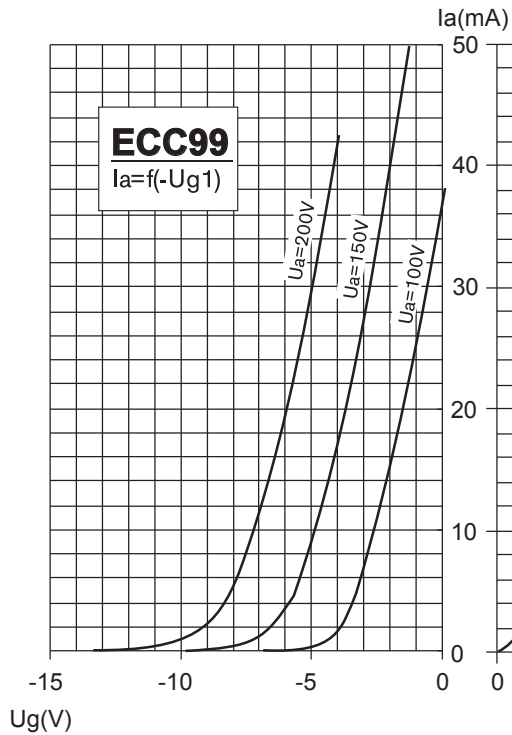
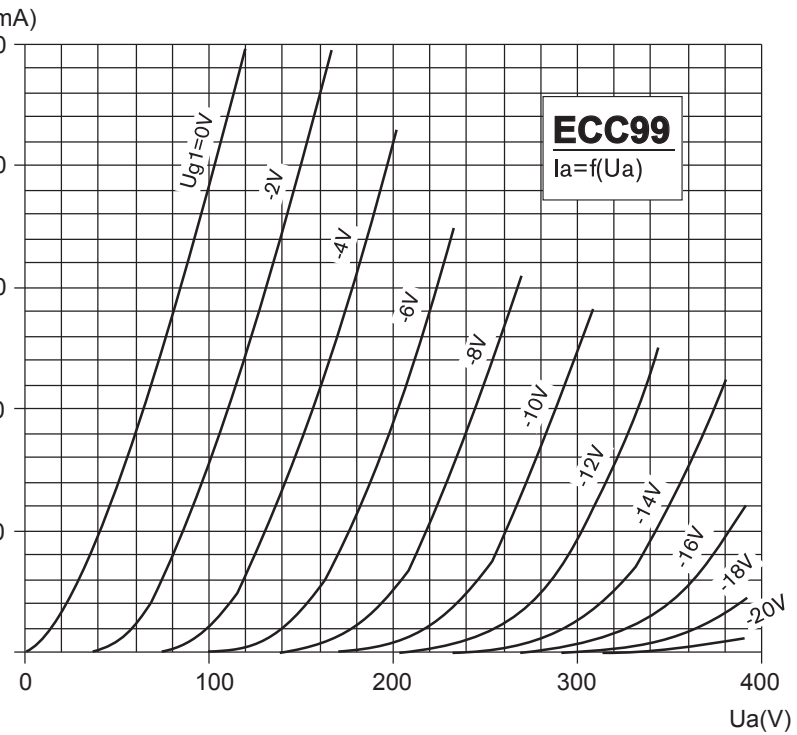


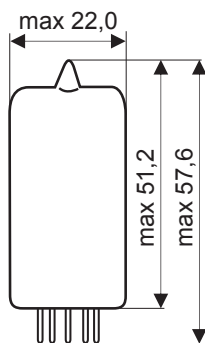
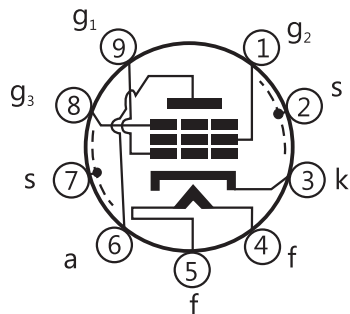
PLATE CHARACTERISTICS



EF806S

PENTODE

INTENDED FOR USE AS A. F. AMPLIFIER



Base: NOVAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 200 \text{ mA}$$

Capacitances:

$$C_{g1(a)} = 3,8 \text{ pF}$$

$$C_{a(g^1)} = 5,1 \text{ pF}$$

$$C_{ag^1} = \text{max. } 0,05 \text{ pF}$$

$$C_{g^1f} = \text{max. } 0,0025 \text{ pF}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g3} = 0 \text{ V}$$

$$U_{g2} = 140 \text{ V}$$

$$U_{g1} = -2,2 \text{ V}$$

$$I_a = 3,0 \text{ mA}$$

$$I_{g2} = 0,6 \text{ mA}$$

$$S = 2,2 \text{ mA/V}$$

$$R_i = 2,5 \text{ M}\Omega$$

$$\mu_{g2/g1} = 38$$

Limiting Values:

$$U_{a0} = \text{max } 550 \text{ V}$$

$$U_a = \text{max } 300 \text{ V}$$

$$W_a = \text{max } 1,0 \text{ W}$$

$$U_{g20} = \text{max } 550 \text{ V}$$

$$U_{g2} = \text{max } 200 \text{ V}$$

$$W_{g2} = \text{max } 0,2 \text{ W}$$

$$\text{if } W_a < 0,2 \text{ W}$$

$$R_{g1} = \text{max. } 10 \text{ M}\Omega$$

$$\text{if } W_a > 0,2 \text{ W}$$

$$R_{g^1} = \text{max. } 3 \text{ M}\Omega$$

with grid current biasing

$$R_{g^1} = \text{max. } 22 \text{ M}\Omega$$

$$I_k = \text{max. } 6 \text{ mA}$$

$$U_{k/f} = \pm 100 \text{ V}$$



TRANSFER CHARACTERISTICS

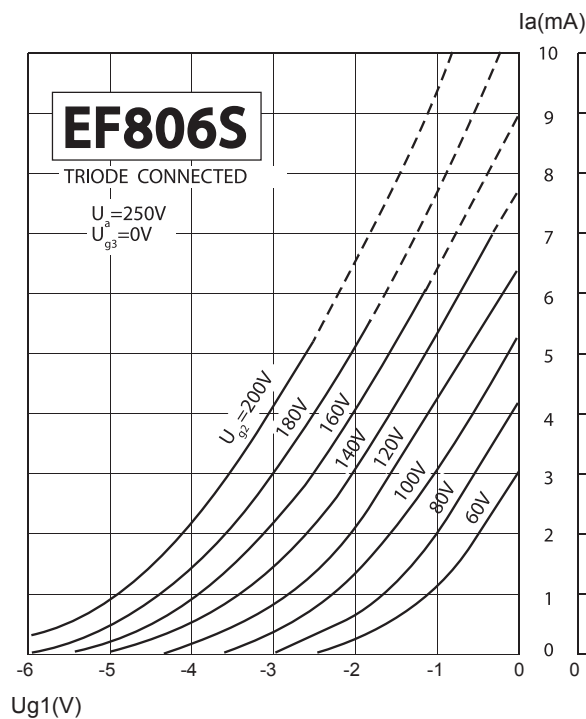
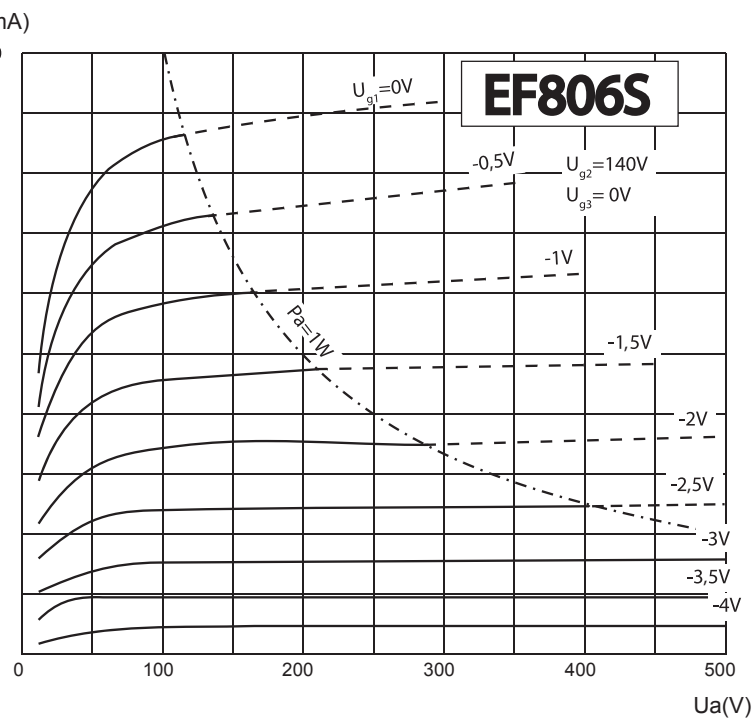
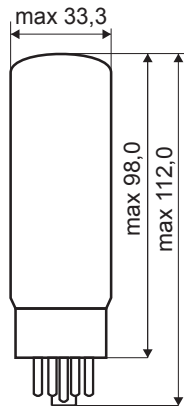
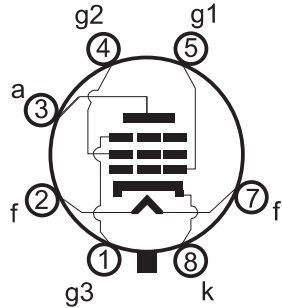


