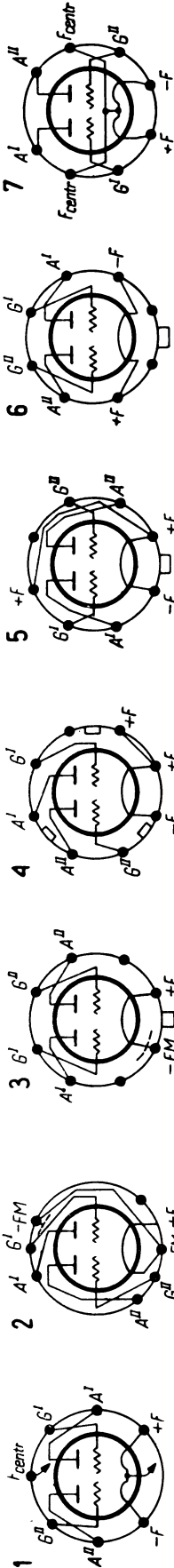


T.			U_f V	I_f A	Cl.	U_a V	U_g V	I_a mA	I_g mA	S mA/V	R_i k Ω	μ V/V	R_o k Ω	P_o W	P_a W
DCC 90	eur	1	1,4/2,8	0,22/0,11	$\left\{ \begin{array}{l} \text{stat.} \\ \text{Ctgr} \\ B(\approx) \\ \text{stat.} \end{array} \right\}$	90 135 135 135	- 2,5 - 30 - 20	3,7 15 15 $\times$ 2 5	2,5 2,5 $\times$ 2	1,8 (f = 40 MHz; $U_g \approx 45$ V $\times$ 2) maximum	8,3	15	1		0,5
DDD 11	eur	2	1,2	0,1	$\left\{ \begin{array}{l} \text{stat.} \\ B \end{array} \right\}$	90	0	4,3	1	1	16	16			
DDD 25	eur	3	1,2	0,1		120	- 4,5	1,5 $\times$ 2			20		14	1,4	
DDD 41 W	Lor	4	1,2	0,1											
LV 12	Tlf	5	1,2	0,1	B	45	- 2,75	0,6 $\times$ 2	0,65	0,65	16,2	11	18	0,14	0,4
1 G 6-G	amer	6	1,4	0,1	$\left\{ \begin{array}{l} A1 \\ B \end{array} \right\}$	90 90	0 0	1 (2 $\div$ 11) $\times$ 2	0,82	0,82	40	33	12	0,35	
1 H 3 C	CCCP	6	1,2	0,12	$\left\{ \begin{array}{l} A1 \end{array} \right\}$	120 150	- 5,5	2,5	0,8	0,8	13,7	11	7	0,4	1
2 B 5	TS	7	1,2/2,4	0,26/0,13	A1	90	- 1	2,6	1,15	1,15	18,7	21,5	(f=150 MHz)		0,55
3 B 7	amer	8	1,4/2,8	0,22/0,11	$\left\{ \begin{array}{l} B \\ B \end{array} \right\}$	90 135 180	0 0 0	(5,2 $\div$ 10,5) $\times$ 2 (9,1 $\div$ 11) $\times$ 2 11	1,8 $\times$ 2 1,3 $\times$ 2 4	1,85 1,9	20 20	20 maximum	8 16	1 1,5	2,7
3 C 6	amer	9	1,4/2,8	0,1/0,05	A1	90	0	3,2	1,3	1,3	12	14,1			
5967	Ray	10	1,25	0,12	A1	45		3	0,175	0,175		17	($R_g=5$ M Ω)		
5968	Ray	10	1,25	0,12	Mixer	45	0	0,7	1,3	1,3		45			

Equivalents

CK 5967	Ray = 5967	3 A 5	amer = DCC 90
CK 5968	Ray = 5968	1288	amer = 3 B 7
XXB	amer = 3 C 6	1291	amer = 3 B 7
1 H 1	CCCP = 1 H 3 C	1292	amer = 3 B 7

T	$C_{g/f}$ pF	$C_{o/f}$ pF	$C_{g/a}$ pF	$C_{o/a}$ pF
DCC 90	0,9	1	3,2	0,32
3 B 7	1,4	1,8	2,6	
3 C 6	1,7	2,3	1,7	



DCC90

DDD11

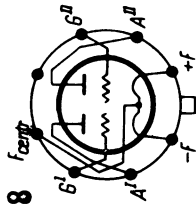
DDD25

DDD41W

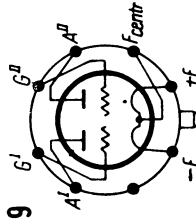
LV12

166-6

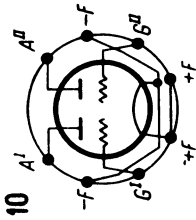
285



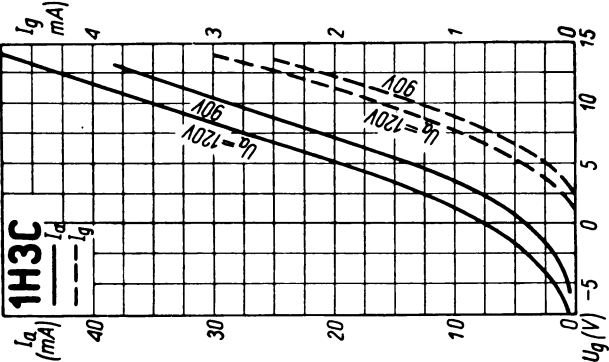
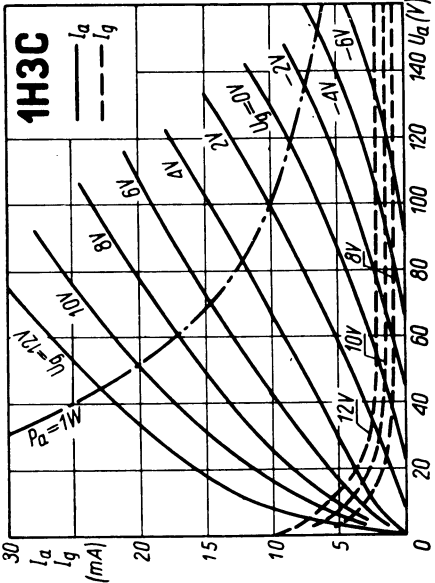
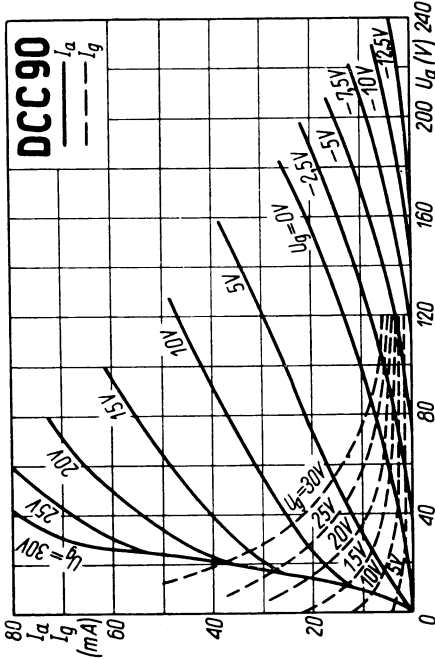
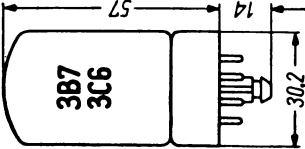
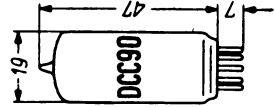
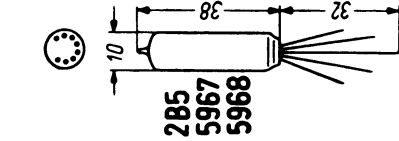
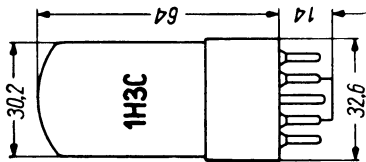
387



3C6



5967

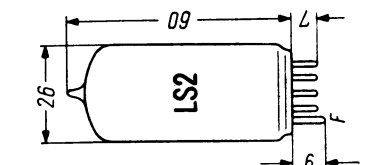
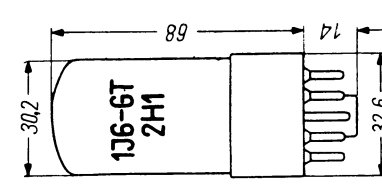
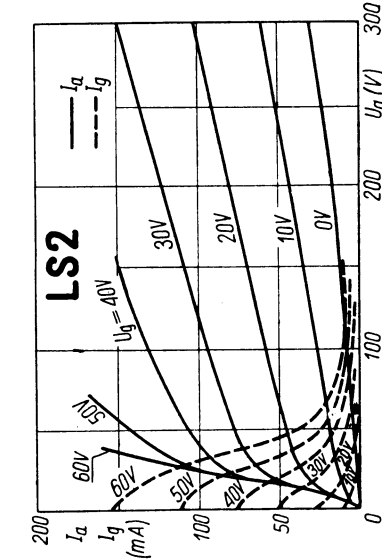
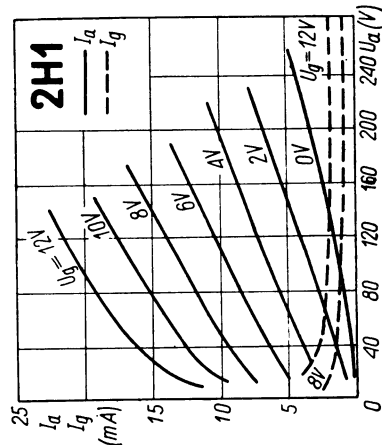
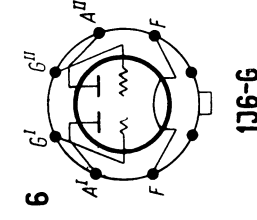
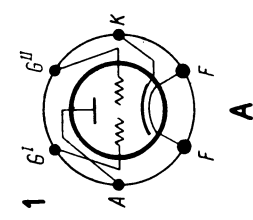
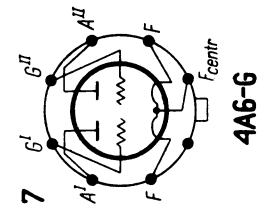
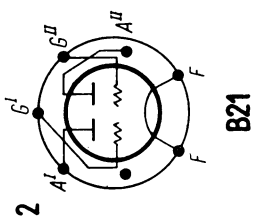
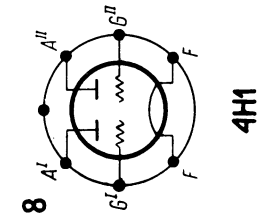
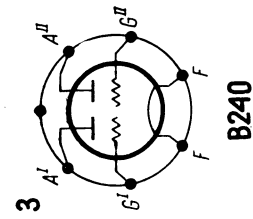
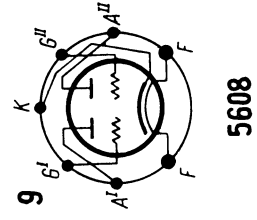
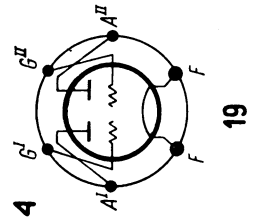
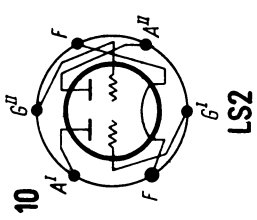
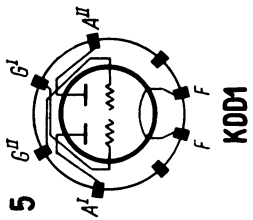


Equivalents

T.			U _f V	I _f A	Cl.	U _a V	U _g V	I _a mA	S mA/V	R _i kΩ	μ	R _o kΩ	P _o W
A	amer	1	2,5	1	A 1	250	-16	7	0,9	10	9	12	1,6
B 21	MOG	2	2	0,2	A 1	150	-6	7,5				14	1,9
B 240	Phl	3/4	2	0,2	B	150	0	(1,5÷10,5) × 2				10	2
KDD 1	Phl	5	2	0,22	B	135	0	(1,5÷15) × 2					
LS 2	Tlf	10	1,9	0,2	{stat.	150	+3	15	2	8,5	17		
PD 220	Maz	2	2	0,2	A 1	150	-1,15	0,8	0,9				
PM 2 B	Mul	2	2	0,2	B	120	0	(1,5÷10) × 2				14	1,2
PM 2 BA	Mul	2	2	0,2	B	120	-4,5	(1,5÷11) × 2				14	1,4
1 J 6-G	amer	6	2	0,24	{B	135	-3	(1,7÷12,5) × 2				10	1,9
19	amer	4	2	0,26	{B	135	0	(5÷15) × 2				10	2,1
2 H 1	CCCP	6	2	0,24	{A 1	-120	0	< 3,2	2,1	16	32	3	1
4 A 6-G	amer	7	2/4	0,12/0,06	{A 1	90	-1,5	1,1	0,75	26,6	20		
4 H 1	CCCP	8	4	2	{B	90	-1,5	5,4 × 2				8	1
5608	amer	9	2,5	2	A 1	120	0	30	3,2		(P _o = 6 W)		
					A 1	300	-6	6	2,45	13	32		

B 220	Hiv	= B 240
B 230	Hiv	= B 21
CB 215	Tu	= B 21
CB 220	Tu	= B 240
CK 5608	Ray	= 5608
CK 5608 A	Ray	= 5608
CB-243	CCCP	= 2 H 1
CB-259	CCCP	= 4 H 1
CO-243	CCCP	= 2 H 1
CO-259	CCCP	= 4 H 1
FB 12	Fot	= B 21
FB 220	Fot	= B 240
HP 2	Fer	= PM 2 B
K 33 A	ER	= PM 2 B
K 33 B	ER	= PM 2 B
L 220	Val	= B 240
PD 220 A	Maz	= B 21
RE 402 B	Tlf	= B 240
TB 240	Dar	= B 240
TB 402	Dar	= PM 2 B
TKDD 1	Tu	= KDD 1
1 J 6-GT	amer	= 1 J 6-G
2 H 1 M	CCCP	= 2 H 1
220 B	Cos	= PM 2 B
240 B	Cos	= PM 2 B
5608 A	amer	= 5608

T.	C _{g/k}		C _{g/a}	
	pF	pF	pF	pF
LS 2	1	1	3	3
2 H 1	2,8	5,7	3,4	3,4



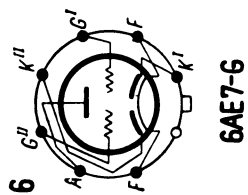
T.					U_f	I_f	U_a	U_g	I_a	S	R_i	μ	I_k	P_a
A-Auto	1	amer	6,3	0,4	250		-16	7	1	10	10	10		
BL 63	2	Marc	6,3	1,27	250		-16	14	4,2	2,8	12	12		
ECC 34	4	Mul	6,3	0,95	250		-16	10	2,2	11,5	5,2	5,2		
2 C 50	4	amer	12,6	0,3	200		-11	18	2,9	3,4	10	10		3,25
6 AE 6-G	5	amer	6,3	0,15	250		-1,5	6,5	1	25	25	25		
6 AE 7-G	6	amer	6,3	0,5	250		-13,5	5	1,5	9,3	14	14		
1642	7	amer	6,3	0,6	250		-16,5	8,3	1,37	7,6	10,4	10,4		2,1
5687	8	amer	6,3/12,6	0,9/0,45	120		-2	3,6	11	1,7	18,5 ($I_a=10 \mu A$; $U_g=-10 V$)	18,5 ($I_a=10 \mu A$; $U_g=-10 V$)		
6463..*)	3	int	6,3/12,6	0,6/0,3	250		-12,5	12,5	5,5	3	16,5 ($I_a=10 \mu A$; $U_g=-21 V$)	16,5 ($I_a=10 \mu A$; $U_g=-21 V$)		
6840	3	GE	6,3/12,6	0,8/0,4	250		-12,5	14,5	5,2	3,9	20 ($R_k=620 \Omega$)	20 ($R_k=620 \Omega$)		4,4

*) vide * 3
*) vide * 4, C = 10000; $U_f = 6,3/12,6 V \pm 5 \%$

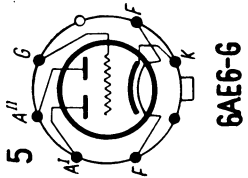
Equivalents

T.		$C_{g/k+f}$		$C_{a/k+f}$		$C_{g/a}$	
		pF	pF	pF	pF	pF	pF
ECC 34	I-II triod.	3,5	1,8	4	0,48		
5687	I-II triod.	4	0,45	3,1			

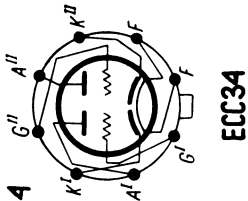
CC 86 E	Sim = 6463
CK 5687	Ray = 5687
RK 33	Ray = 1642
2 C 21	Ray = 1642



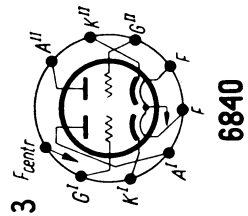
6AE7-6



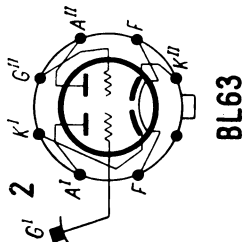
6AE6-6



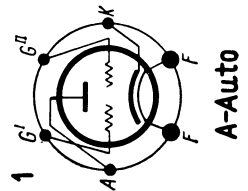
ECC34



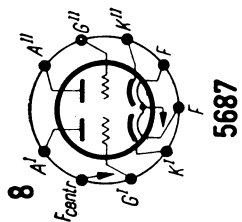
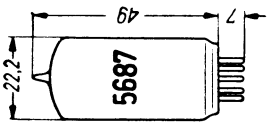
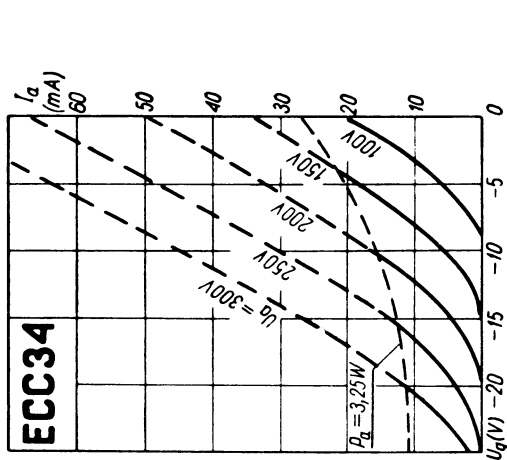
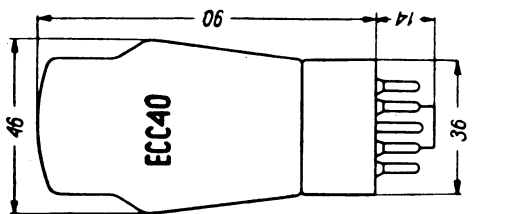
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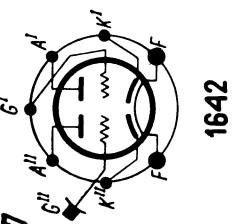
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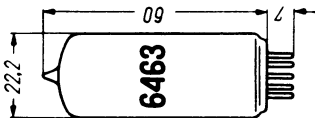
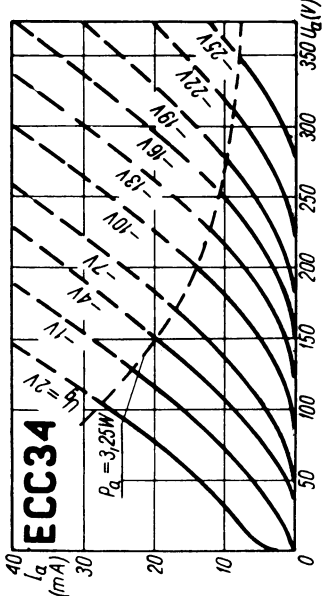
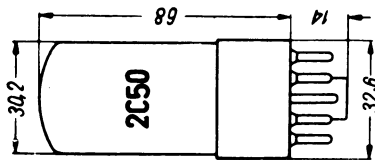
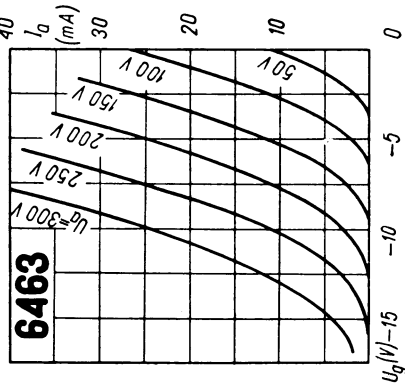
A-Auto



5687



1642



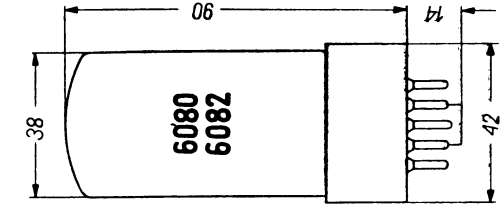
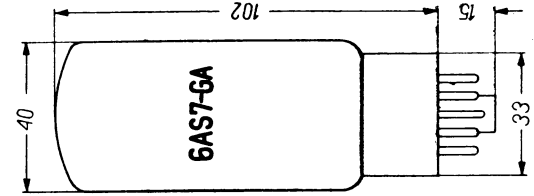
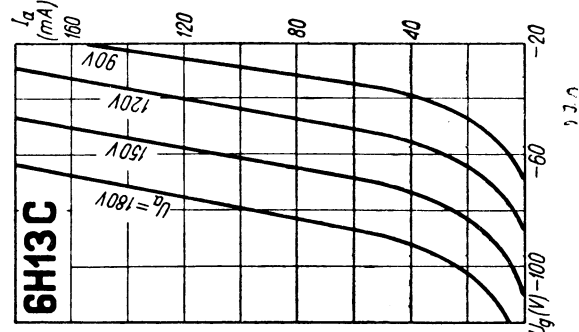
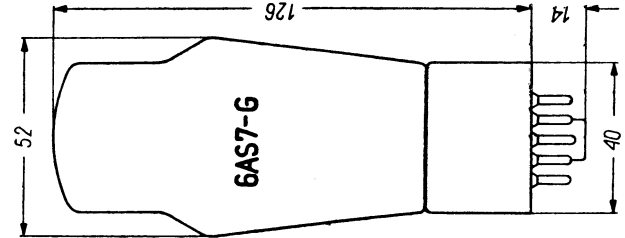
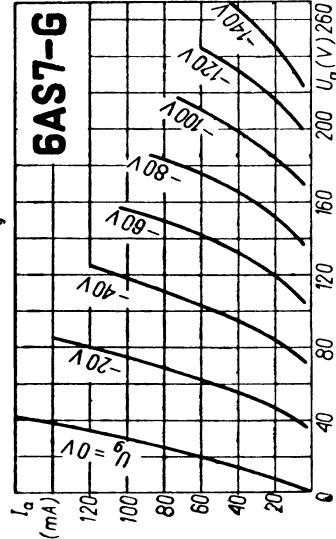
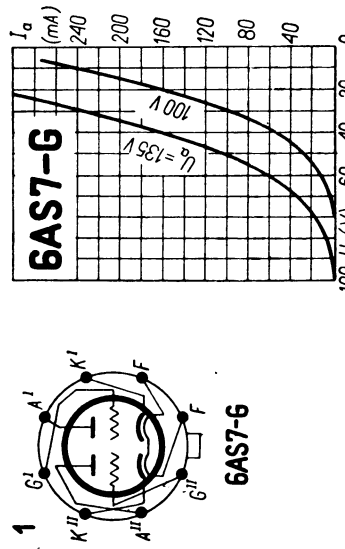
T.			U_f V	I_f A	U_a V	U_g V	I_a mA	S mA/V	R_i Ω	μ V/V	R_k Ω	$U_{f/k}$ V	P_a W
6 AS 7-G	int	1	$6,3 \pm 10\%$	2,5	135		125	7	280	2	250		
6080	amer	1	$6,3 \pm 10\%$	2,5	200		125	maximum					13
6082	amer	1	$26,5 \pm 10\%$	0,6	-1700 -2300		125	maximum 6 AS 7-G					impulse $\leq 10 \mu\text{sec}$
6 H 13 C	CCCP	1	$6,3 \pm 10\%$	2,8	90 250	-30	80 ± 32 130	$5 \pm 1,5$	460	2,3			
5998	amer	1	6,3	2,4	110	-10,5	100	15,5	350	5,3		300	13

T.		$C_{g/k}$		$C_{a/k}$		$C_{g/a}$		$C_{f/k}$		$C_{g/g}$		$C_{a/a}$	
		pF		pF		pF		pF		pF		pF	
6 AS 7-G	I-II triod.	6,8		2,3		10,5		11		0,7		1,65	
6 H 5 C	I-II triod.	9,5		5		9,5							
6 H 13 C	I-II triod.	7		4,2		9							
6080	I-II triod.	6		2,2		8		12,5		0,5		2	
6082	I-II triod.	6		2,2		8		13		0,5		2	

Equivalents

A 1834	Marc = 6 AS 7-G	RK 6080	Ray = 6080	6 H 5 C	CCCP = 6 AS 7-G
A 4475	amer = 6 AS 7-G	6 AS 7-GA	amer = 6 AS 7-G	6 H 11	CCCP = 6 AS 7-G
E 6080	SFR = 6080	6 AS 7-W ¹⁾	amer = 6 AS 7-G	6080-WA ¹⁾	amer = 6080
ECC 230	Mul = 6080				

¹⁾ vide * 4, a, b, g



T.			U_f	I_f	Cl.	U_a	U_g	I_g	S	R_i	μ	R_k	I_k	$P_a^{I/III}$	P_a^{I+II}	$U_{f/k}$
E 182 C ¹⁻²⁾	PhI	1	6,3/12,6	0,8/0,4	{ stat. cut-off	{ 120 330	-2 +1 ÷ -100 +30 ÷ -200	36	15	1,6	24,5		60	4,5	8	200
6 BL 7-GT	amer	2	6,3	1,5	{ stat. VD-Ampl.	{ 250 450 500 1800	-9 -500	40 11	6,2 (vide Fig. 1)	2,15	15	($I_a = 25 \mu A$; 1200	400 ($I_a = 25 \mu A$; 180	$U_g = -25 V$	12	200

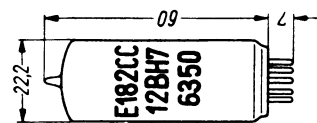
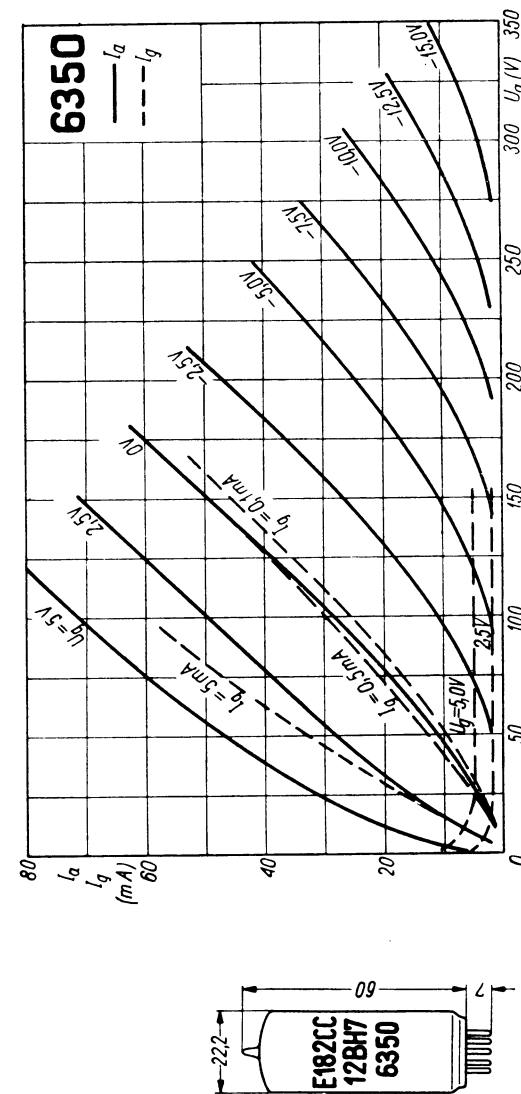
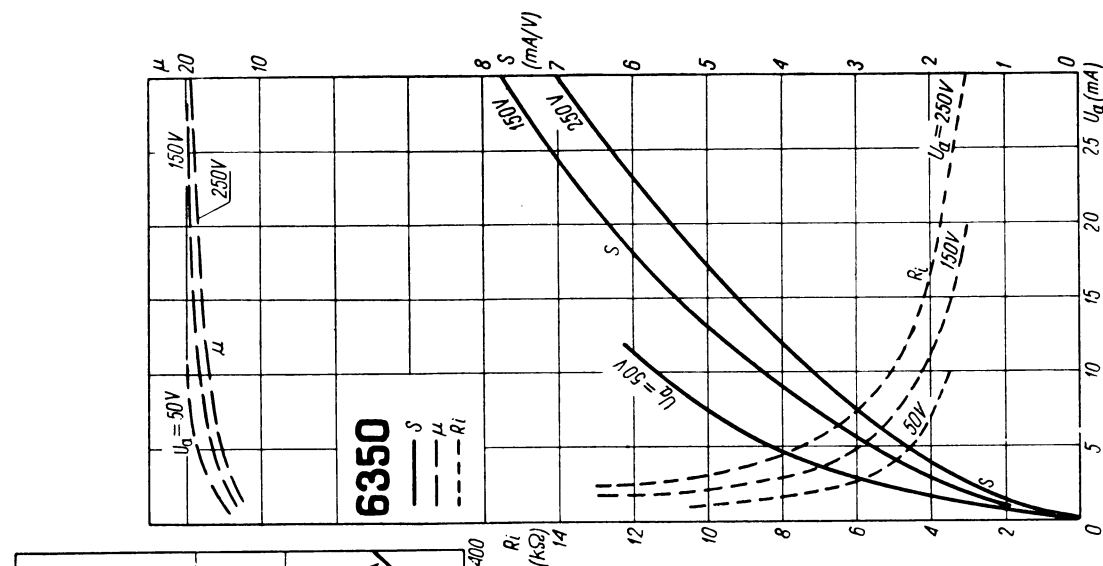
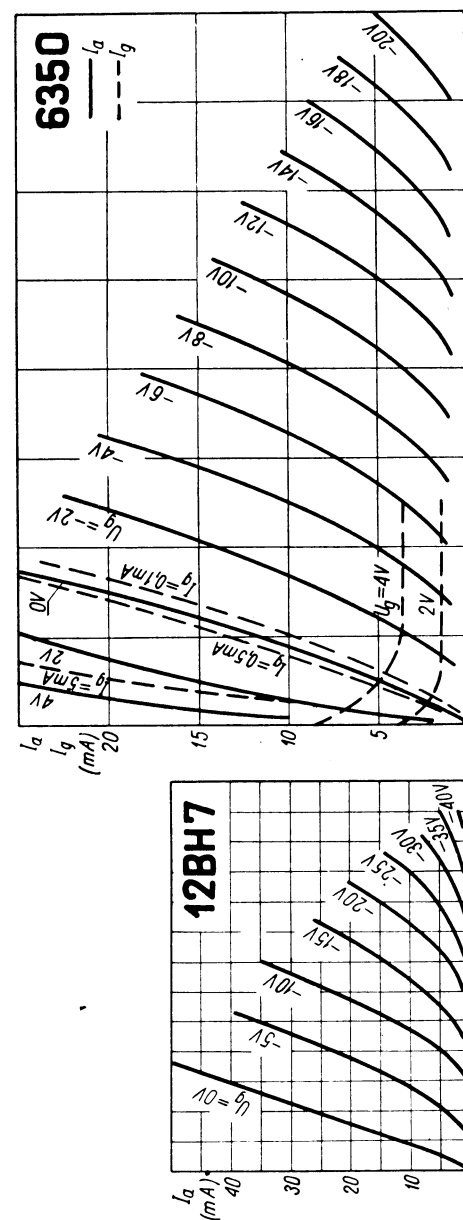
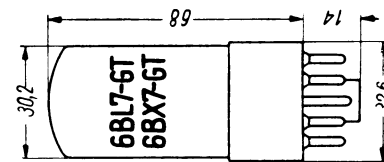
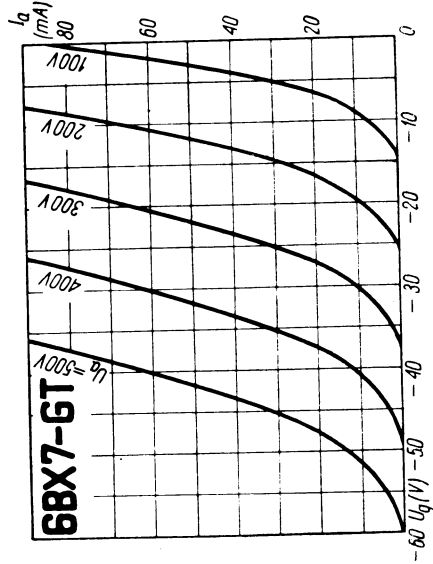
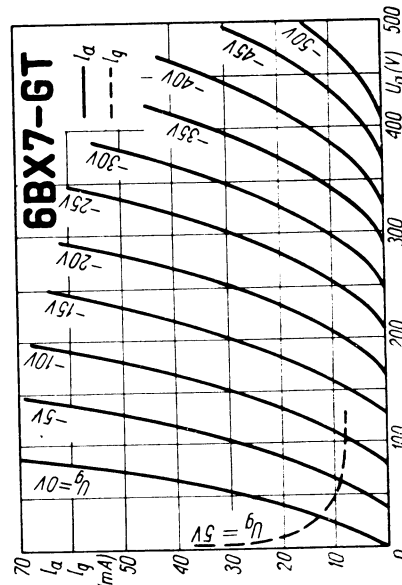
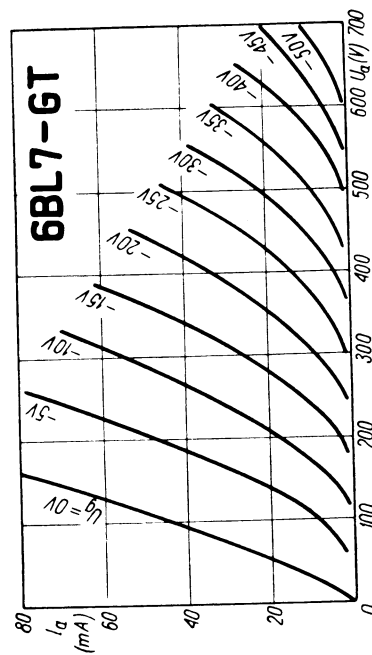
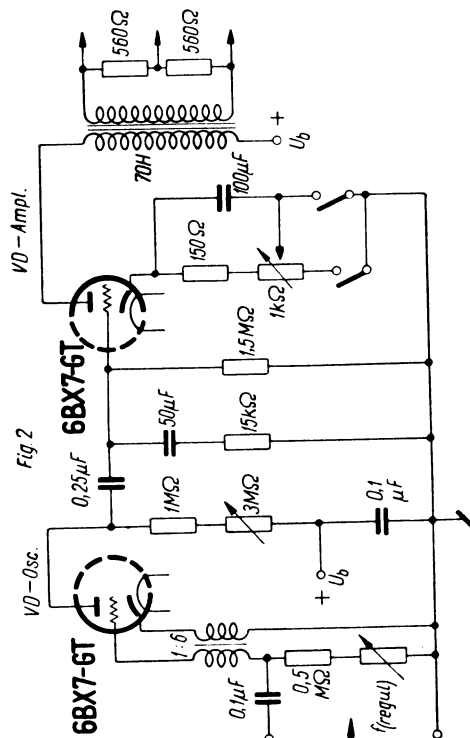
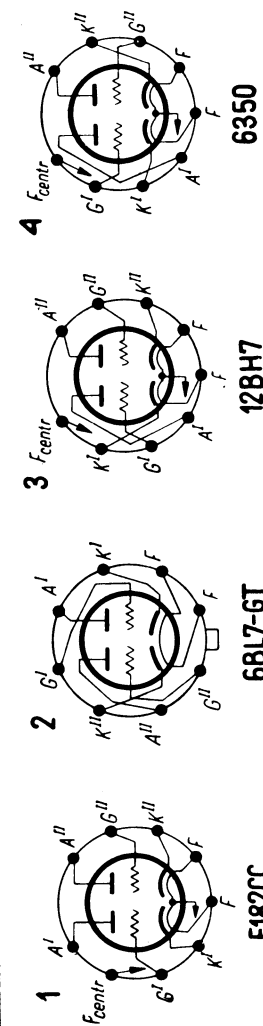
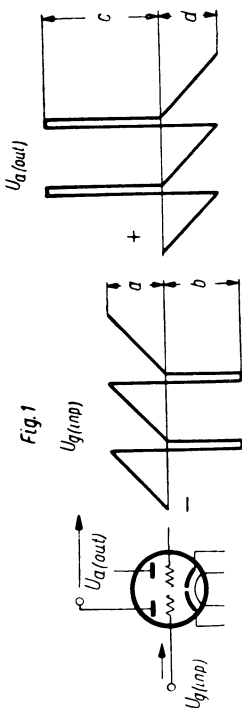
T.			U_f	I_f	Cl.	U_a	U_g	I_g	S	R_i	μ	R_k	I_k	$P_a^{I/III}$	P_a^{I+II}	$U_{f/k}$
6 BX 7-GT	int	2	6,3	1,5	{ stat. VD-Ampl. VD-Osc.	{ 100 250 170 500 2000 500	0 -250 -400 -10,5 0 ÷ -50	80 42 24	7,6 (vide Fig. 1)	1,3	10	0 390 170	60 180 60 180	$(I_a = 50 \mu A$; 10 12 12	$U_g = -40 V$	200
12 BH 7 12 BH 7-A	int int	3 3	6,3/12,6 6,3/12,6	0,6/0,3 0,6/0,3	{ stat. VD-Ampl. VD-Osc. HD-Osc.	{ 250 300 350 450 1500 450 450	-250 -400 -600 -5 +4 ÷ -80 +14 ÷ -440	11,5 16	3,1 (vide Fig. 1)	5,3	16,5	560	20 70 20 70 20 200	$(I_a = 50 \mu A$; 20 3,5 3,5 3,5 3,5	$U_g = -23 V$	200
6350	amer	4	6,3/12,6	0,6/0,3	{ stat. on-off	{ 150 330 1000	-5 +4 ÷ -80 +14 ÷ -440	11	4,6	3,9	18		45 350	$(I_a = 100 \mu A$; 4 7	$U_g = -11 V$	220