PLATE CHARACTERISTICS



EL34, E34L

A. F. OUTPUT PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,5 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g3} = 0 \text{ V}$$

$$U_{g2} = 265 \text{ V}$$

$$U_{g1} = \text{from } -10 \text{ to } -13,5 \text{ V}$$

(for EL34)

$$\text{from } -13,5 \text{ to } -16,5 \text{ V}$$

(for E34L)

$$I_a = 100 \text{ mA}$$

$$I_{g2} = 14,9 \text{ mA}$$

$$S = 11 \text{ mA/V}$$

$$R_i = 15 \text{ k}\Omega$$

$$\mu_{g2/g1} = 11$$

Limiting Values:

$$U_{a0} = 2000 \text{ V}$$

$$U_a = 800 \text{ V}$$

$$W_{a(\max)} = 25 \text{ W}$$

$$U_{g20} = 800 \text{ V}$$

$$U_{g2} = 450 \text{ V}$$

$$W_{g2(\max)} = 8 \text{ W}$$

$$I_k = 150 \text{ mA}$$

$$U_{k/f} = 100 \text{ V}$$

$$R_{k/f} = 20 \text{ k}\Omega$$

$$V$$

Capacitances:

$$C_{g1} = 15,5 \text{ pF}$$

$$C_a = 10 \text{ pF}$$

$$C_{a/g1} = 1,3 \text{ pF}$$

Red/Blue versions available



TRANSFER CHARACTERISTICS

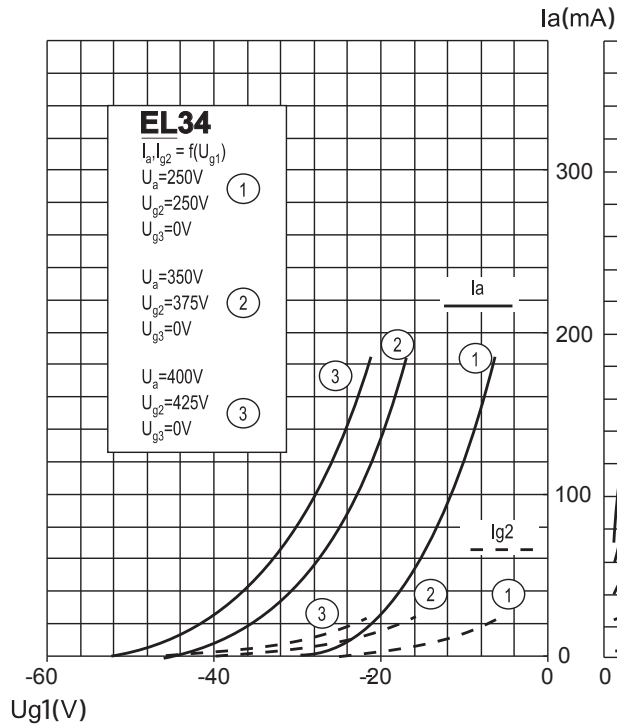
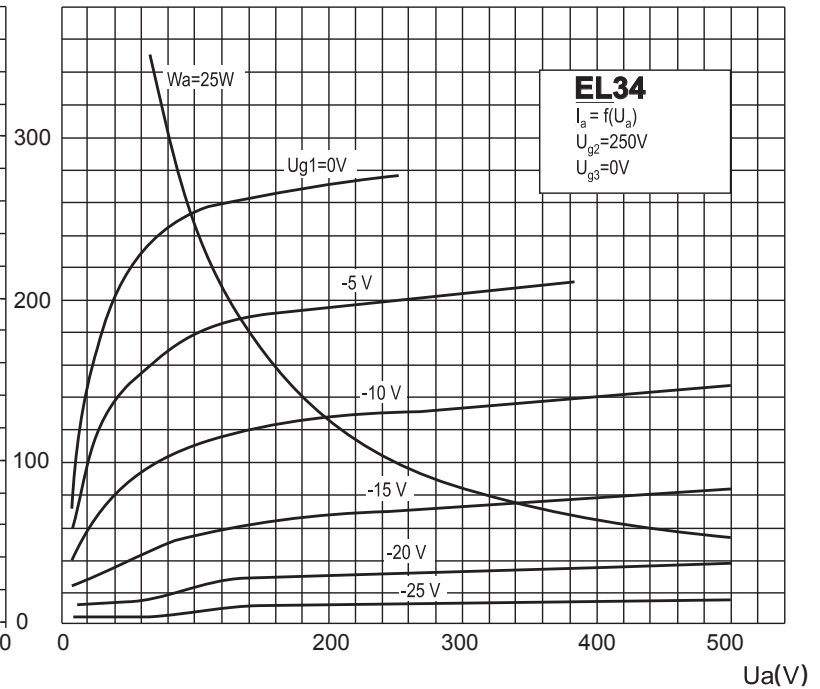
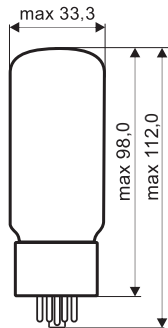
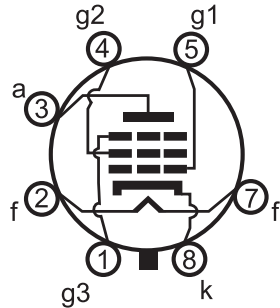


PLATE CHARACTERISTICS



EL34 II

A. F. OUTPUT PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,5 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g3} = 0 \text{ V}$$

$$U_{g2} = 265 \text{ V}$$

$$U_{g1} = -13,5 \text{ V}$$

$$I_a = 100 \text{ mA}$$

$$I_{g2} = 14,9 \text{ mA}$$

$$S = 11 \text{ mA/V}$$

$$R_i = 15 \text{ k}\Omega$$

$$\mu_{g2/g1} = 11$$

Limiting Values:

$$U_{a0} = 2000 \text{ V}$$

$$U_a = 800 \text{ V}$$

$$W_{a(max)} = 25 \text{ W}$$

$$U_{g20} = 800 \text{ V}$$

$$U_{g2} = 450 \text{ V}$$

$$W_{g2(max)} = 8 \text{ W}$$

$$I_k = 150 \text{ mA}$$

$$U_{k/f} = 100 \text{ V}$$

$$R_{k/f} = 20 \text{ k}\Omega$$

Capacitances:

$$C_{g1} = 15,5 \text{ pF}$$

$$C_a = 10 \text{ pF}$$

$$C_{a/g1} = 1,3 \text{ pF}$$



TRANSFER CHARACTERISTICS

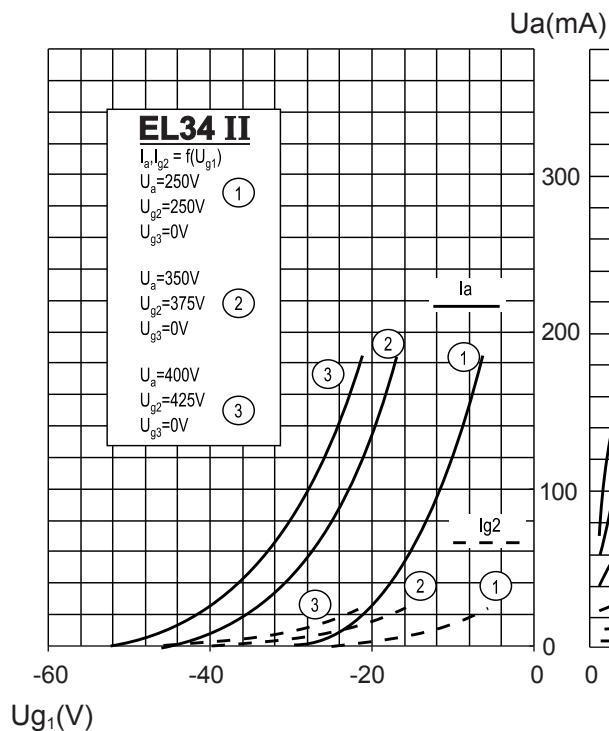
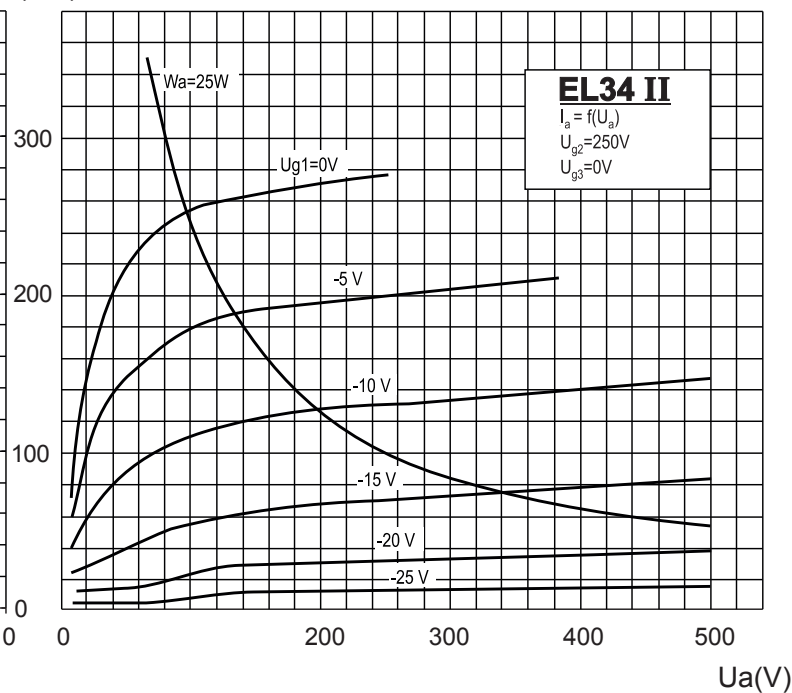
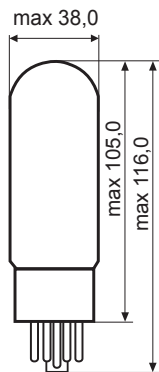
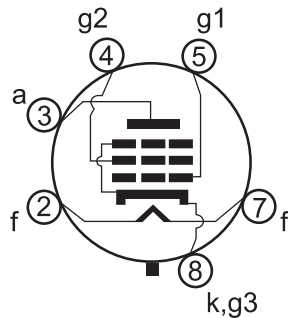


PLATE CHARACTERISTICS



EL509S

OUTPUT POWER BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 2 \text{ A}$$

Typical Characteristics:

$$U_a = 160 \text{ V}$$

$$U_{g2} = 160 \text{ V}$$

$$U_{g1} = -30 \text{ V}$$

$$I_a = 200 \text{ mA}$$

$$I_{g2} = 10 \text{ mA}$$

SHORT TERM MEASURING (MAX 3 SEC.)

$$I = \min 500 \text{ mA a.c.}$$

$$U_{sat} = 30 \text{ V a.c.}$$

Limiting Values:

$$U_a = 700 \text{ V}$$

$$U_{g2} = 700 \text{ V}$$

$$W_{g2} = 9 \text{ W}$$

$$I_k = 500 \text{ mA}$$

$$U_{kf} = 150 \text{ V}$$

$$W_{a+g2} = \max. 42 \text{ W}$$

Capacitances:

$$C_{a/g1} = 3 \text{ pF}$$



TRANSFER CHARACTERISTICS

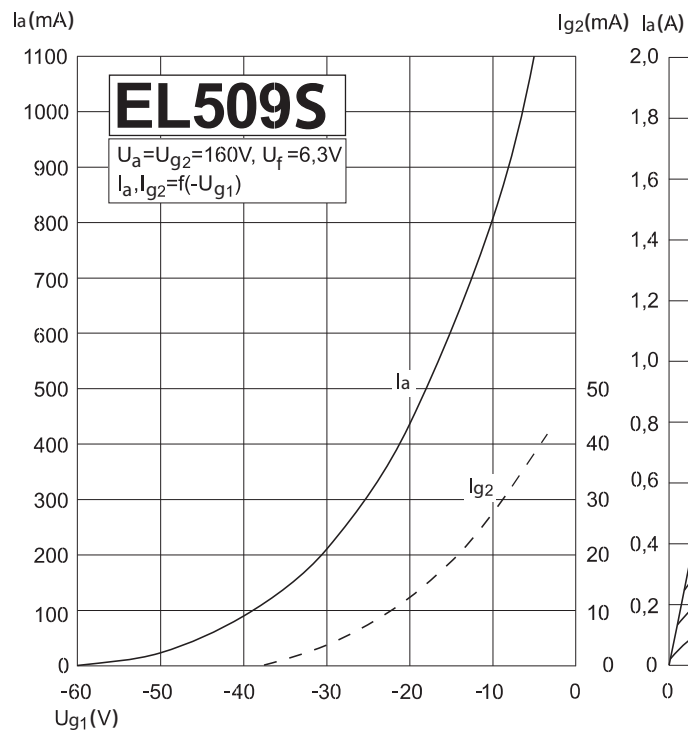
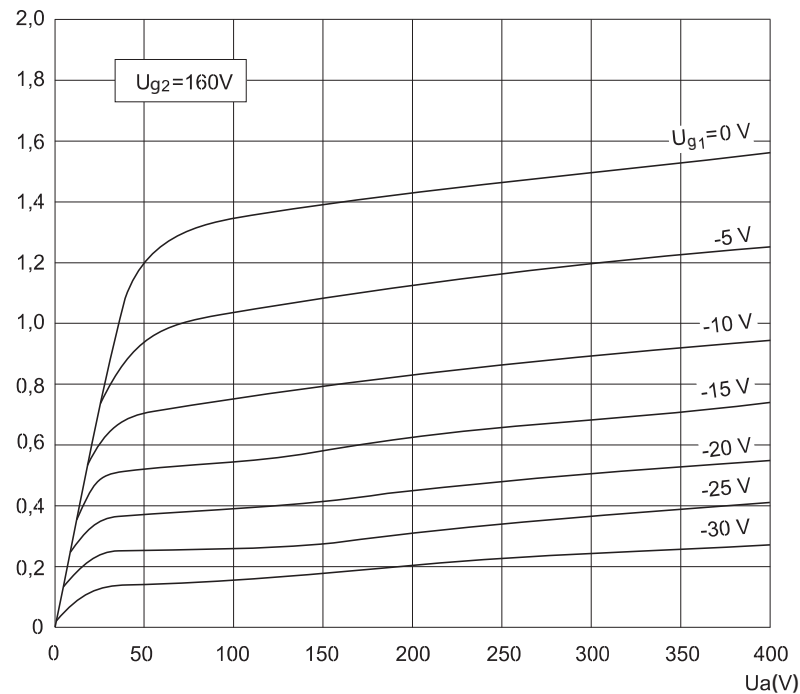