¹⁾ vide * 4, c ($U_f = 6,3/12,6 V \pm 5\%$)
²⁾ vide * 3

T.	$C_{g/k+f}$	$C_{a/k+f}$	$C_{g/a}$	$C_{a/a}$	$C_{g/g}$	$C_{f/k}$
E 182 CC	6,5	1,1	4	0,65	0,07	4
6 BL 7-GT	4,4	1,2	4,2	1,5	0,11	vide * 5
6 BX 7-GT	4,8	3,4	4,2	1,2	0,1	vide * 6
12 BH 7	4,8	3,2	4	0,8	0,042	vide * 5
6350	3,2	0,6	3,2	1	0,042	4,6 (* 5)

Fig. 1

T.	a	b	c	d
6 BL 7-GT	44	36	600	270
6 BX 7-GT	70	41	840	160
12 BH 7	32	25	670	230



Equivalents

B 36	MOG = 12 SN 7-GT	6 SN 7-GTB	amer = 6 SN 7-GT
B 65	MOG = 6 SN 7-GT	6 SN 7-WGT ³⁾	amer = 6 SN 7-GT
E 1606	MOG = 6 SN 7	7 N 7-TV	Syl = 7 N 7
HF 3129	RFT = 6 SN 7	12 SN 7-GTA	amer = 12 SN 7-GT
OSW 3129	RFT = 6 SN 7	12 SN 7-GTB	amer = 12 SN 7-GT
QA 2408 ¹⁾	Os = 6 SN 7-GT	12 SX 7-GT	amer = 12 SN 7-GT
QB 65 ¹⁾	Marc = 6 SN 7-GT	13 D 1	Bri = 25 SN 7-GT
6 CC 10	Tes = 6 SN 7-GT	13 D 2	Bri = 12 SN 7-GT
6 H 8 C	CCCP = 6 SN 7-GT	1633	RCA = 25 SN 7-GT
6 H 8 M	CCCP = 6 SN 7-GT	5692 ²⁾	amer = 6 SN 7-GT
6 SN 7	RFT = 6 SN 7-GT	6042	Bri = 25 SN 7-GT
6 SN 7-GTA	amer = 6 SN 7-GT	6180	amer = 6 SN 7-GT

1) vide * 4

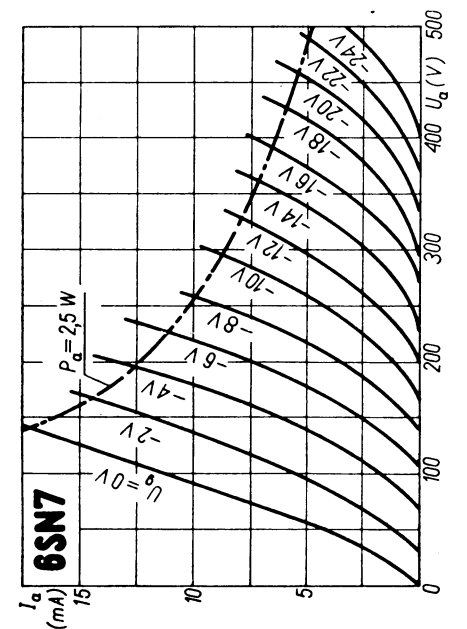
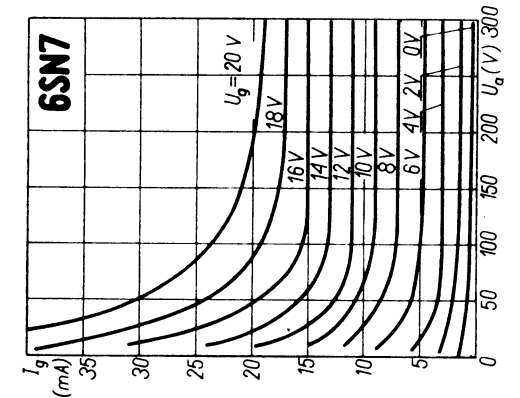
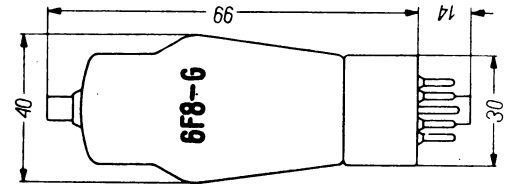
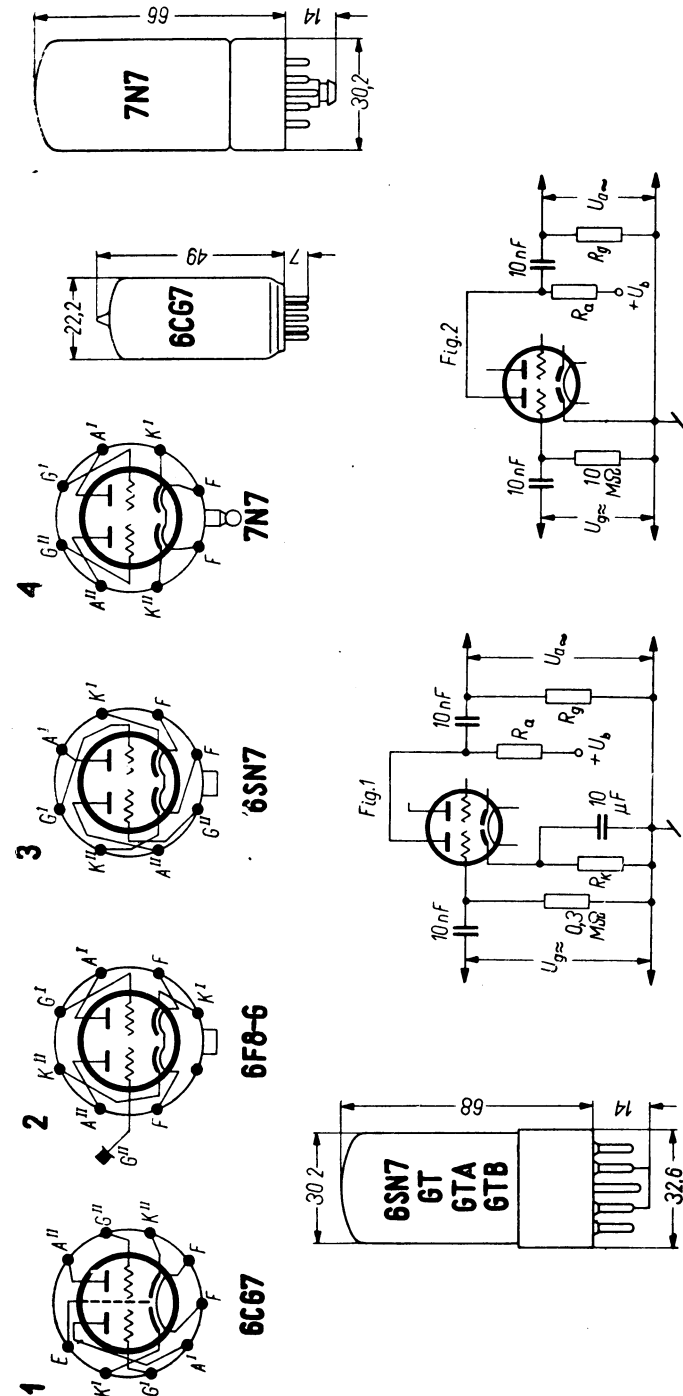
2) vide * 4, a, b ($U_f = 6.3 \text{ V} \pm 10\%$)3) vide * 4, a, b, c ($U_f = 10\,000, f, g (U = 6 \div 6.6 \text{ V})$)

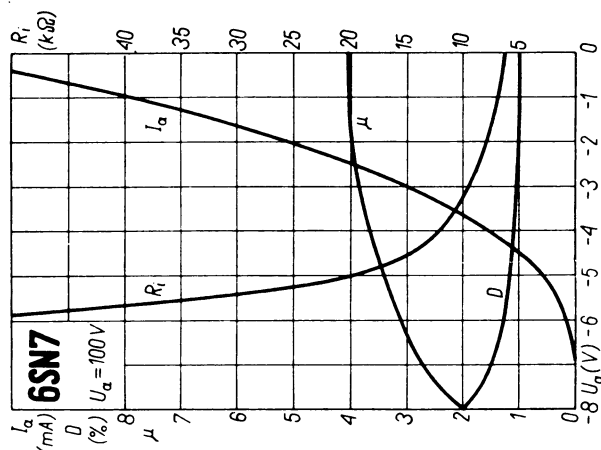
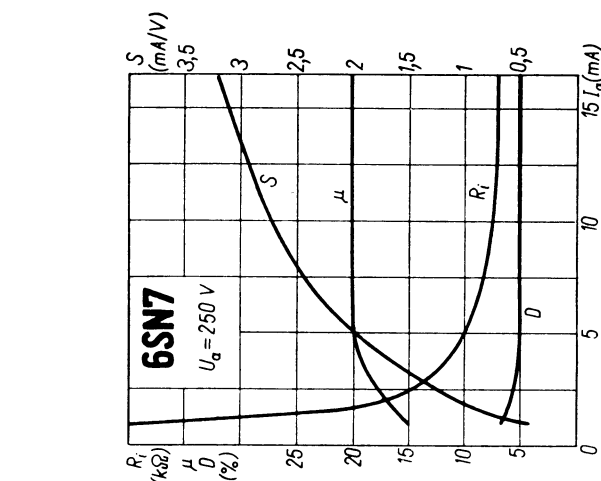
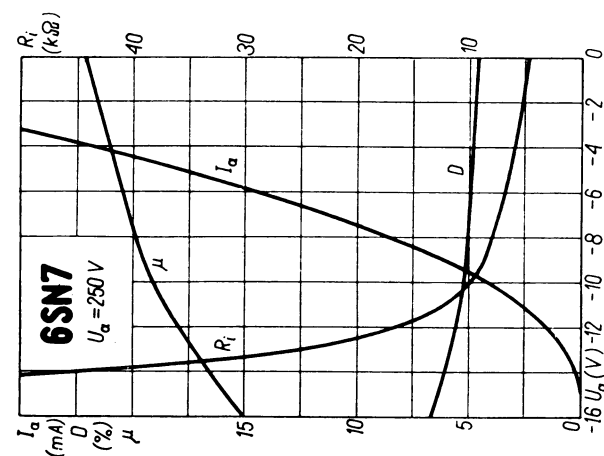
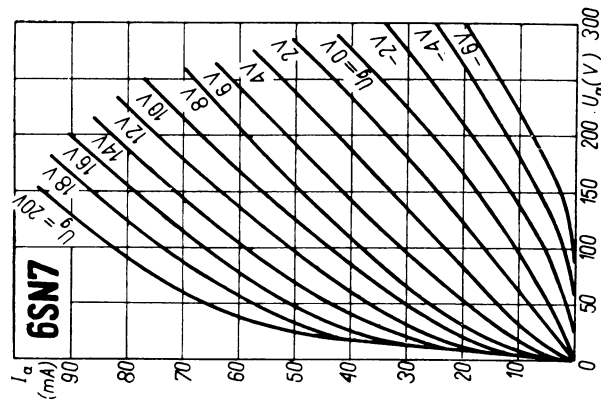
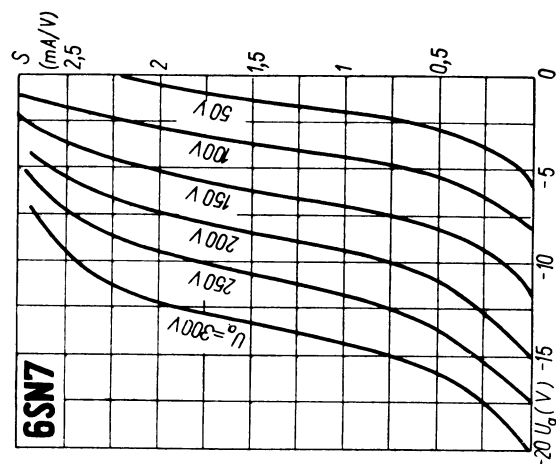
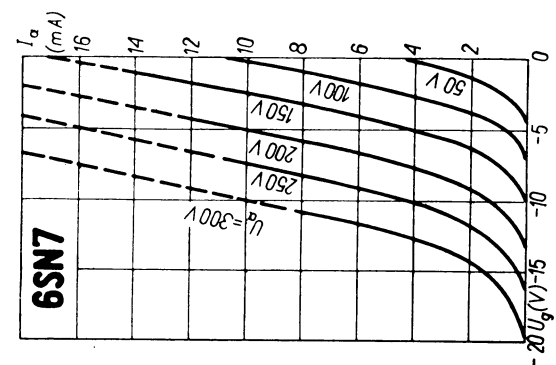
Fig. 1

U_b	R_a	R_k	R_g	$U_{g\approx}$	$U_{a\approx}$	μ	h
V	k Ω	k Ω	k Ω	V	V	$U_{a\approx}/U_{g\approx}$	%
100	50	2	300	1,13	15,5	13,5	4,2
100	100	5	500	1,3	19,2	14,7	4,7
100	300	10	500	1,2	17,7	14,7	4,5
180	100	2,5	250	2,2	33	15	5
180	250	7	500	2,6	39	15	5
180	500	10	1000	2	32	16	5
250	50	2	300	3,5	52,5	15	4,9
250	100	4	500	3,3	53	16,1	4,6
250	300	8	500	3,05	49,4	16,2	4,5
300	100	2,5	250	3,4	51	15	5
300	250	5	500	3,4	54	16	5
300	500	7,5	1000	2,8	45	16	5

Fig. 2

U_b	R_a	R_g	$U_{g\approx}$	$U_{a\approx}$	μ	h
V	k Ω	k Ω	V	V	$U_{a\approx}/U_{g\approx}$	%
180	250	250	2	33	16	5
180	250	500	2,2	38	17	5
180	500	500	1,8	32	18	5
180	500	1000	2,3	41	18	5
300	250	250	2,7	46	17	5
300	250	500	3,4	62	18	5
300	500	500	2,9	53	18	5
300	500	1000	3,6	68	19	5