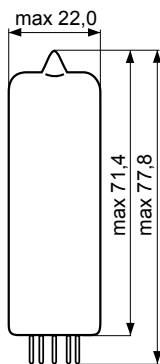
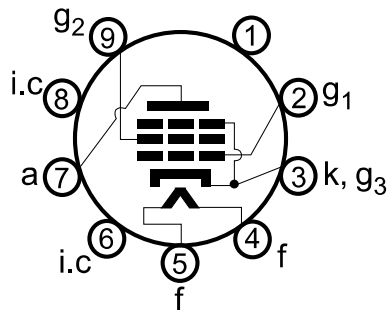
PLATE CHARACTERISTICS



EL84

6BQ5

A. F. OUTPUT PENTODE



Base: NOVAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 0,760 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = -7,3 \text{ V}$$

$$I_a = 48 \text{ mA}$$

$$I_{g2} = 5,5 \text{ mA}$$

$$S = 11,3 \text{ mA/V}$$

$$R_i = 40 \text{ k}\Omega$$

$$\mu_{g1/g2} = 19$$

Class A₁ Amp.:

$$U_a = 250 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$R_k = 135 \text{ }\Omega$$

$$I_a = 48 \text{ mA}$$

$$I_{g2} = 5,5 \text{ mA}$$

$$R_a = 5,2 \text{ k}\Omega$$

$$U_{g1\text{eff}}(50\text{mW}) = 0,3 \text{ V}$$

$$U_{g1\text{eff}}(N) = 4,3 \text{ V}$$

$$N(10\%)^1 = 5,7 \text{ W}$$

$$N^2 = 6 \text{ W}$$

Limiting Values:

$$U_a = 300 \text{ V}$$

$$W_a = 12 \text{ W}$$

$$U_{g2} = 300 \text{ V}$$

$$W_{g2} = 2 \text{ W}$$

$$U_{g1} = -100 \text{ V}$$

$$I_k = 65 \text{ mA}$$

$$R_{g1} = 1 \text{ M}\Omega$$

for automatic bias

$$R_{g1} = 0,3 \text{ M}\Omega$$

for fixed bias

$$U_{k/f} = 100 \text{ V}$$

Capacitances:

$$C_{g/k} = 10 \text{ pF}$$

$$C_a = 5,1 \text{ pF}$$

$$C_{g/a} = 0,6 \text{ pF}$$

$$C_{g1f} = 0,15 \text{ pF}$$



¹⁾ U_{g1} fixed grid bias

²⁾ $I_{g1} = 0,3 \text{ }\mu\text{A}$

TRANSFER CHARACTERISTICS

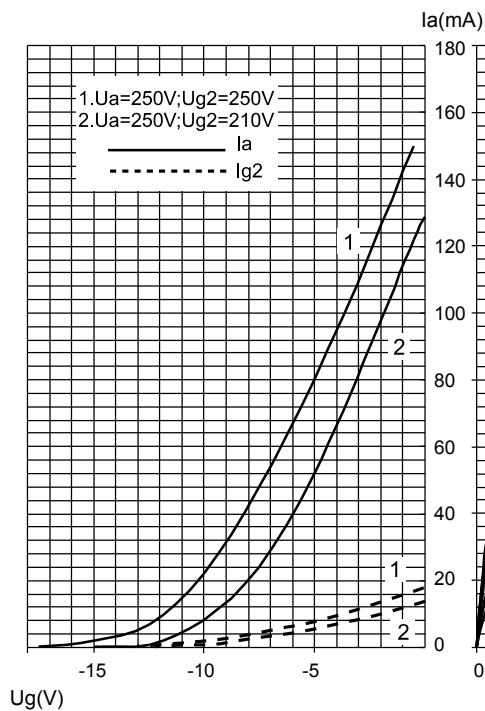
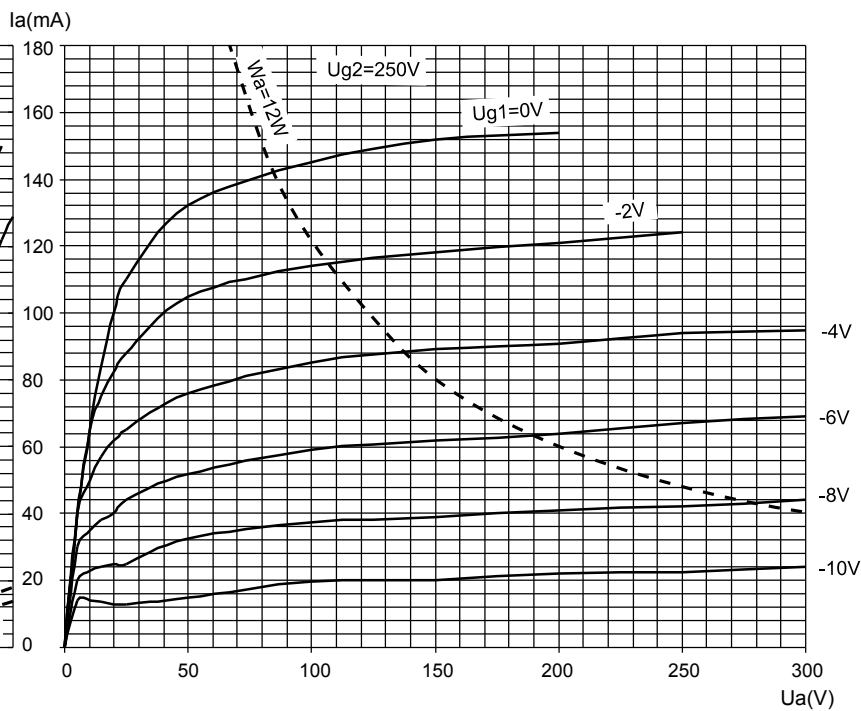
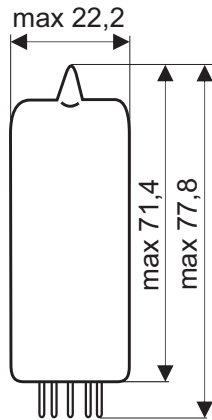
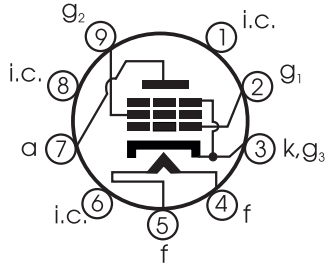