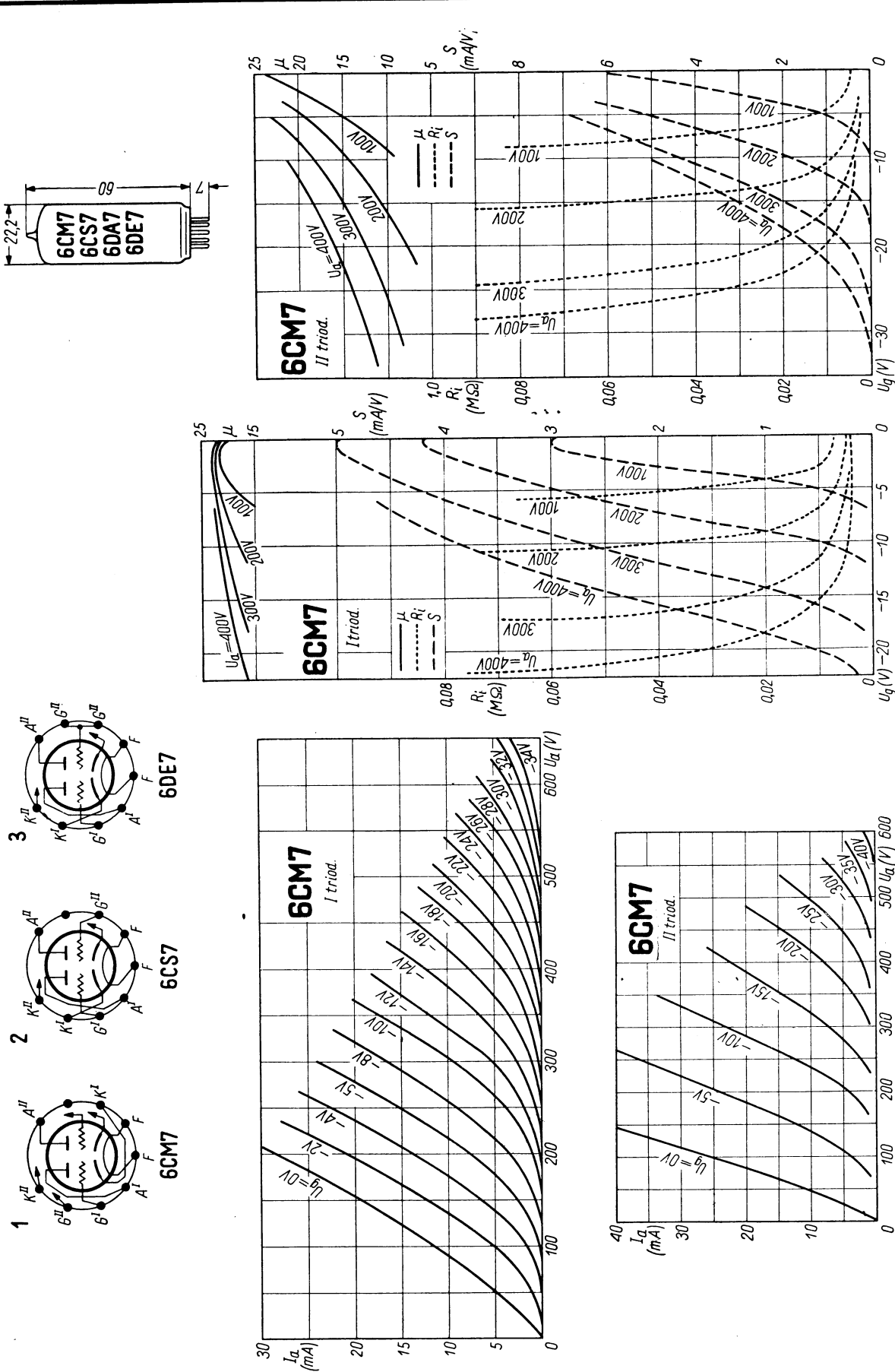




T.			Uf	I _f	triad.	Cl.	U _a	U _a (imp.) ¹⁾	U _g	U _g (imp.) ¹⁾	I _a	S	R _i	μ	I _k	I _k (imp.) ¹⁾	P _a	U _{flk}
6 CM 7	amer	1	6,3	0,6	I	Osc	{ 200 500		- 7	- 200	5	2	11	20	(I _a = 10 μA; U _g = -14 V)	15	1,25	200
8 CM 7	amer	1	8,4	0,45	II	A 1	{ 250 500	2200	- 8	- 200	20	4,4	4,1	18		70		
6 CS 7	amer	2	6,3	0,6	I	Osc	{ 250 500		- 8,5	- 400	10,5	2,2	7,7	17	(I _a = 10 μA; U _g = -24 V)	20	1,25	200
8 CS 7	amer	2	8,4	0,45	II	A 1	{ 250 500	2200	- 10,5	- 250	19	4,5	3,45	15,5	(I _a = 50 μA; U _g = -22 V)	30	6,5	200
6 DA 7	amer	2	6,3	1	I	Osc	{ 250 300		- 8	- 400	9	2,6	7,7	20	(I _a = 50 μA; U _g = -16,5 V)	20	2	200
10 DA 7	amer	2	10,5	0,6	II	A 1	{ 150 500	1800	- 17,5	- 400	40	5,7	1,1	6,3	(I _a = 0,5 mA; U _g = -42 V)	40	6	200
6 DE 7	amer	3	6,3	1	I	Osc	{ 250 330		- 11	- 350	5,5	2	8,75	17,5	(I _a = 10 μA; U _g = -20 V)	15	1,2	200
10 DE 7	amer	3	10	0,6	II	A 1	{ 150 235	850	- 17,5	- 225	30	6,5	0,925	6	(I _a = 50 μA; U _g = -44 V)	35	5,5	200

¹⁾ Impulse ≤ 2,5 msec.

T.	C _{g/k+f}	C _{a/k+f}	C _{g/a}	T.	C _{g/k+f}	C _{a/k+f}	C _{g/a}
	pF	pF	pF		pF	pF	pF
6 CM 7	2	0,5	3,8	6 DA 7	2	0,41	2,3
	3,5	0,4	3		5,5	0,82	6,9
6 CS 7	1,8	0,5	2,6	6 DE 7	2,2	0,52	4
	3	0,5	2,6		5,5	1	8,5



T.		U_f V	I_f A	Cl.	U_a V	U_g V	I_a mA	S mA/V	R_i kΩ	μ V/V	R_k kΩ	R_o kΩ	P_o W	$U_{g\approx}$ V	h %
6AU7	amer	1	3,15/6,3	stat.	100	0	11,8	3,2	6,25	20					
7AU7	amer	1	3,5/7	stat.	170	4	10	2,5	7,2	18					
9AU7	amer	1	4,7/9,4	stat.	200	5,5	11	2,5	7,2	18					
12AU7	int	1	6,3/12,6	A 1	250	8,5	10,5	2,2	7,7	17					
(=6C4×2)				AB	250	9,4	9,2÷9,6				1	13	0,27	5,9	10
				HD	300	11	(6,6÷7,2)×2				0,8	30	0,715	8,2	4
				VD	1200	—600									
				stat.	300	—250									
maximum $I_k = 250$ mA maximum $I_k = 60$ mA maximum ($P_o = 2,75$ W; $I_k = 20$ mA; $U_{fjk} = 180$ V)															

T.	$C_{g/k}$		$C_{a/k}$		$C_{a/g}$		$C_{g/f}$		$C_{a/g}^{II}$		$C_{a/a}^{II}$		$C_{g/g}^{II}$	
	pF	pF	pF	pF	pF	pF	pF	pF	pF	pF	pF	pF	pF	pF
6AU7	I triod.	1,8	0,5	1,6	0,14									
	II triod.	1,8	0,37	1,6	0,14									

Equivalents 12AU7

B 329	MOG	ECC 802 ²⁾	Lor	6 CC 40	Tes	5814	amer
CC 82 E ¹⁾	Sim	ECC 802 S ¹⁾	Tlf	12 AU 7 A	amer	5814 A	amer
CK 5814	Ray	GL 5814	GE	12 AU 7 WA ²⁾	amer	5814 WA ²⁾	amer
CK 5814 A	Ray	M 8136 ²⁾	Mul	12 AU 7 R	RT	6067 ²⁾	Bri
CK 5814 WA ²⁾	Ray	QB 329 ²⁾	Marc	12 AU 7 S ²⁾	eur	6189 ²⁾	amer
ECC 82	eur						

¹⁾ vide * 4, a, b, c = 10000, f, g ($U_f = 6,3/12,6$ V $\pm$ 5 %)
²⁾ vide * 4, a, b, c = 10000, f, g ($U_f = 6,3/12,6$ V $\pm$ 10 %; $I_f = 0,35/0,175$ A)

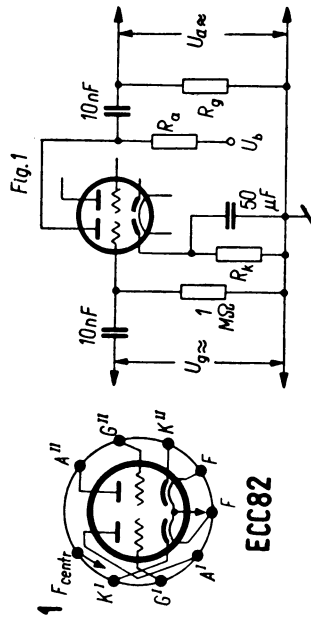


Fig. 2

U_b	V	I_a	mA	U_{g2}	V	μ	h
250	1,66	15	178	2			
350	2,33	25	178	2			

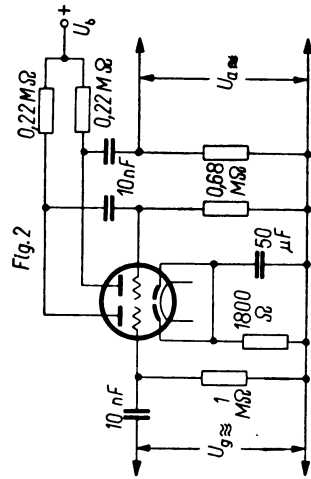


Fig. 3

U_b	V	I_a	mA	U_{g2}	V	μ	h
250	0,82	4,5	13	11	1,5		
350	1,16	6,3	20	11	1,5		

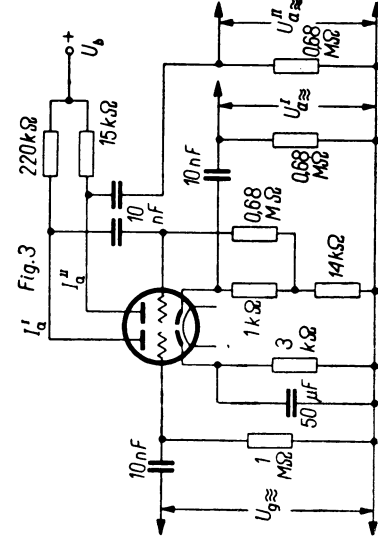
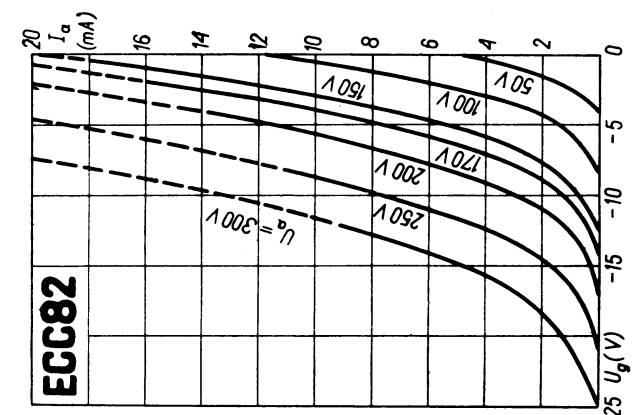
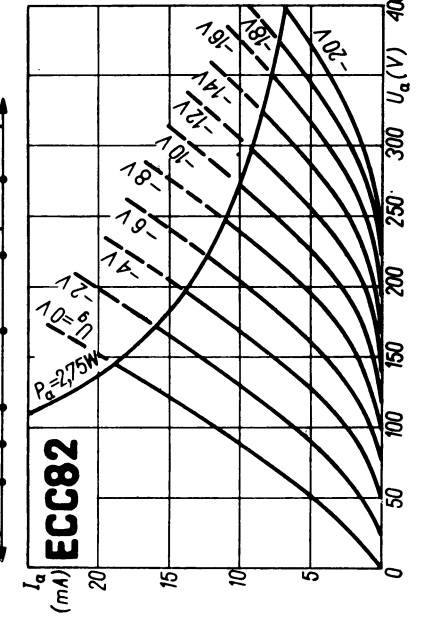
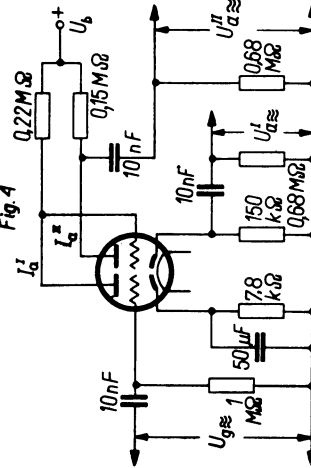
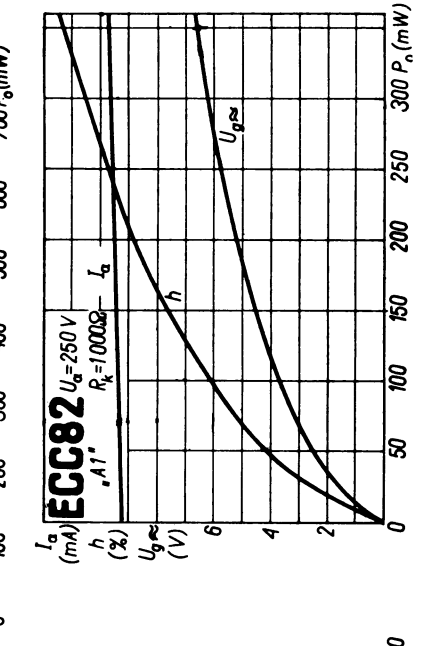
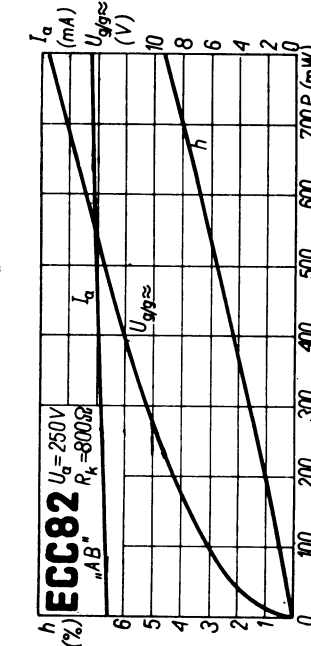
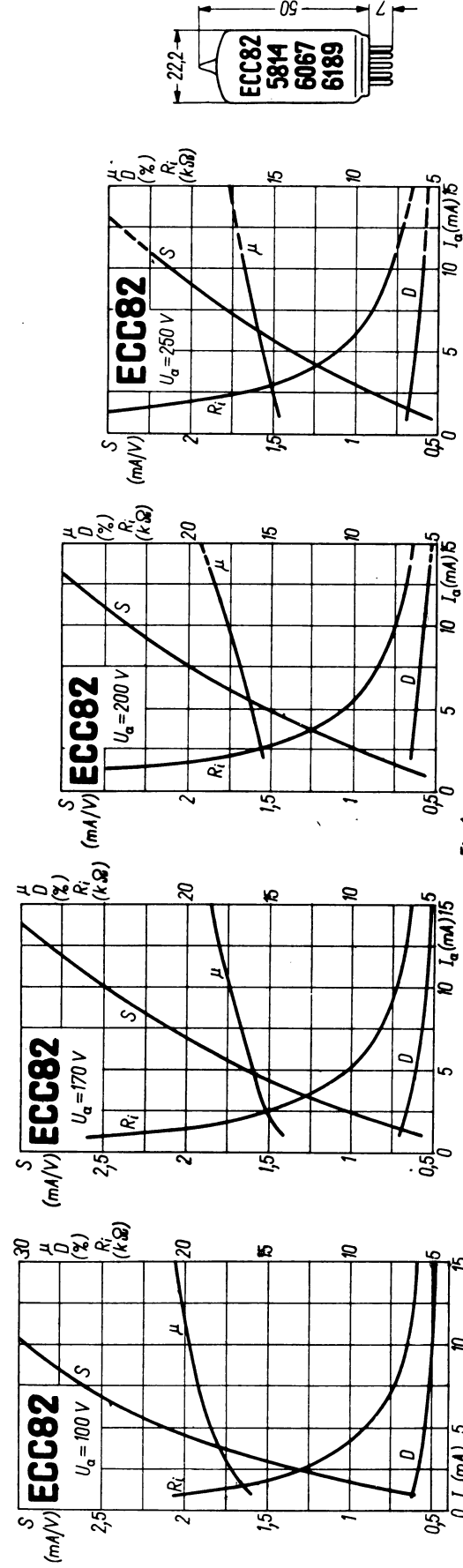


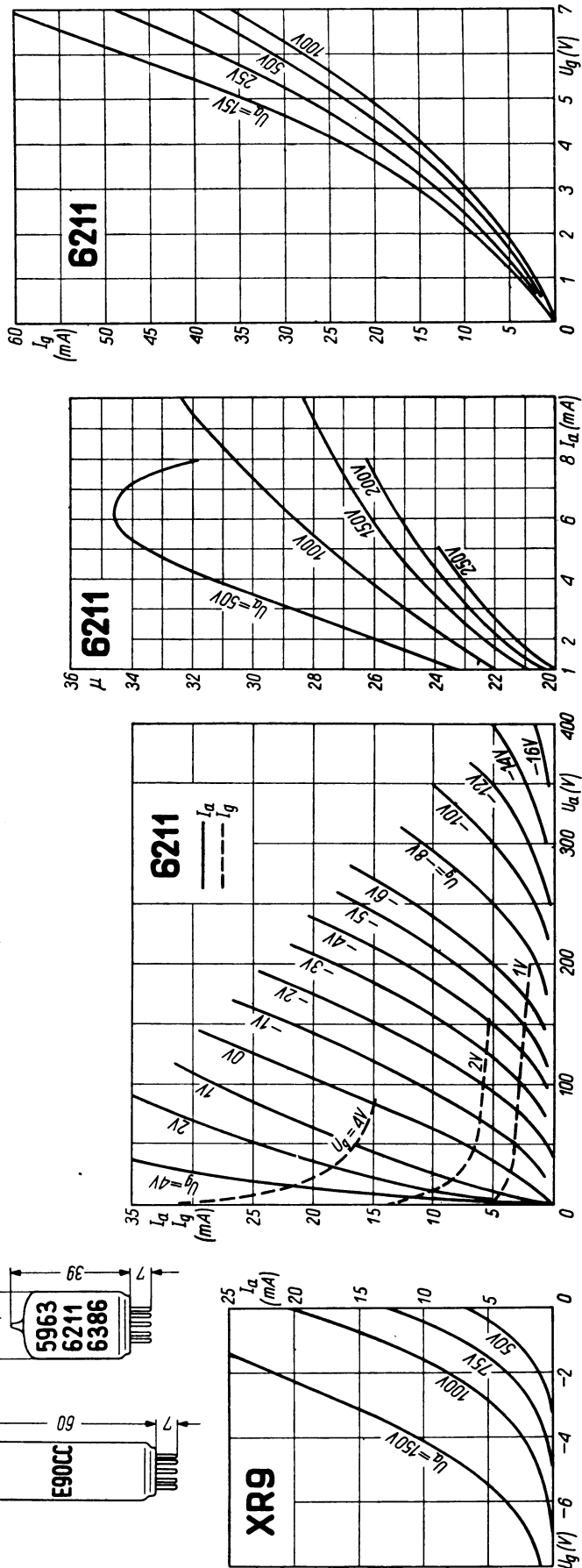
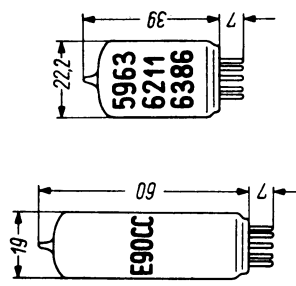
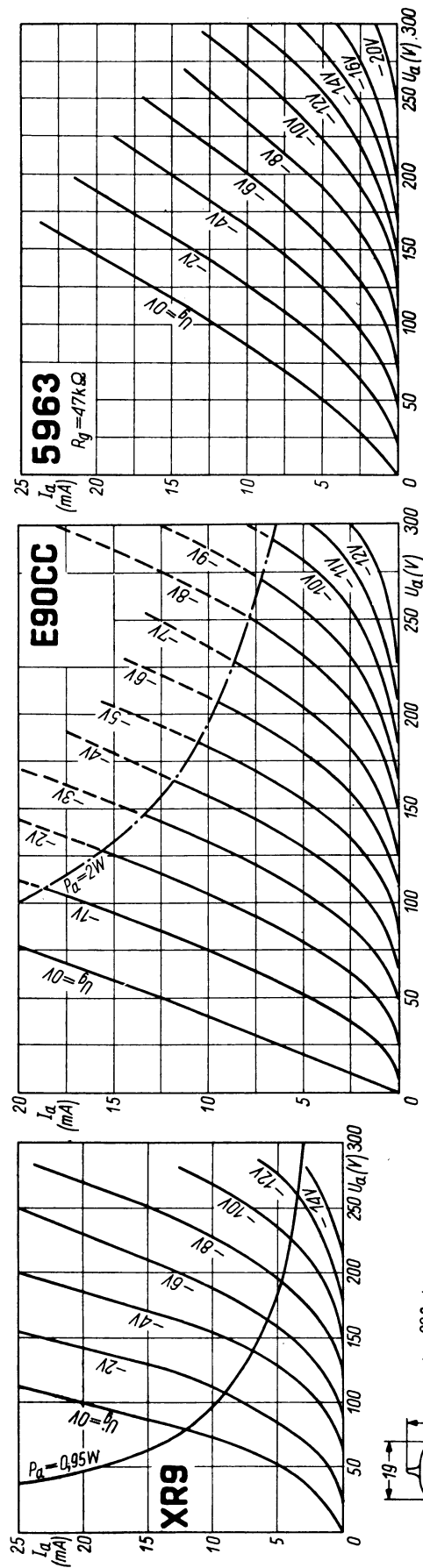
Fig. 4

U_b	V	I_a	mA	U_{g2}	V	μ	h
250	0,7	0,68	15	11	1		
350	1,0	0,93	24	11	1		

Fig. 1

U_b	R_a	R_g	R_k	I_a	U_{g2}	μ	h
V	MΩ	MΩ	kΩ	mA	V	U_{g2}/U_{g2z}	%
100	0,047	0,15	1,2	1,2	11	13,5	5,6
100	0,1	0,33	2,2	0,66	10	14	4,8
100	0,22	0,68	3,9	0,33	8	14,5	4
150	0,047	0,15	1,2	1,82	18	13,5	6,1
150	0,1	0,33	2,2	0,98	17	14	5,6
150	0,22	0,68	3,9	0,5	15	14,5	4,4
200	0,047	0,15	1,2	2,41	26	13,5	6,3
200	0,1	0,33	2,2	1,3	25	14	5,8
200	0,22	0,68	3,9	0,66	22	14,5	4,7
250	0,047	0,15	1,2	3,02	34	13,5	6,4
250	0,1	0,33	2,2	1,63	32	14	5,9
250	0,22	0,68	3,9	0,82	28	14,5	4,8
300	0,047	0,15	1,2	3,65	43	13,5	6,5
300	0,1	0,33	2,2	1,97	41	14	6,0
300	0,22	0,68	3,9	0,98	36	14,5	4,9
350	0,047	0,15	1,2	4,3	51	13,5	6,6
350	0,1	0,33	2,2	2,3	49	14	6,1
350	0,22	0,68	3,9	1,16	43	14,5	5,0
400	0,047	0,15	1,2	5	59	13,5	6,7
400	0,1	0,33	2,2	2,62	57	14	6,2
400	0,22	0,68	3,9	1,31	50	14,5	5,1





T.			U_f	I_f	U_a	U_g	I_a	S	R_i	μ	R_k	I_k	P_a	$U_{f/k}$
			V	A	V	V	mA	mA/V	k Ω	V/V	Ω	mA	W	V
ECC 31	Mul	1	6,3	0,95	250	-4,6	6	2,3	14	32		50	5	50
ECC 32	Mul	2	6,3	0,95	300		maximum							
13 D 3	Bri	3	6,3/12,6	0,6/0,3			9	3,6	9,7	35		20	2,5	100
ECC 33	Mul	2	6,3	0,4	250	-4	maximum				920	10	1,5	100
ECC 40	eur	4	6,3	0,6	250		6	2,9	11	32	920	12	2	120
E 80 CC ¹⁾	eur	3	6,3/12,6	0,6/0,3	250		6	2,7	10	27	920	25	2	250
6 H 1 II	CCCP	5	6,3	0,6	250		8	3,2	11	35	600			
6 H 5 II	CCCP	5	6,3	0,6	200		8	3,5	7,7	27	600	25	2	250
6 H 5 II	CCCP	5	6,3	0,6	200		8	3,5	7,7	27	600	25	2	250

Equivalents

AA 61	Maz = ECC 40
ECC 87	Sim = E 80 CC
6085	Phl = E 80 CC
6158 ²⁾	Bri = 13 D 3

ECC 40 Fig. 6

U_b	I_a	μ	U	h
V	mA	U/U_g	V	%
250	3	11,5	30	0,6
300	4,5	12	30	0,4

T.		$C_{g/k+f}$	$C_{g/a}$	$C_{g/a}$	$C_{g/a}$	$C_{g/f}$	$C_{k/f}$	$C_{g/g}$	$C_{d/g}$	$C_{d/g}$	$C_{d/g}$
		pF	pF	pF	pF	pF	pF	pF	pF	pF	pF
ECC 31	I triod.	4	1,9	3,4	1	0,1	3	0,1	0,1	0,1	vide * 6
ECC 32	II triod.	4	1	3,7	0,8	0,1	3	0,1	0,1	0,065	vide * 5
ECC 33	I-II triod.	4,3	2	4,3	0,75	0,23	4,8	0,013	0,1	0,065	
ECC 40	I-II triod.	3,5	1,2	2,5	0,8	0,23	4,8	0,013	0,1	0,065	
ECC 40	I triod.	2,8	1,1	2,7	0,8	0,23	4,8	0,013	0,1	0,065	
ECC 40	II triod.	2,6	0,7	2,8	0,8	0,23	4,8	0,013	0,1	0,065	
E 80 CC	I triod.	2,6	3,5	3,6	1,3	0,23	4,8	0,013	0,1	0,065	
E 80 CC	II triod.	2,4	3	3,1	1,45	0,23	4,8	0,013	0,1	0,065	
6 H 1 II	I-II triod.	3,8	1,75	1,85	0,05	0,23	4,8	0,013	0,1	0,065	
6 H 5 II	I triod.	3	1,5	2,25	0,2	0,23	4,8	0,013	0,1	0,065	
6 H 5 II	II triod.	3	1,7	2,25	0,2	0,23	4,8	0,013	0,1	0,065	
13 D 3	I-II triod.	2,3	0,95	2,1	1	0,23	4,8	0,013	0,1	0,065	

¹⁾ vide * 4, a, b, c = 10000; $U_f = 6,3$ (12,6) V $\pm 5\%$; U_g (max) = — 200 V; I_g (max) = 0,3 mA; I_k (impulse ≤ 2 msec) = 150 mA; I_g (imp) = 30 mA

²⁾ vide * 4, a, b, c, f, g

ECC 31 Fig. 1

U_b	R_a	R_g	R_k	I_a	μ	$U_{a\approx}/U_{g\approx}$	h
V	k Ω	k Ω	k Ω	mA			%
200	47	150	1,2	1,9	19,5	26	3,2
250	47	150	1,2	2,4	19,5	37	3,4
300	47	150	1,2	2,9	20	48	3,5
350	47	150	1,2	3,4	20,5	57	3,6
400	47	150	1,2	3,9	21	67	3,7
200	100	330	2,2	1,0	24	32	2,4
250	100	330	2,2	1,3	24,5	44	2,6
300	100	330	2,2	1,6	24,5	54	2,8
350	100	330	2,2	1,8	25	69	2,9
400	100	330	2,2	2,1	25	81	3,0
200	220	680	3,9	0,55	26,5	34	2,0
250	220	680	3,9	0,7	27	45	2,1
300	220	680	3,9	0,85	27	56	2,2
350	220	680	3,9	0,95	27,5	68	2,2
400	220	680	3,9	1,1	27,5	81	2,3

ECC 33 Fig. 1

U_b	R_a	R_g	R_k	I_a	μ	$U_{a\approx}/U_{g\approx}$	h
V	k Ω	k Ω	k Ω	mA			%
200	47	150	1,2	2,0	24,5	30,5	5,3
250	47	150	1,2	2,5	25	41	5,6
300	47	150	1,2	3,0	25	50	5,6
350	47	150	1,2	3,5	25	62,5	5,9
400	47	150	1,2	4,0	25,5	74	6,1
200	100	330	2,2	1,0	26,5	32	5,2
250	100	330	2,2	1,3	27	43	5,4
300	100	330	2,2	1,5	27	54,5	5,6
350	100	330	2,2	1,8	27,5	66,5	5,6
400	100	330	2,2	2,0	28	78,5	5,7
200	220	680	3,9	0,5	27	30,5	4,8
250	220	680	3,9	0,7	27,5	41	4,8
300	220	680	3,9	0,8	28	51	5,0
350	220	680	3,9	1	28	63	5,0
400	220	680	3,9	1,1	28	74,5	5,1

ECC 40 Fig. 1

U_b	R_a	R_g	R_k	I_a	μ	$U_{a\approx}/U_{g\approx}$	h
V	k Ω	k Ω	k Ω	mA			%
100	220	0,68	4,7	0,3	23	10	1,8
250	47	150	1,2	2,6	20	40	3,8
200	100	0,33	2,2	1,1	24	33	3,6
250	100	0,33	2,2	1,4	24	44	3,7
300	100	0,33	2,2	1,6	24	54	3,8
400	100	0,33	2,2	2,2	24	76	3,9
200	220	0,68	3,9	0,58	24	32	3,5
250	220	0,68	3,9	0,72	25	44	3,6
300	220	0,68	3,9	0,87	25	53	3,7
400	220	0,68	3,9	1,1	25	72	3,8

ECC 40 Fig. 2

U_b	R_a	R_g	R_k	I_a	μ	$U_{a\approx}/U_{g\approx}$	h
V	k Ω	k Ω	k Ω	mA			%
250	100	330	1,4	1,4	24	30	2,2
250	220	680	0,9	0,9	25	18	1,3

ECC 40 Fig. 5

U_b	R	I_a	μ	$U_{a\approx}$	h
V	k Ω	mA		V	%
250	100	2,5	740	30	1,9
250	220	2,0	780	18	1,2

ECC 40 Fig. 8

U_b	R	R_k	I_a	μ	U	h
V	k Ω	k Ω	mA		V	%
250	3,9	1	3	26	30	1,5
350	3,8	0,75	4,3	27,5	30	1,1

ECC 40 Fig. 7

U_b	I_a	I_a''	μ	U	h
V	mA	mA		V	%
250	1,12	0,55	27	18	1
350	1,57	0,78	27	30	1

E 80 CC Fig. 1

U_b	R_a	R_g	R_k	I_a	μ	$U_{a\approx}/U_{g\approx}$	h
V	k Ω	k Ω	k Ω	mA			%
200	47	150	1,2	1,86	18,5	20	3,3
250	47	150	1,2	2,45	18,5	30	3,8
300	47	150	1,2	3,15	18,5	40	4,0
350	47	150	1,2	3,8	18,5	50	4,1
400	47	150	1,2	4,4	18,5	60	4,2
200	100	330	2,2	1,0	20	22	3,1
250	100	330	2,2	1,3	20	32	3,4
300	100	330	2,2	1,65	20	42	3,5
350	100	330	2,2	1,95	20	52	3,6
400	100	330	2,2	2,3	20	63	3,7
200	220	680	3,9	0,52	21	19	2,3
250	220	680	3,9	0,67	21	29	2,6
300	220	680	3,9	0,83	21	38	3,0
350	220	680	3,9	0,99	21	47	3,1
400	220	680	3,9	1,15	21	58	3,2