PLATE CHARACTERISTICS



EL844

A. F. OUTPUT PENTODE



Base: NOVAL

$$U_f = 6,3 \text{ V}$$
$$I_f = 0,760 \text{ A}$$

Typical Characteristics: Class A1 Amp.

$$U_a = 250 \text{ V}$$
$$U_{g2} = 250 \text{ V}$$
$$U_{g1} = -7,3 \text{ V}$$
$$I_a = 10 \text{ mA}$$
$$I_{g2} = 1,5 \text{ mA}$$
$$S = 6,5 \text{ mA/V}$$
$$R_i = 0,1 \text{ M}\Omega$$

Limiting Values:

$$U_a = 300 \text{ V}$$
$$U_{g2} = 300 \text{ V}$$
$$U_{g1} = -100 \text{ V}$$
$$W_a = 9 \text{ W}$$
$$W_{g2} = 2 \text{ W}$$
$$I_k = 60 \text{ mA}$$
$$U_{k/f} = 100 \text{ V}$$
$$R_{g1} = 1 \text{ M}\Omega \text{ for automatic bias}$$
$$R_{g1} = 0,5 \text{ M}\Omega \text{ for fixed bias}$$

Capacitances:

$$C_a = 6,6 \text{ pF}$$
$$C_{g1} = 10,8 \text{ pF}$$
$$C_{g1/a} = 0,1 \text{ pF}$$
$$C_{g1/f} = 0,15 \text{ pF}$$



TRANSFER CHARACTERISTICS

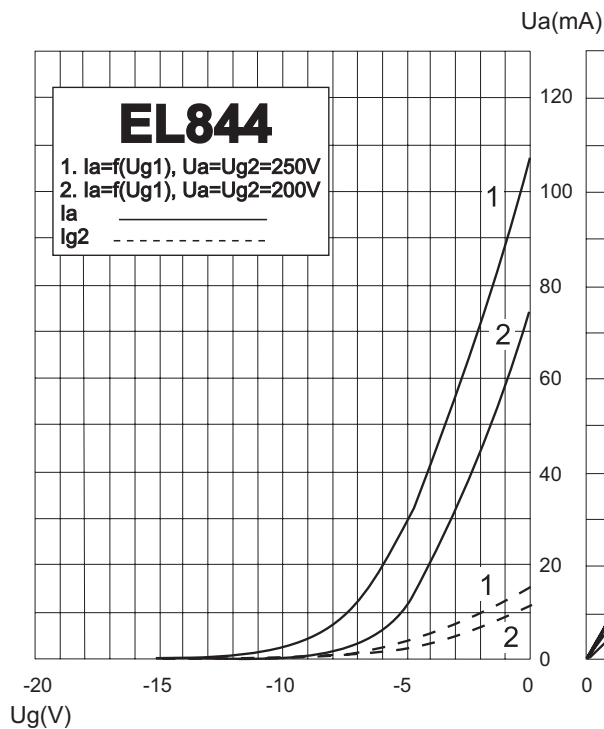
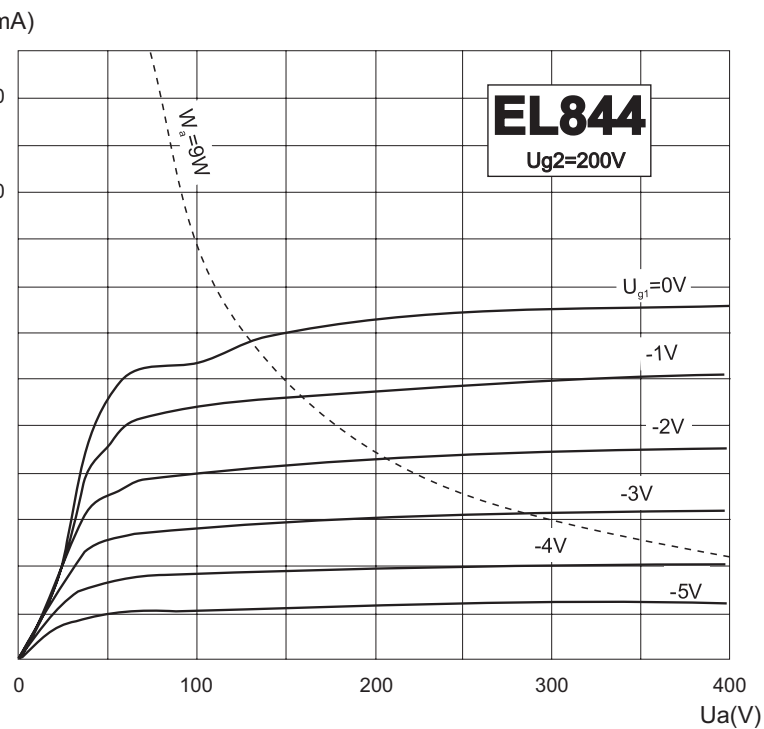
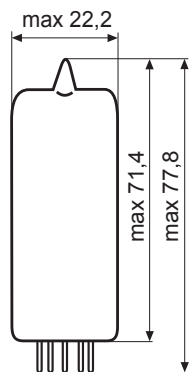
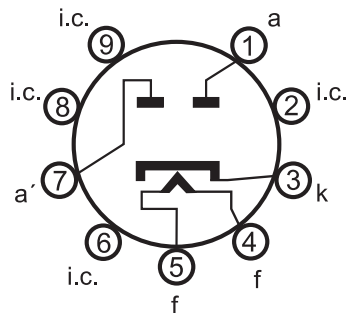


PLATE CHARACTERISTICS



EZ81

DOUBLE ANODE RECTIFYING TUBE



Base: NOVAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1 \text{ A}$$

Typical Characteristics:

Capacitor Input

$$f = 50 \text{ Hz}$$

$$U_{tr \text{ eff}} = 2 \times 250 \quad 2 \times 350 \quad 2 \times 450 \quad \text{V}$$

$$R_t = 2 \times 150 \quad 2 \times 230 \quad 2 \times 310 \quad \Omega$$

$$I_{d.c.} = 160 \quad 150 \quad 100 \quad \text{mA}$$

$$C = 50 \quad 50 \quad 50 \quad \mu\text{F}$$

$$U_{d.c.} = 245 \quad 352 \quad 497 \quad \text{V}$$

Choke Input

$$f = 50 \text{ Hz}$$

$$U_{tr \text{ eff}} = 2 \times 250 \quad 2 \times 350 \quad 2 \times 450 \quad \text{V}$$

$$I_{d.c.} = 180 \quad 180 \quad 150 \quad \text{mA}$$

$$L = 10 \quad 10 \quad 10 \quad \text{H}$$

$$U_{d.c.} = 199 \quad 288 \quad 378 \quad \text{V}$$

Limiting Values:

$$U_{a \text{ invp}} = 1300 \quad \text{V}$$

$$I_p = 500 \quad \text{mA}$$

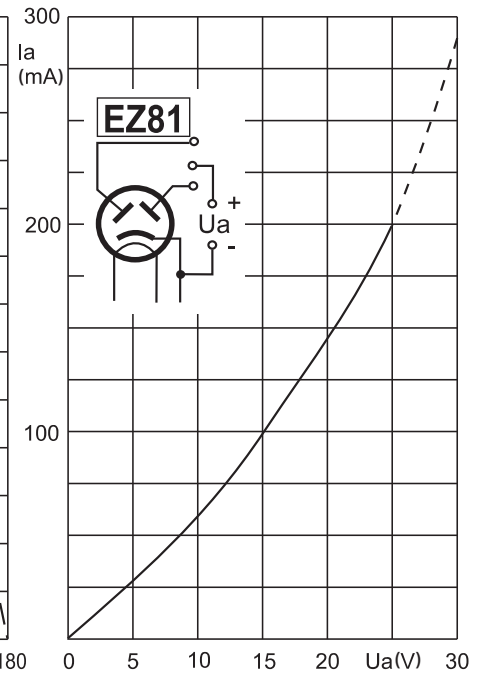
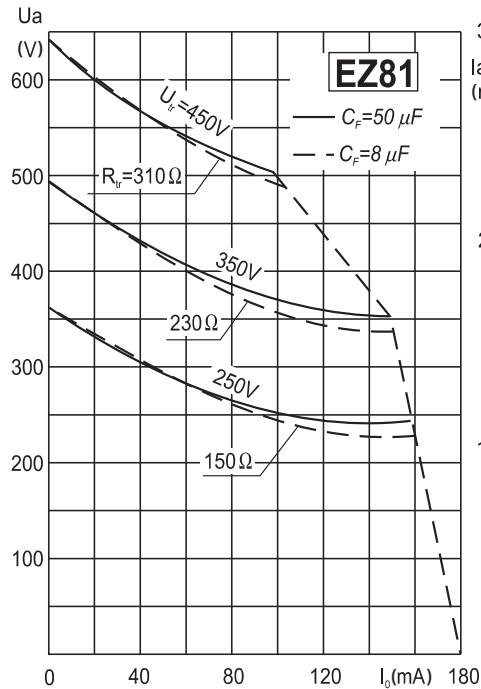
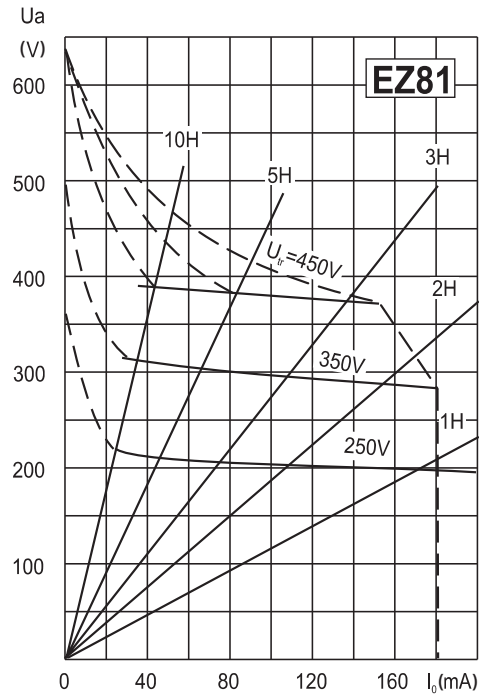
$$U_{kf} = 500 \quad \text{V}$$

$$C_{\text{filt max.}} = 50 \quad \mu\text{F}$$

$$L_{\text{min.}} = 1 \quad \text{H}$$

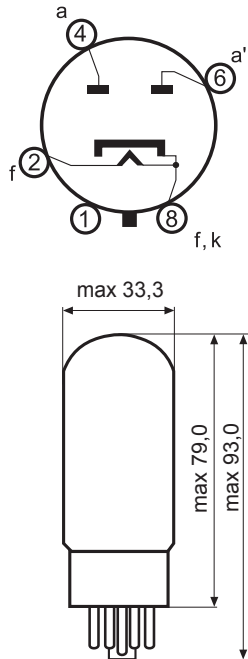


DOUBLE ANODE RECTIFYING TUBE



GZ34S

DOUBLE ANODE RECTIFYING TUBE



Base: OCTAL

$$U_f = 5 \text{ V}$$

$$I_f = 1,9 \text{ A}$$

Typical Characteristics:

Capacitor Input

$f = 50 \text{ Hz}$				
$U_{tr \text{ eff}} = 2 \times 300$	2×400	2×500	2×550	V
$I_{D.C.} = 250$	250	200	160	mA
$C = 60$	60	60	60	μF
$R_t = 2 \times 75$	2×125	2×175	2×200	Ω
$U_{D.C.} = 330$	430	560	640	V

Choke Input

$f = 50 \text{ Hz}$				
$U_{tr \text{ eff}} = 2 \times 300$	2×400	2×500	2×550	V
$I_{D.C.} = 250$	250	250	225	mA
$L = 10$	10	10	10	H
$R_t = 0$	0	0	0	Ω
$U_{D.C.} = 250$	330	420	465	V

Limiting Values:

Capacitor Input

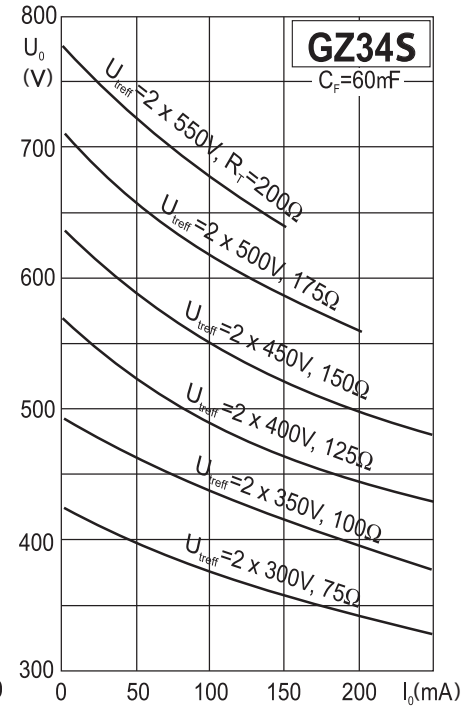
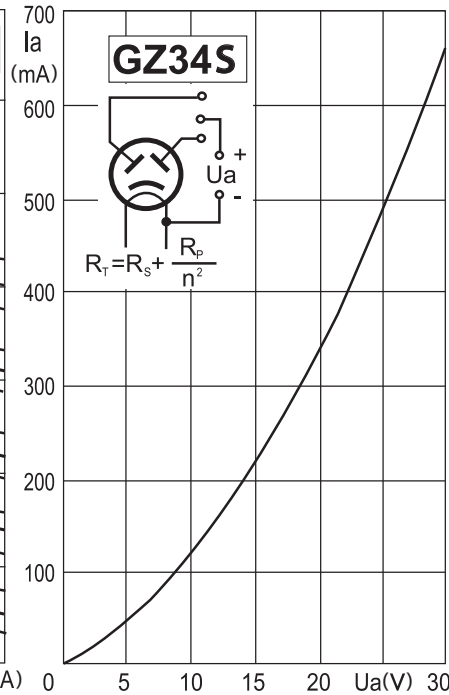
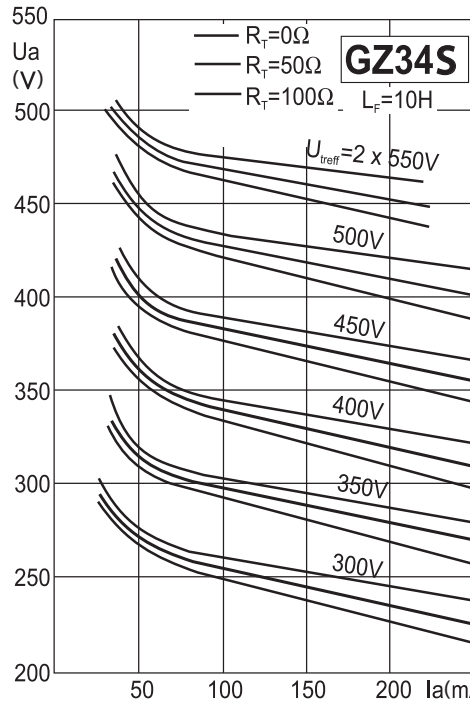
$f = 50$	Hz
$U_{a \text{ invp}} = 1500$	V
$I_p = 750$	mA
$C = 60$	μF
$U_{tr \text{ eff}} = 2 \times 300$	2×550 V
$I_{D.C.} = 250$	160 mA
$R_t = 2 \times 50$	2×175 Ω