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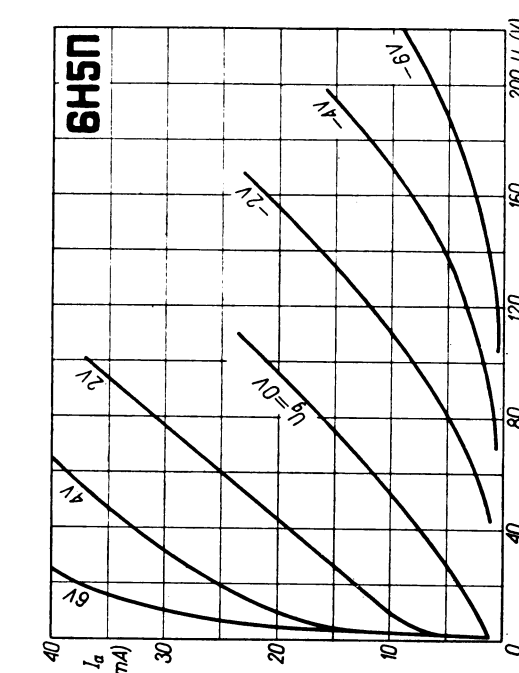
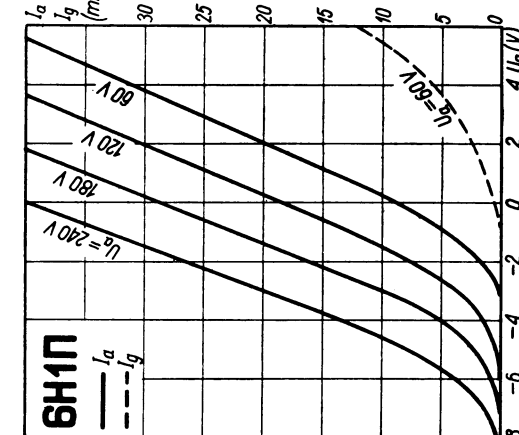
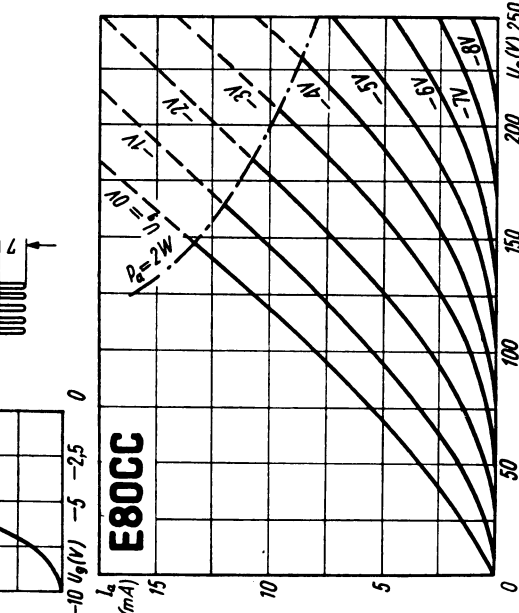
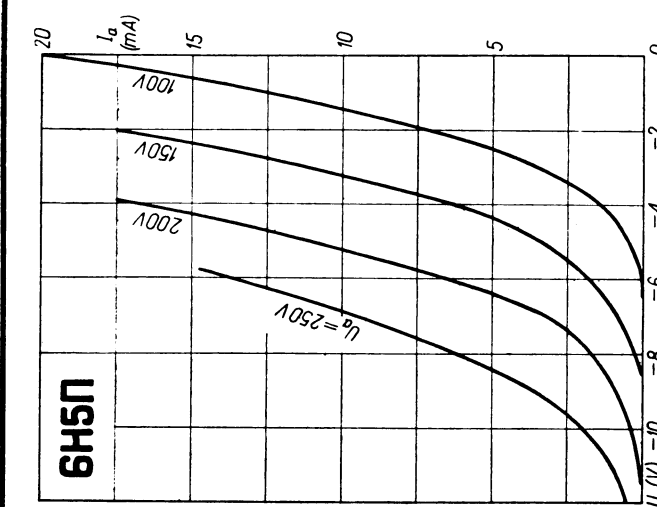
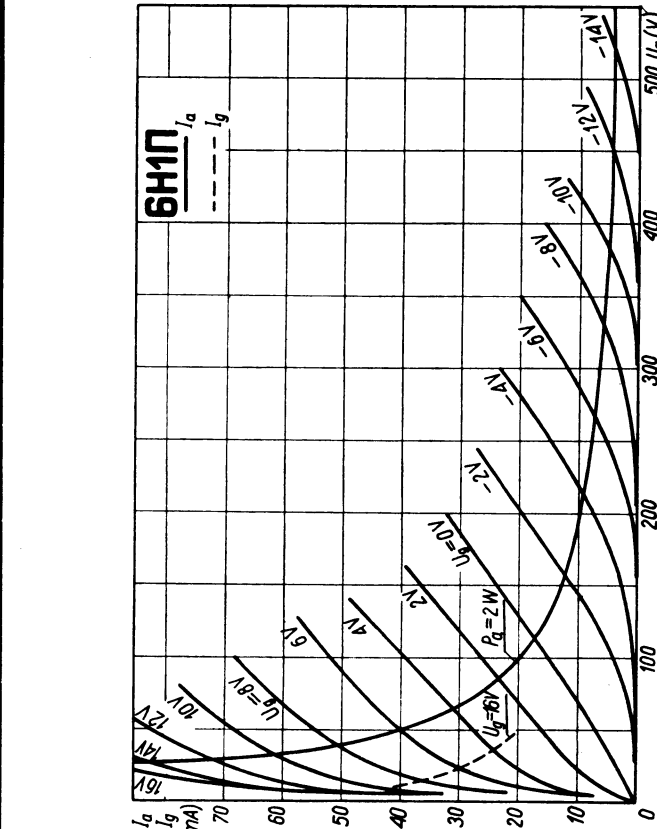
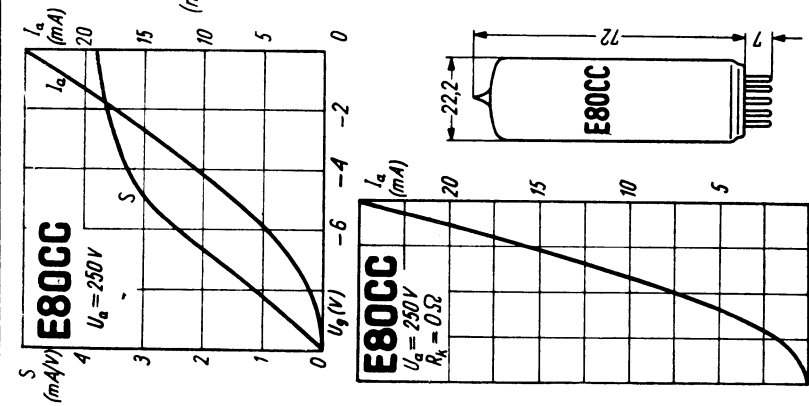
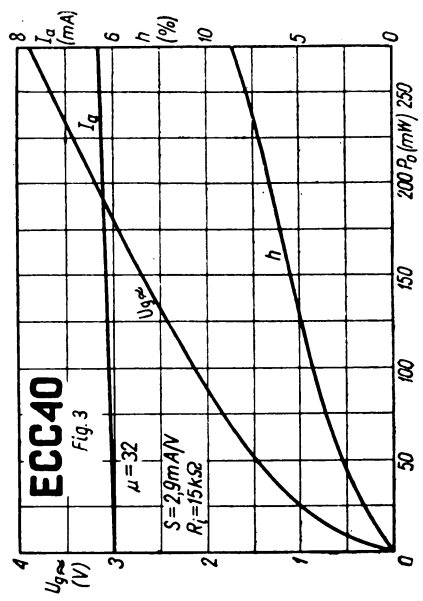
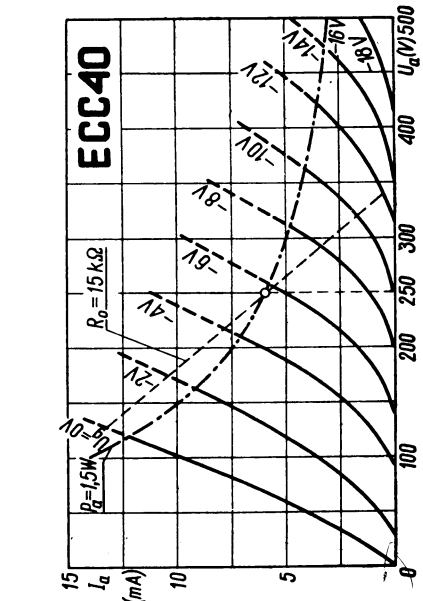
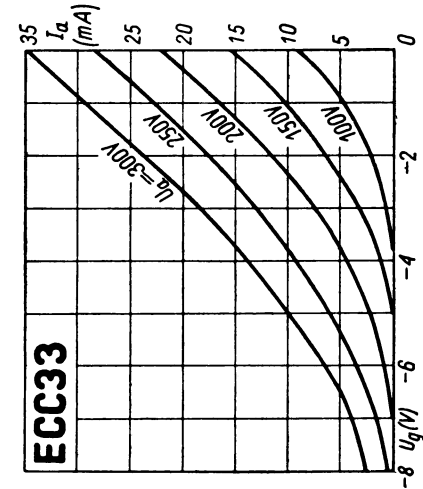
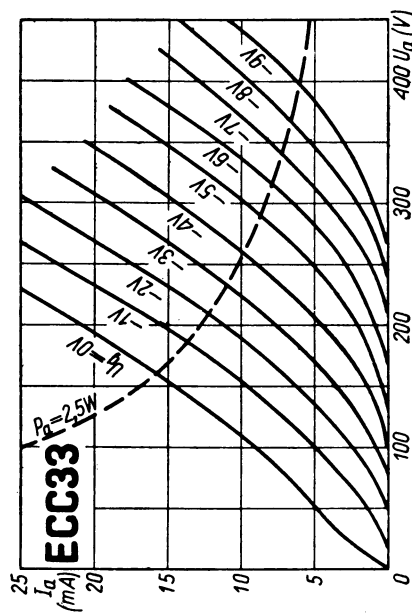
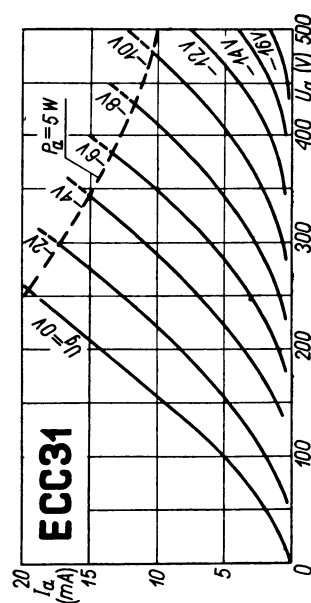
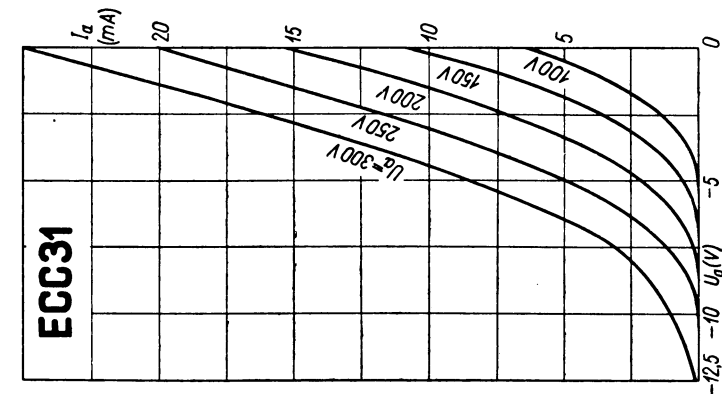
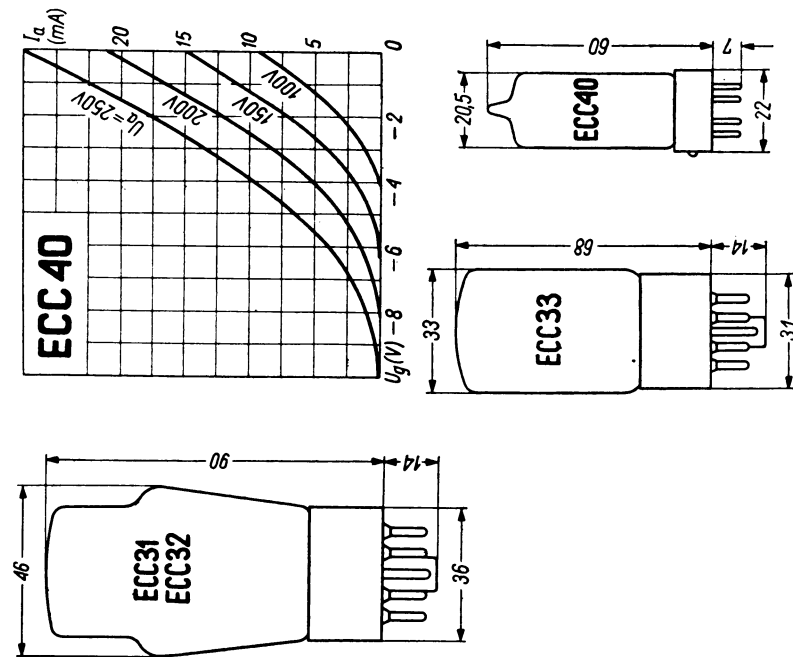
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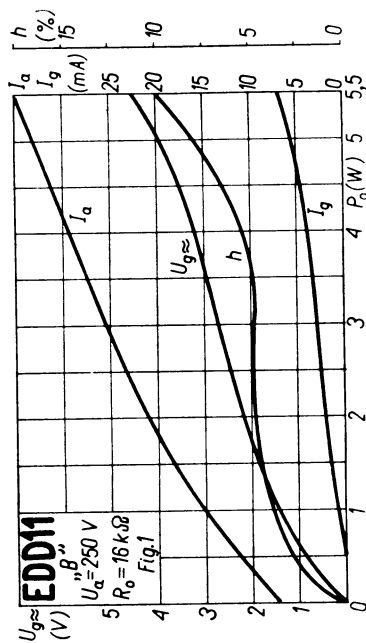
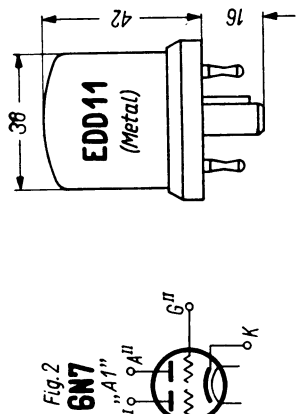
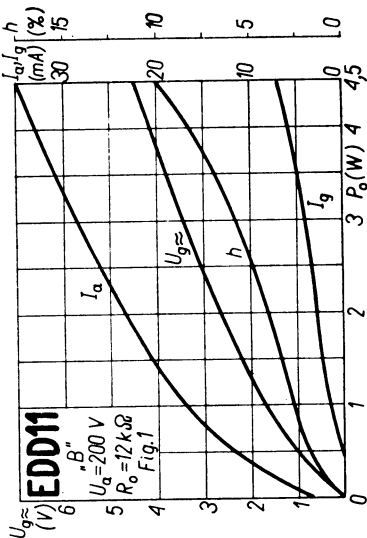
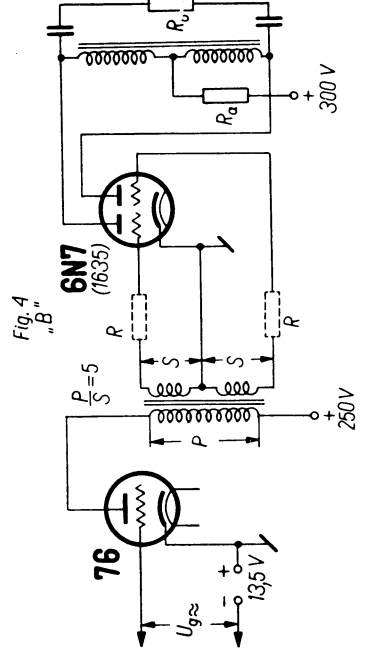
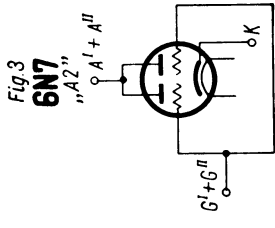
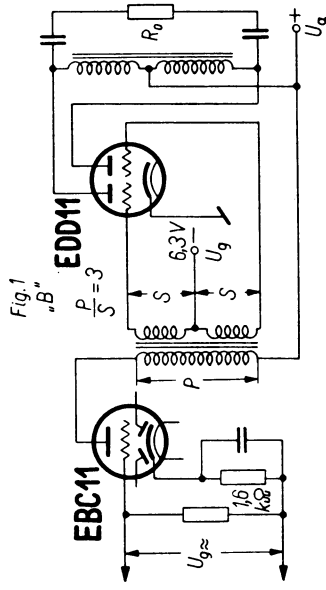
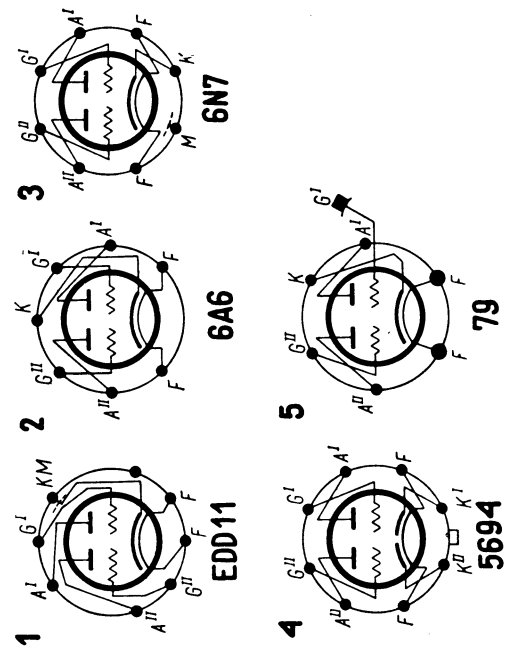


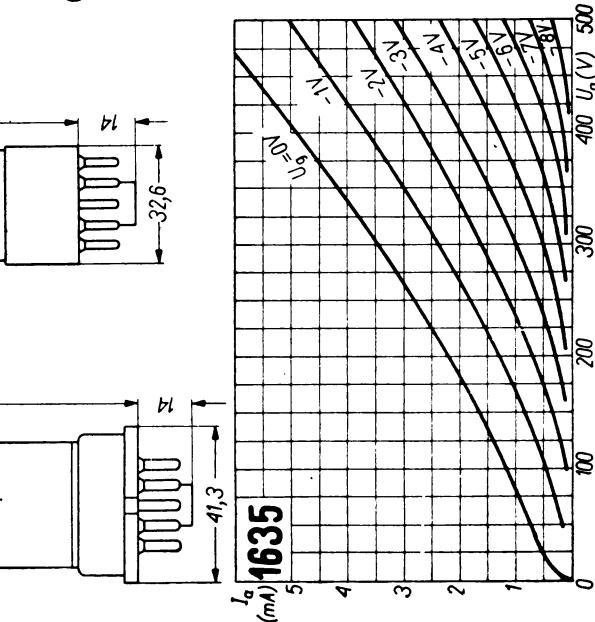
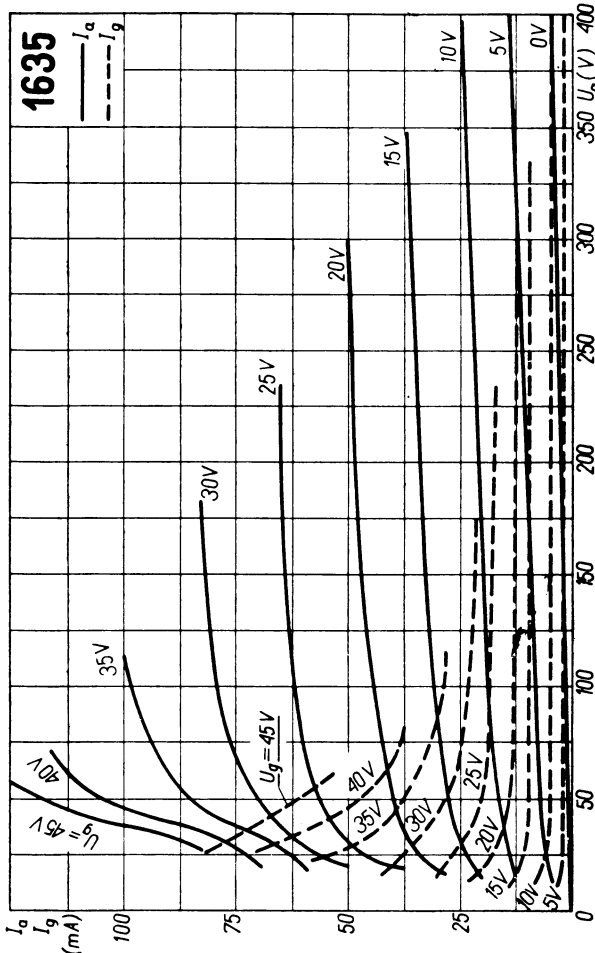
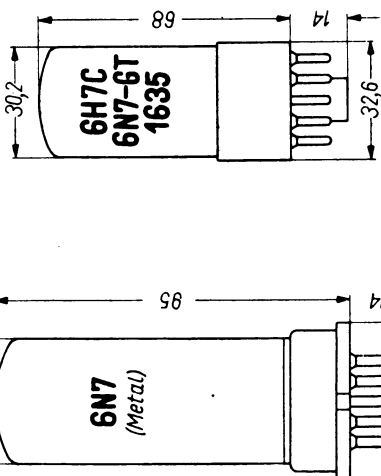
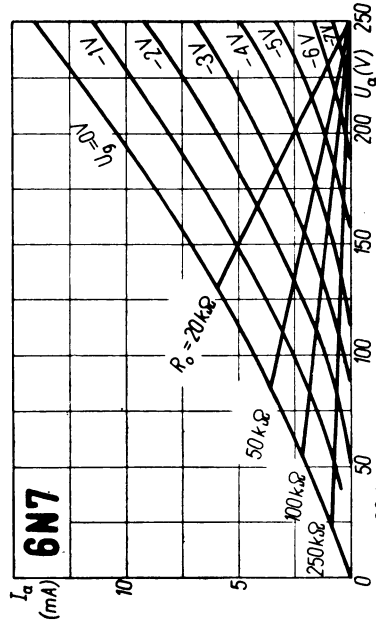
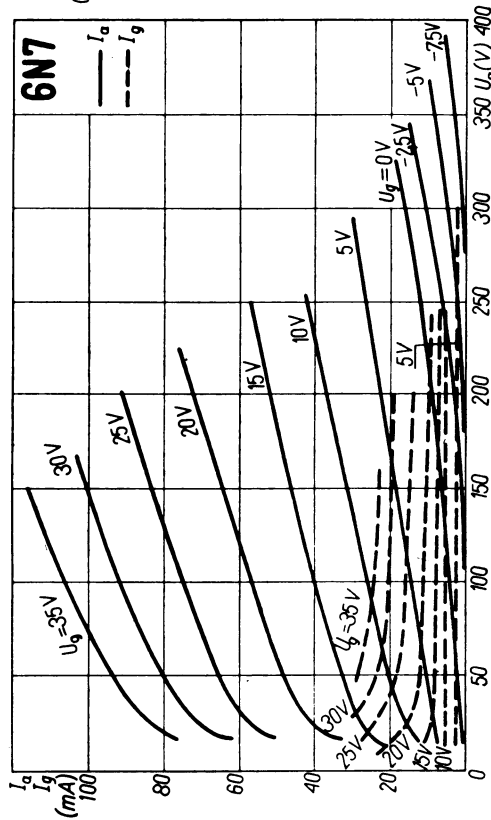
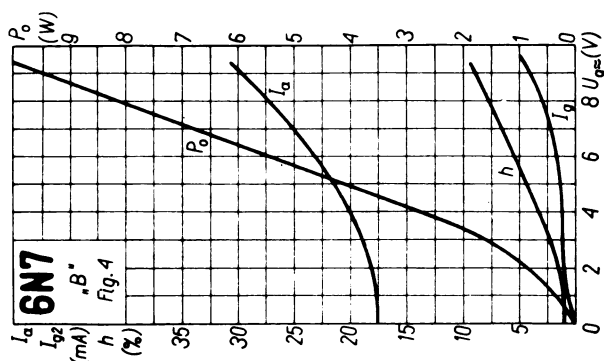
T.			U_f V	I_f A	Cl.	U_a V	U_g V	I_a mA	I_g mA	S mA/V	R_i k Ω	μ	R_{eff} Ω	R_a Ω	R_o k Ω	P_o W	h %
EDD 11	Tlif	1	6,3	0,4	stat. B B	200 200 250 250	0 -6,3 -6,3	12,5 (1,6÷17,5)×2 (3,5÷17,5)×2	maximum ($I_k = 25$ mA; $P_a = 3$ W; $U_{f/k} = 50$ V)	2,3 (Fig. 1) (Fig. 1)	12	28			12 16	4,5 5,5	10 10
6 A 6	amer	2	6,3	0,8	A 1	250	-5	3	(Fig. 2)	1,6	23	35			30	0,2	
6 N 7	int	3	6,3	0,8	A 2	250	-5	6	(Fig. 3)	3,1	11,3	35			20	0,4	
11 A 6	amer	2	11	0,45	A 2	300	-6	7	(Fig. 3)	3,2	11	35			40		
11 N 7	amer	3	11	0,45	B	300	0	(17,5÷35)×2	10×2	(Fig. 4)			0		8	10	4
53	amer	2	2,5	2	B	300	0	(17,5÷35)×2	11×2	(Fig. 4)			516	1000	8	10	8
5694	Ray	4	6,3	0,8		300		maximum ($P_a = 5,5$ W; $U_{f/k} = 90$ V)							7	5,5	
6 Y 7-G	int	3	6,3	0,6	B	180	0	7,6							14	8	
79	int	5	6,3	0,6	B	250	0	10,6	maximum ($P_a = 11$ W; $U_{f/k} = 90$ V)								
6 Z 7-G	amer	3	6,3	0,3	B	135 180	0 0	6 8,4							9 12	2,5 4,2	
1635	RCA	3	6,3	0,6	B	300 300 300	0 0 0	(3,3÷27)×2 (3,3÷27)×2	19×2 19,5×2 maximum	(Fig. 4) (Fig. 4)			0 516	0 1000	12 12	10,4 10,4	4 5

T.	$C_{g/k}$ pF	$C_{a/k}$ pF	$C_{g/a}$ pF	$C_{a/a}$ pF	$C_{g/g}$ pF	$C_{a/g}$ pF
6 N 7	1,5	2	1,5	0,4	0,03	0,01

Equivalents

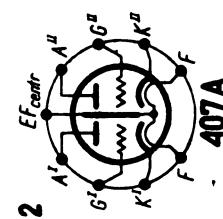
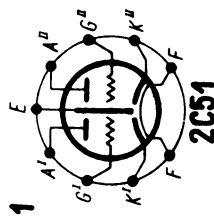
CK 5694	Ray = 5694	6 H 7	CCCP = 6 N 7
B 63	MOG = 6 A 6	6 H 7 C	CCCP = 6 N 7-GT
WTT-125	amer = 6 N 7	6 N 7-G	int = 6 N 7
		6 N 7-GT	int = 6 N 7





T.			U _f	I _f	Cl.	U _a	U _g	I _a	S	R _i	μ	R _k	R _o	P _o	h
2 C 51	int	1	6,3	0,3	A 1	130	-1,5	7,6	5,4	6,5	35	200			
6 CC 42	Tes	1	6,3	0,35	A 1	150	-2	8,2	5,5	6,5	35	240			
18 C 51 ¹⁾	SER	1	18	0,1	AB	300		(4,9 ÷ 6,3) × 2				800	27	1	10
407 A ¹⁾	int	2	20/40	0,1/0,05		300									

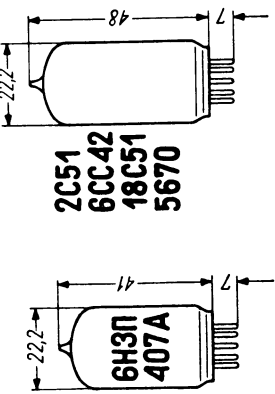
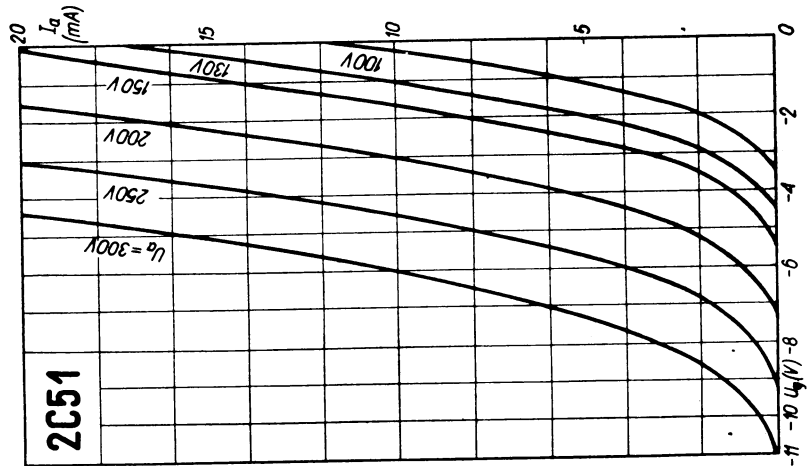
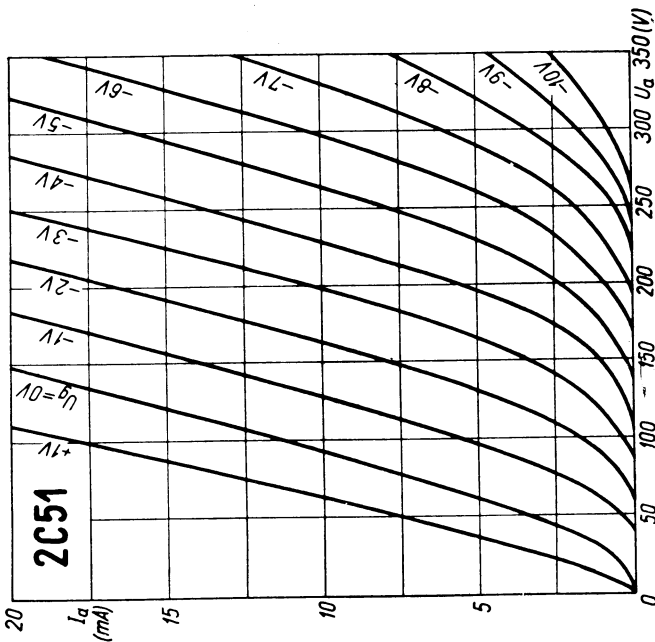
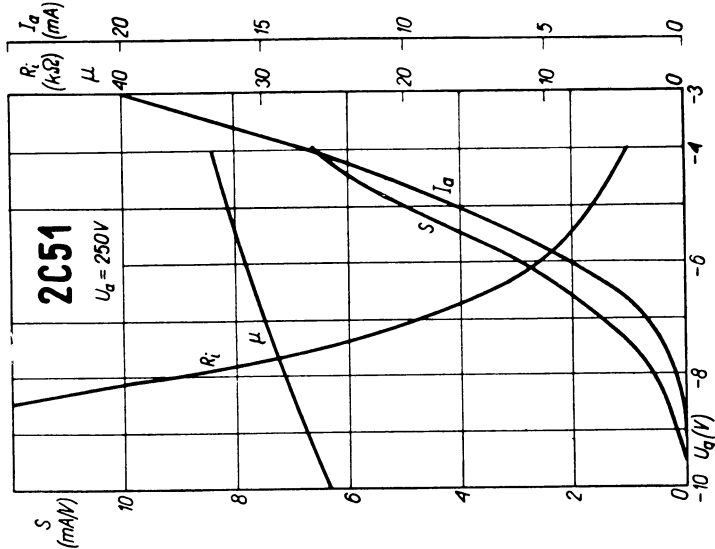
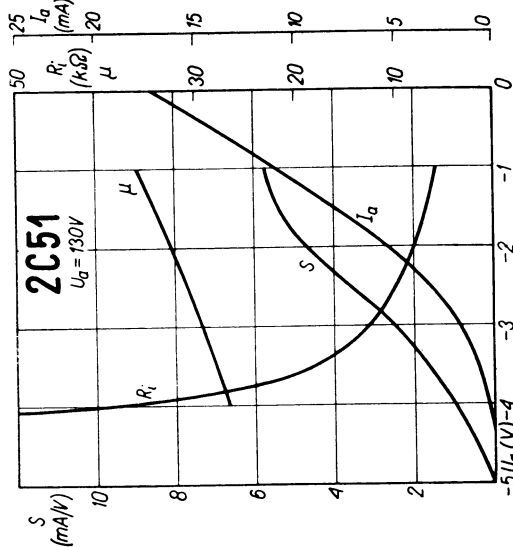
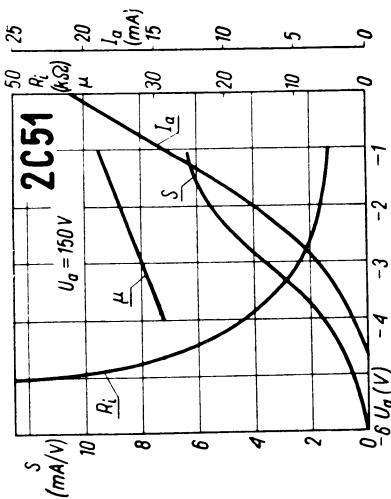
maximum (I_k = 18 mA; P_o = 1,5 W; f = 800 MHz; U_{flk} = 90 V)



Equivalents

CK 5670 ²⁾	Ray = 6 CC 42	396 A	WE = 2 C 51
CK 5670 WA ²⁾	Ray = 6 CC 42	5670 ²⁾	amer = 6 CC 42
GL 5670 ²⁾	GE = 6 CC 42	5670 WA ²⁾	amer = 6 CC 42
2 C 51 L ¹⁾	SER = 2 C 51	6385	
6 H 3 II	CCCP = 6 CC 42		

¹⁾ vide * 4, a, b, c = 10000, d, e, f, g (U_f = 6,3 (18; 20/40) V ± 5 %)
²⁾ vide * 4, a, b, c = 10000, f, g (U_f = 6,3 V ± 10 %)



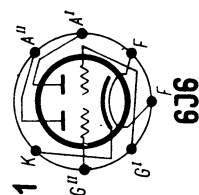
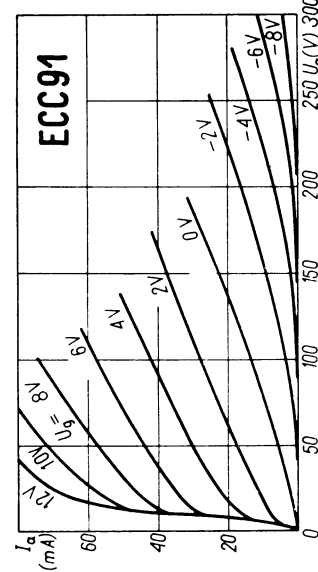
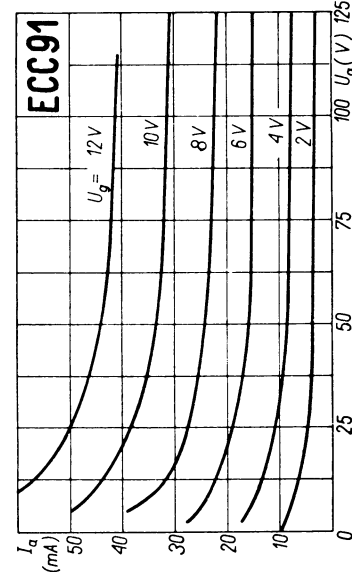
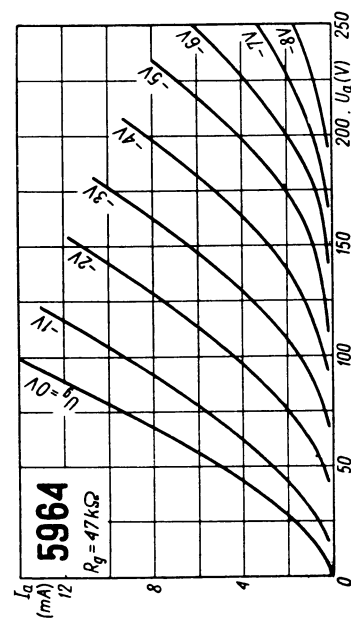
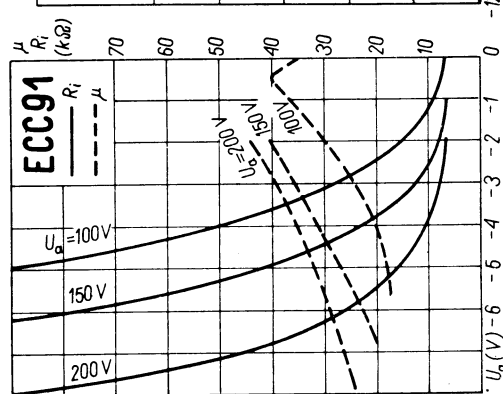
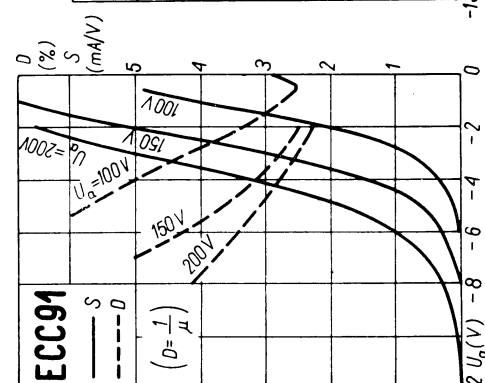
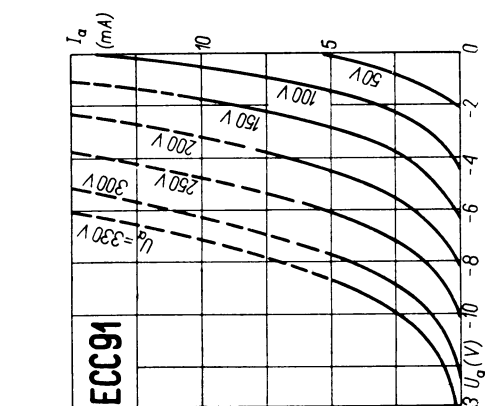
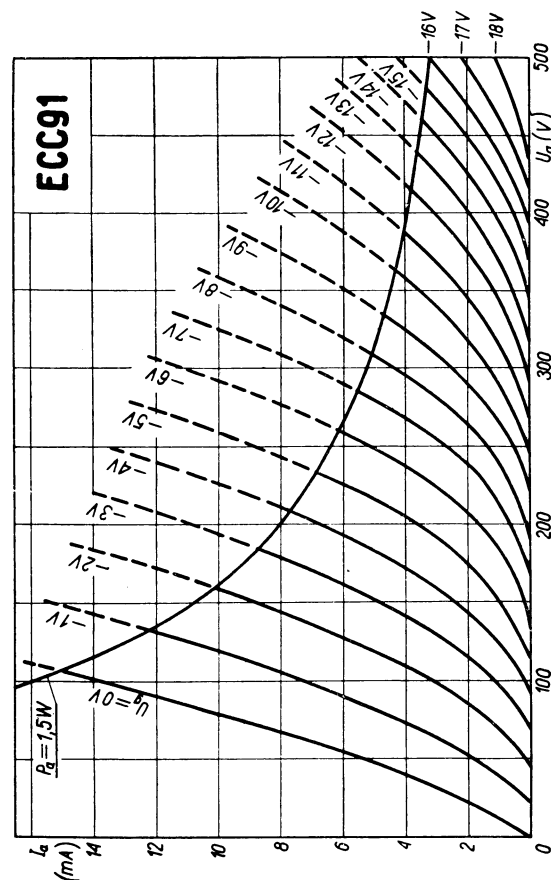
T.			U_f	I_f	Cl.	U_a	U_g	I_a	I_g	$S(S_c)$	R_i	μ	R_k	P_o
			V	A		V	V	mA	mA	mA/V	k Ω	V/V	Ω	W
5 J 6	amer	1	4,7	0,6	A 1 ($\approx$)	100	— 0,85	8,5		5,3	7,1	38	50	
6 J 6	int	1	6,3	0,45	A 1 ($\approx$)	200	— 4	7		3,6	10	36	400	
9 J 6	Fot	1	9,5	0,3	A 2 ($\approx$)	150	— 10	15 $\times$ 2	8 $\times$ 2	(f=80 MHz)			220	3,5
19 J 6	int	1	18,9	0,15	C tgr. Mixer.	300	— 40	15	8	(1,9)	10,2		800	1,5
						150	— 40	4,8						
						300		15		maximum ($P_o=1,5$ W; $U_{f/k}=100$ V; $f=600$ MHz)				
6 J 6 L ¹⁾	SER	1	6,3	0,33	A 1 ($\approx$)	100		6,5		5	7,5	37,5	68	
18 J 6 ¹⁾	SER	1	18	0,115	A 1 ($\approx$)	130		7,7		5,3	7,2	38,1	100	
						200		15		maximum ($P_o=1,3$ W; $U_{f/k}=90$ V; $f=600$ MHz)				
6 J 6-WA ²⁾	amer	1	6,3	0,45	A 1 ($\approx$)	100		8,5		6	6,3	38	50	
						330				maximum ($P_o=0,85$ W; $U_{f/k}=180$ V; $f=600$ MHz)				
5964	amer	1	6,3	0,45	A 1 ($\approx$)	100	— 0,45	9,5		6	6,5	39	50	
						250				maximum ($P_o=1,5$ W; $I_k=15$ mA)				
6045	amer	1	6,3	0,35	A 1 ($\approx$)	100		9		6,4	6	38	50	

¹⁾ vide * 4, a, b, c = 10000, d, e, f, g ($U_f=6,3$ (18) V $\pm$ 5 %)
²⁾ vide * 4, a, b, c = 10000, f ($U_f=6,3$ V $\pm$ 10 %)
³⁾ vide * 4, a, b, f, g ($U_f=6,3$ V $\pm$ 10 %)

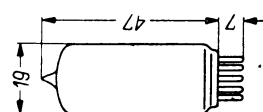
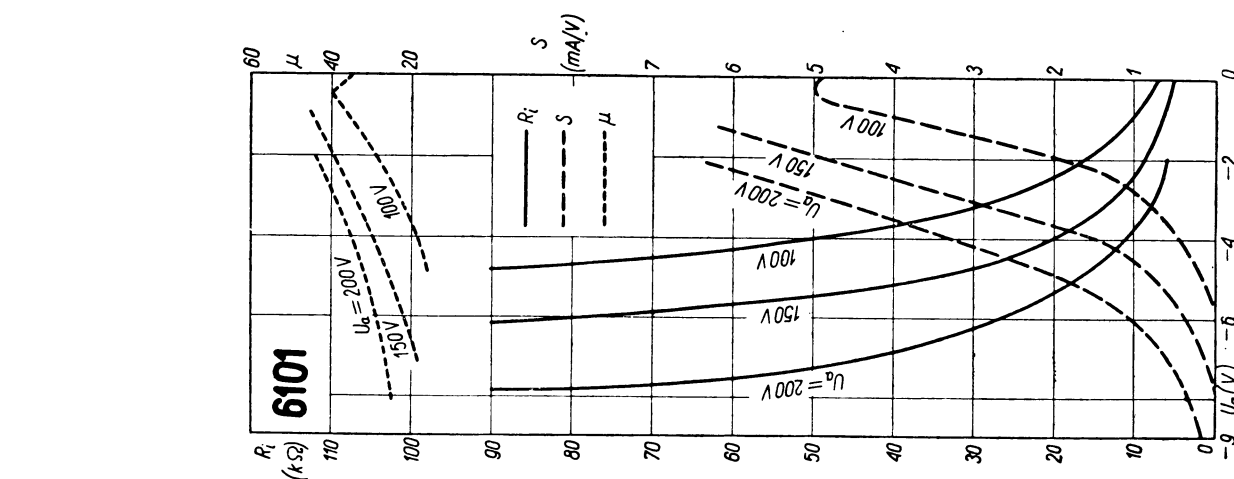
Equivalents