Choke Input

$f = 50$	Hz
$U_{a \text{ invp}} = 1500$	V
$I_p = 750$	mA
$U_{tr \text{ eff}} = 2 \times 300$	2×550 V
$I_{D.C.} = 250$	225 mA

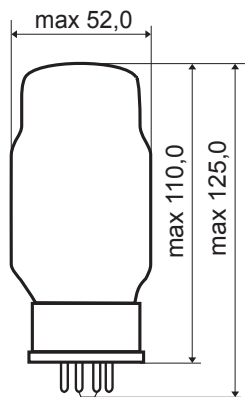
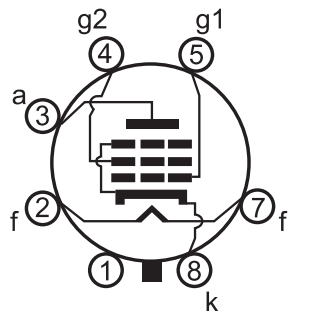


DOUBLE ANODE RECTIFYING TUBE



KT66

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,3 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = -15 \text{ V}$$

$$I_a = 85 \text{ mA}$$

$$I_{g2} = \text{max. } 7 \text{ mA}$$

$$S = 6 \text{ mA/V}$$

$$R_i = 22,5 \text{ k}\Omega$$

Triode Connected

$$U_{a,g2} = 250 \text{ V}$$

$$U_{g1} = -15 \text{ V}$$

$$R_i = 1,3 \text{ k}\Omega$$

Capacitances:

$$C_{g1} = 16 \text{ pF}$$

$$C_a = 10 \text{ pF}$$

$$C_{a/g1} = 2,3 \text{ pF}$$

Limiting Values:

$$U_a = 550 \text{ V}$$

$$U_{g2} = 550 \text{ V}$$

$$U_{g1} = -200 \text{ V}$$

$$W_a = 25 \text{ W}$$

$$W_{g2} = 3,5 \text{ W}$$

$$W_{a,g2} = 27 \text{ W}$$

$$I_k = 150 \text{ mA}$$

$$U_{k/f} = 200 \text{ V}$$

$$R_{g1-k}(\text{cathode bias})$$

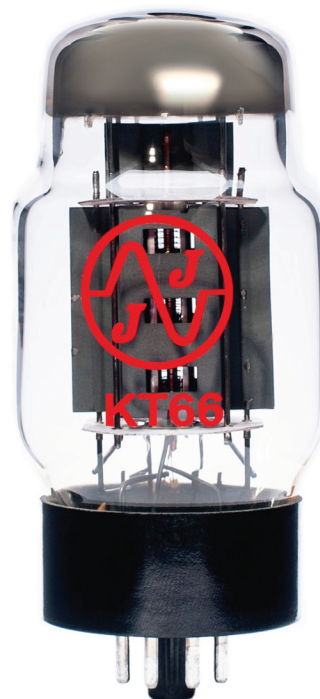
$$W_{a+g2} \leq 27 \text{ W } 1 \text{ M}\Omega$$

$$W_{a+g2} > 27 \text{ W } 500 \text{ k}\Omega$$

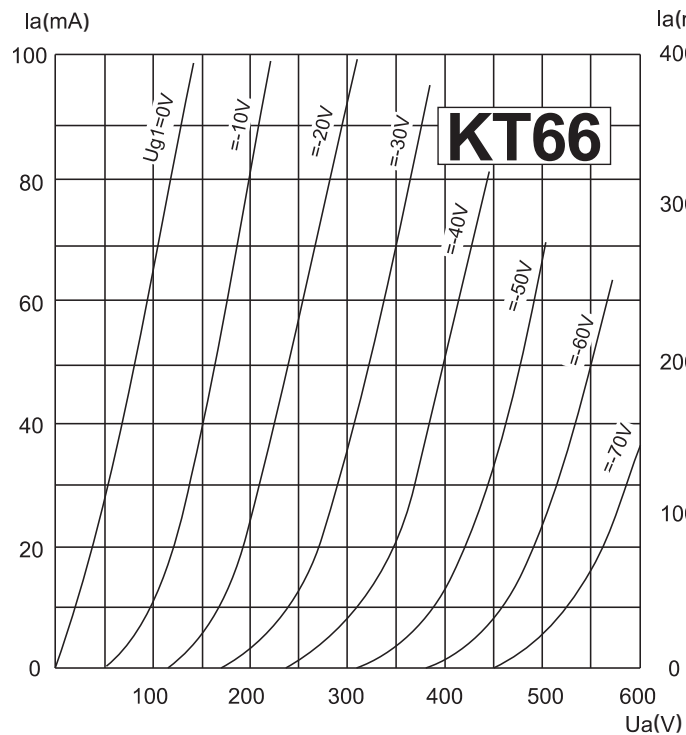
$$R_{g1-k}(\text{fixed bias})$$

$$W_{a-g2} \leq 27 \text{ W } 220 \text{ k}\Omega$$

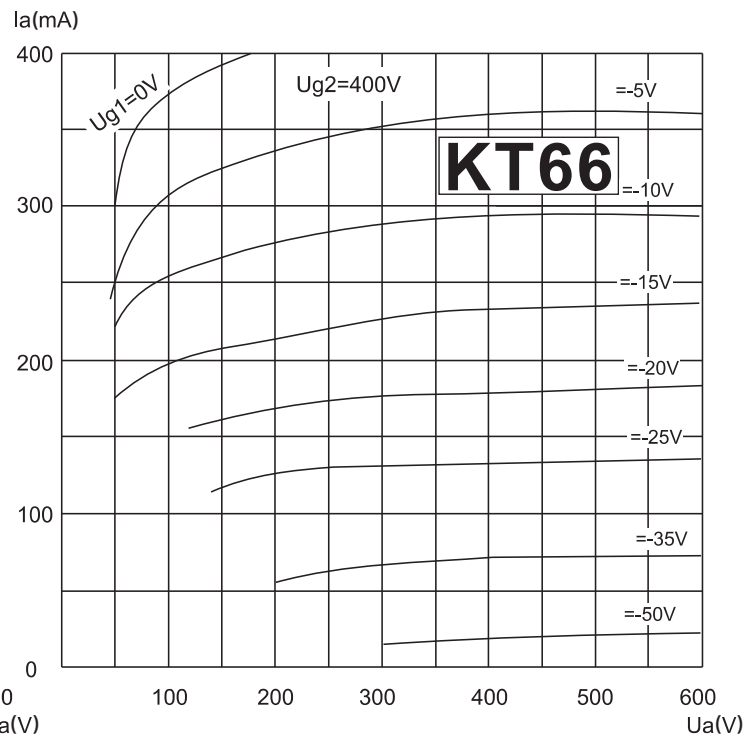
$$W_{a+g2} > 27 \text{ W } 100 \text{ k}\Omega$$



TRIODE CHARACTERISTICS

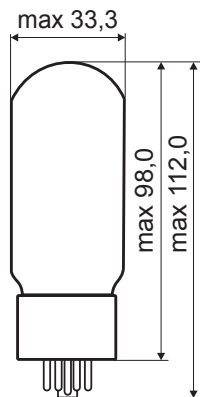
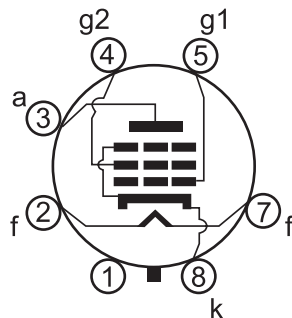


PENTODE CHARACTERISTICS



KT77

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,4 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$U_{g1} = -13,5 \text{ V}$$

$$I_a = 100 \text{ mA}$$

$$I_{g2} = 10 \text{ mA}$$

$$S = 10,5 \text{ mA/V}$$

$$R_a = 23 \text{ k}\Omega$$

$$\mu = 11,5$$

Capacitances:

$$C_{g1} = 16,5 \text{ pF}$$

$$C_a = 9 \text{ pF}$$

$$C_{a/g1} = 1 \text{ pF}$$

Limiting Values:

$$U_a = 800 \text{ V}$$

$$U_{g2} = 600 \text{ V}$$

$$U_{a,g2} = 600 \text{ V}$$

$$W_a = 25 \text{ W}$$

$$W_{g2} = 6 \text{ W}$$

$$W_{a,g2} = 28 \text{ W}$$

$$I_k = 180 \text{ mA}$$

$$U_{k/f} = 150 \text{ V}$$

$$U_{g1} = -200 \text{ V}$$



TRANSFER CHARACTERISTICS

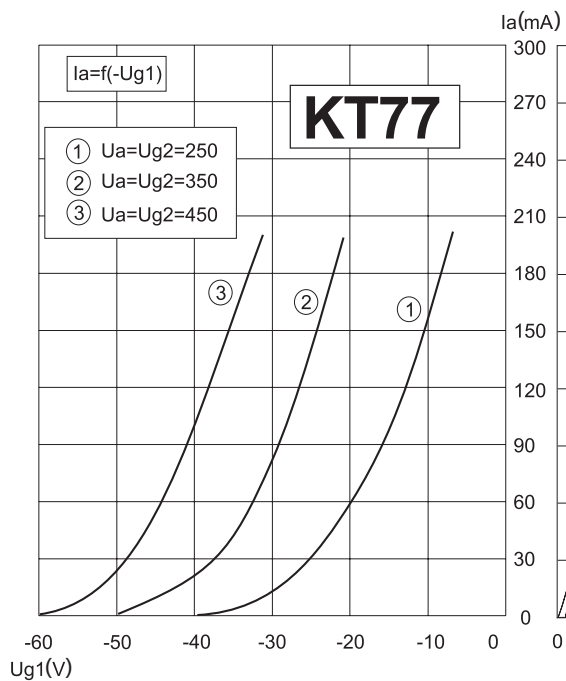
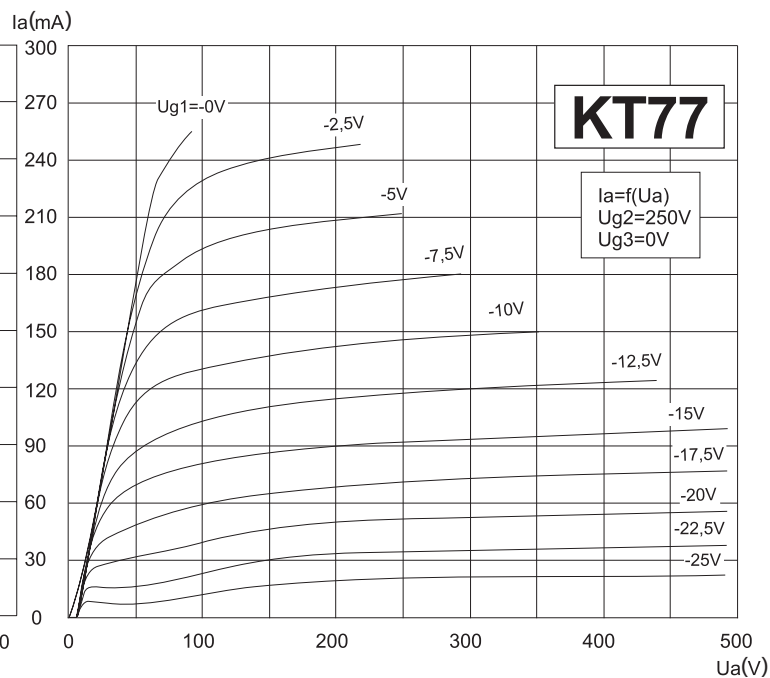
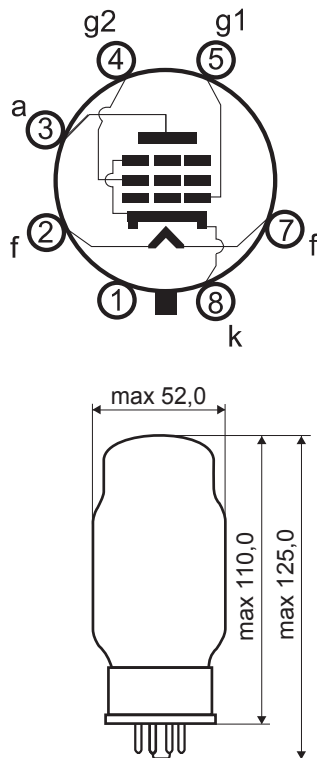


PLATE CHARACTERISTICS



KT88

A. F. BEAM PENTODE



Base: OCTAL

$$U_f = 6,3 \text{ V}$$

$$I_f = 1,6 \text{ A}$$

Typical Characteristics:

$$U_a = 250 \text{ V}$$

$$U_{g2} = 250 \text{ V}$$

$$I_a = 140 \text{ mA}$$

$$I_{g2} = \text{max. } 7 \text{ mA}$$

$$U_{g1} = -15 \text{ V}$$

$$S = 11,5 \text{ mA/V}$$

$$R_i = 12 \text{ k}\Omega$$

$$\mu_{g1-g2} = 8$$

Triode Connected

$$U_{a, g2} = 250 \text{ V}$$

$$I_{a+g2} = 147 \text{ mA}$$

$$U_{g1} = -15 \text{ V}$$

$$S = 12 \text{ mA/V}$$

$$R_i = 670 \text{ }\Omega$$

$$\mu = 8$$

Limiting Values:

$$U_a = 800 \text{ V}$$

$$U_{g2} = 600 \text{ V}$$

$$U_{a, g2} = 600 \text{ V}$$

$$U_{g1} = -200 \text{ V}$$

$$W_a = 42 \text{ W}$$

$$W_{g2} = 8 \text{ W}$$

$$W_{a+g2} = 46 \text{ W}$$

$$I_k = 230 \text{ mA}$$

$$U_{k/f} = 250 \text{ V}$$

R_{g1-k} (cathode bias)

$$W_{a+g2} \leq 35 \text{ W} \quad 470 \text{ k}\Omega$$

$$W_{a+g2} > 35 \text{ W} \quad 270 \text{ k}\Omega$$

R_{g1-k} (fixed bias)

$$W_{a+g2} \leq 35 \text{ W} \quad 220 \text{ k}\Omega$$

$$W_{a+g2} > 35 \text{ W} \quad 100 \text{ k}\Omega$$

Capacitances:

$$C_{g1} = 16,5 \text{ pF}$$

$$C_a = 10 \text{ pF}$$

$$C_{g1-a} = 2,3 \text{ pF}$$



Red/Blue versions available

ULTRA - LINEAR CONNECTION - 40% TAPS

PLATE CHARACTERISTICS