T.		$C_{g/k}$	$C_{d/k}$	$C_{g/a}$	$C_{k/f}$	vide
		pF	pF	pF	pF	
6 J 6	I-II triod.	2,0	0,4	1,6	5,4	*5
6 J 6-L	I triod.	2,6	1,6	1,5		*6
6 J 6-WA	II triod.	2,6	1,0	1,5		*6
5964	I-II triod.	2,1	0,4	1,3		*5
6045	I-II triod.	2,0	0,45	1,3		*5

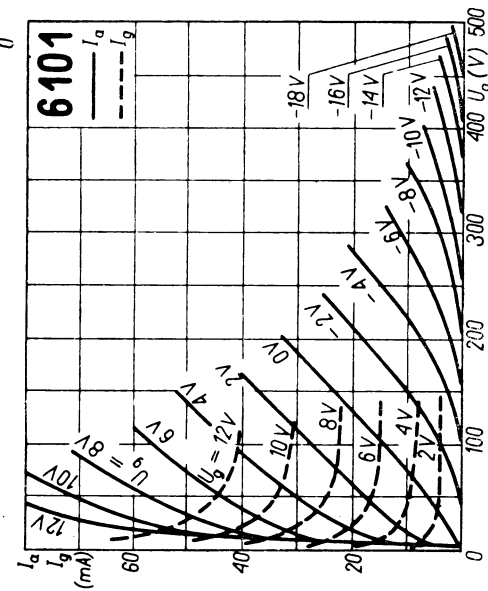
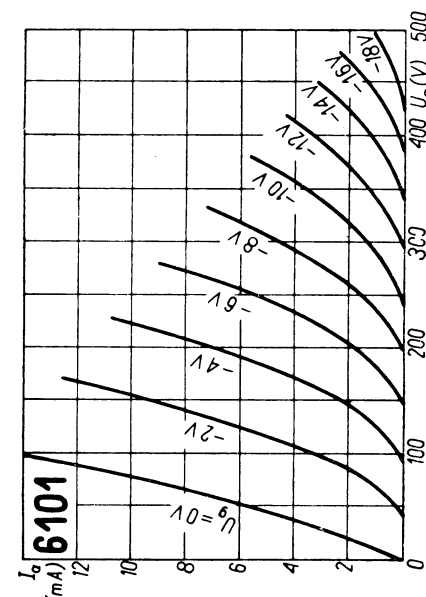
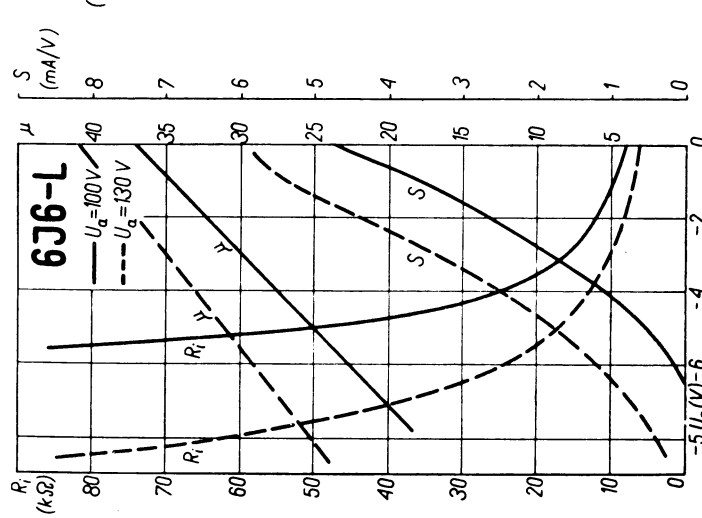
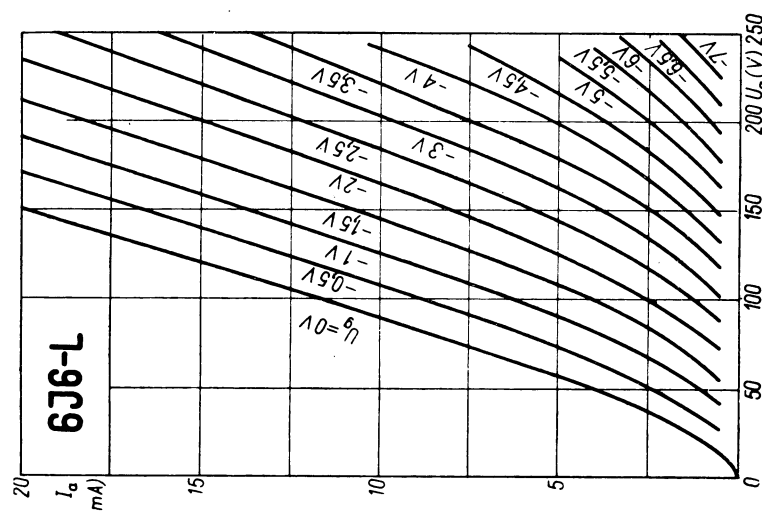
A 4434	amer	= 6 J 6	6 J 6-R	Dar	= 6 J 6
CK 6101 ²⁾	Ray	= 6 J 6-WA	6 J 6-W ²⁾	amer	= 6 J 6
ECC 91	eur	= 6 J 6	6 Ж 6 II	CCCP	= 6 J 6
ECC 91 W ²⁾	eur	= 6 J 6	6 H 15	CCCP	= 6 J 6
HF 2025	RFT	= 6 J 6	6 H 15 II	CCCP	= 6 J 6
M 8081 ²⁾	Mul	= 6 J 6	6099 ²⁾	amer	= 6 J 6-WA
OSW 2025	RFT	= 6 J 6	6101 ²⁾	amer	= 6 J 6-WA
T 2 M 05	SFR	= 6 J 6	6535 ³⁾	amer	= 6 J 6
6 CC 31	Tes	= 6 J 6	6927 ¹⁾	amer	= 6 J 6-L
6 J 6-A	amer	= 6 J 6			



6J6



6J6
6J6-L
6J6-WA
5964
6045



T.			U_f V	I_f A	Cl.	U_a V	U_g V	I_a mA	S mA/V	R_i k Ω	μ V/V	R_k Ω	maximum			
													U_a V	I_k mA	P_a W	U_{fk} V
ECC 70	Mul	1	6,3	0,3	A 1	100		6,5	5,4	6,5	35	150	150	22	1	200
E 92 CC²⁻⁸⁾	eur	2	6,3	0,4	stat.	150	-1,7	4,5 ÷ 12,5	4,5 ÷ 7,5	8,3	50	(200)	300	15	2	100
E 180 CC³⁻⁸⁾	Phl	5	6,3/12,6	0,4/0,2	{stat. stat.}	100	-0,8	8,5	7,8	6,4	50	0				
SN 955 B	Syl	1	6,3	0,45	A 1	150	-1,85	6,3 ÷ 10,7	5,3 ÷ 8,2	7,2	46	(220)	275	20	2	100
4 BC 8	amer	3	4,2	0,6	A 1	150		10	6,2	5,6	35	220	250	20	2	200
6 BC 8	amer	3	6,3	0,4		100		8,5	5,3	7,1	38	50			1	
6 BF 7	amer	1	6,3	0,3	{A 1 Mixer}	150		4,8	1,9	10	820	($U_{osc} = 2,1V$)				
5 BK 7	amer	3	4,7	0,6	A 1	100		9	6,1	6,1	37	120				
6 BK 7	int	3	6,3	0,45	A 1	150		18	8,5	4,7	40	56	300 ($U_g = -50V$)	2,7		90
12 AV 7	amer	5	6,3/12,6	0,45/0,225												
5 BK 7-A	amer	3	4,7	0,6	A 1	150		18	9,3	4,6	43	56	300 ($U_g = -50V$)	2,7		90
6 BK 7-A	amer	3	6,3	0,45		150		9	6	5,8	35	220	250	20	2	200
6 BQ 7	amer	3	6,3	0,4	A 1	150		10								
4 BQ 7-A	amer	3	4,2	0,6	A 1	150	-1	10	7,2	5	36	220	150	20	2	200
4 CX 7	amer	4	4,2	0,6	Casc.	250		16	10				($S = 50 \mu A/V$, $U_g = -6V$)			
5 BQ 7-A	amer	3	5,6	0,45	A 1	65	-1	9	7,5	25			150	20	2	200
6 BQ 7-A	int	3	6,3	0,4	Casc.	125	-0,5	11								
6 CX 7	amer	4	6,3	0,4												
8 BQ 7-A	int	3	8,4	0,3												
4 BS 8	amer	3	4,5	0,6	A 1	150		10	7,2	5	36	220	150	20	2	200
6 BS 8	amer	3	6,3	0,4		250		16	10				($S = 50 \mu A/V$, $U_g = -6V$)			
4 BX 8	amer	3	4,5	0,6	A 1	65	-1	9	7,5	25			150	20	2	200
6 BX 8	amer	3	6,3	0,4	Casc.	125	-0,5	11								
4 BZ 7	amer	3	4,2	0,6	A 1	150		10	6,8	5,6	38	220	250	20	2,2	200
5 BZ 7	amer	3	5,6	0,45		125		10	8	5,6	45	100	250	20	2,2	200
6 BZ 7	amer	3	6,3	0,4		250		15	10							
4 BZ 8	amer	3	4,2	0,6	A 1	150	-0,5	10	6,8	5,3	36	220				
6 BZ 8	amer	3	6,3	0,4	Casc.	250		15	10	5	25					
6 CH 7	TS	4	6,3	0,4	A 1	150		10	6,8	5,3	36	220				
6 H 16 B	CCCP	7	6,3	0,4	stat.	100	-2,4	8	5	5	25					
5635	Syl	6	6,3	0,45	A 1	100	-1	4,8	3,8	10	38	100				

¹⁾ vide *4, a, b, c, d, e, f, g ($U_f = 6,3V \pm 5\%$);

²⁾ vide *4, c = 10000; $U_f = 6,3V \pm 5\%$; $U_g(max) = +0,5 \div -100V$; $I_g(max) = 0,25mA$; $I_k(impulse \leq 10 \mu sec) = 75mA$;

³⁾ vide *4, c = 10000; $U_f = 6,3(12,6)V \pm 5\%$; $U_g(max) = +1 \div -100V$; $I_g(max) = 2mA$; $I_k(impulse \leq 10 \mu sec) = 200mA$;

$I_g(imp) = 50mA$;

⁴⁾ vide *4, a, b, e ($U_f = 6,3V \pm 10\%$);

⁵⁾ vide *4, a, b, g ($U_f = 6,3V \pm 10\%$);

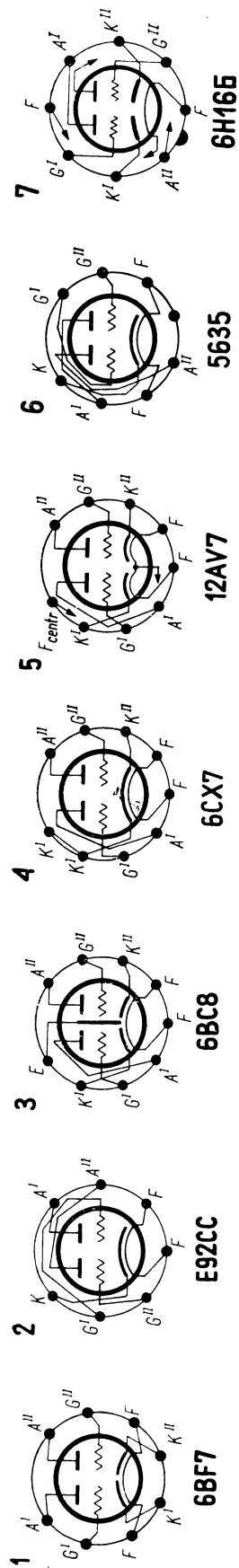
⁶⁾ vide Fig. 1; ⁷⁾ vide Fig. 2; ⁸⁾ vide *3

Equivalents

ECC 962²⁾	RFT = E 92 CC
6 BF 7-A⁴⁾	amer = 6 BF 7
6 BF 7-W⁵⁾	amer = 6 BF 7
6 BG 7	amer = 6 BF 7
6 BK 7-B	amer = 6 BK 7-A
6021¹⁾	amer = ECC 70

T.			U_f V	I_f A	Cl.	U_a V	U_g V	I_a mA	S mA/V	R_i k Ω	μ V/V	R_k Ω	maximum			
													U_a V	I_k mA	P_a W	U_{fk} V
5965	amer	5	6,3/12,6	0,45/0,225	A 1	150	(max -150V)	8,2	6,5	7,2	47	220	330	16,5	2,4	200
6414	GE	5	6,3/12,6	0,45/0,225	A 1	180	-2	8	5,5	7,7	42,5					
6829	GE	5	6,3/12,6	0,45/0,225	A 1	150		8,5	6,7	7	47	220				

T.			$C_{g/k+f+e}$		$C_{g/a}$		$C_{a/k}$		$C_{f/k}$		$C_{a/a}$		$C_{k/g+f+e}$		$C_{a/g+f+e}$		$C_{a/a+g}$	
			pF		pF		pF		pF		pF		pF		pF		pF	
ECC 70	I	triad.	2,4	0,28	1,5													
E 92 CC	II	triad.	2,4	0,32	1,5													
E 180 CC	I	triad.	3,5	0,3	2,6													
6 BC 8	II	triad.	3,5	0,36	2,4													
6 BF 7	I	triad.	3,5	0,55	2,2													
6 BK 7	II	triad.	3,5	0,5	2,3													
6 BK 7-A	I-II	triad.	2,5	1,3	1,4													
6 BQ 7-A	I	triad.	2	0,3	1,5													
6 BS 8	II	triad.	3	1,1	1,9													
6 BZ 7	I	triad.	3	1	1,8													
6 CX 7	II	triad.	3	0,9	1,8													
12 AV 7	I	triad.	2,85 ⁶⁾	1,35 ⁶⁾	1,15													
5965	II	triad.	4,95 ⁷⁾	2,27 ⁷⁾	1,15													
	I	triad.	2,4 ⁶⁾	1,3 ⁶⁾	1,2													
	II	triad.	4,2 ⁷⁾	1,7 ⁷⁾	1,9													
	I-II	triad.	3,1	0,5	3													
	I	triad.	3,8	0,38	3													



6BQ7-A

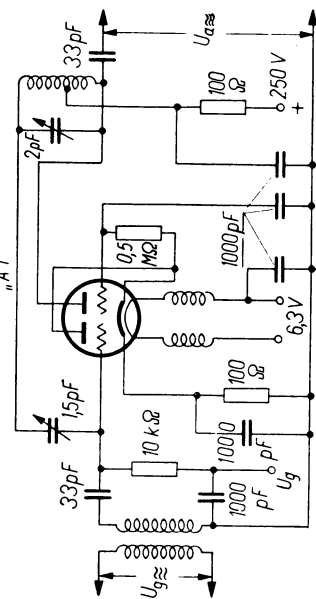
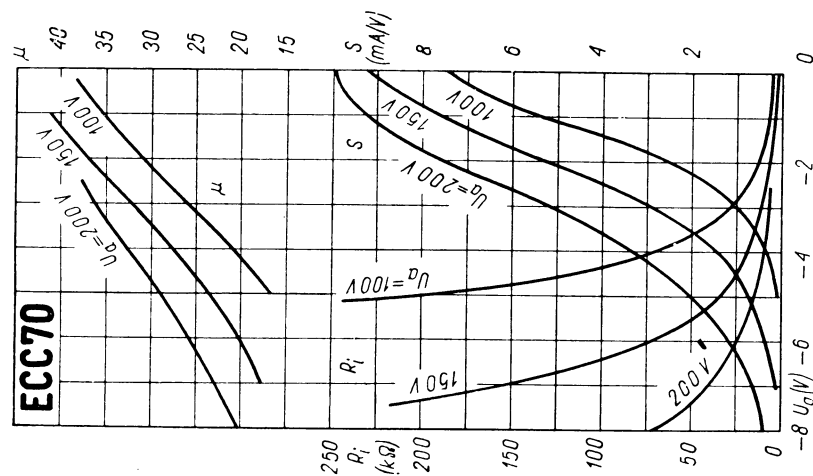
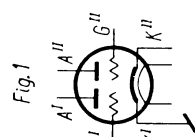
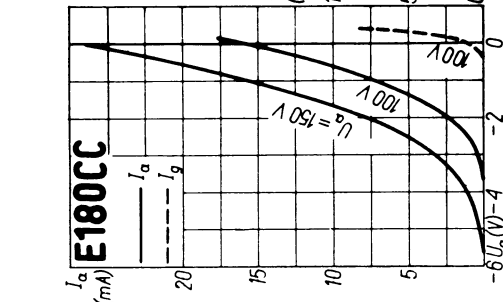
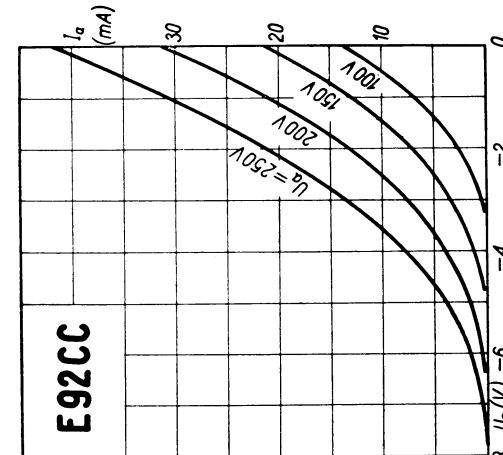
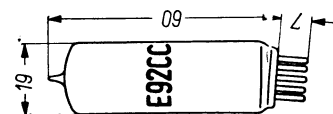
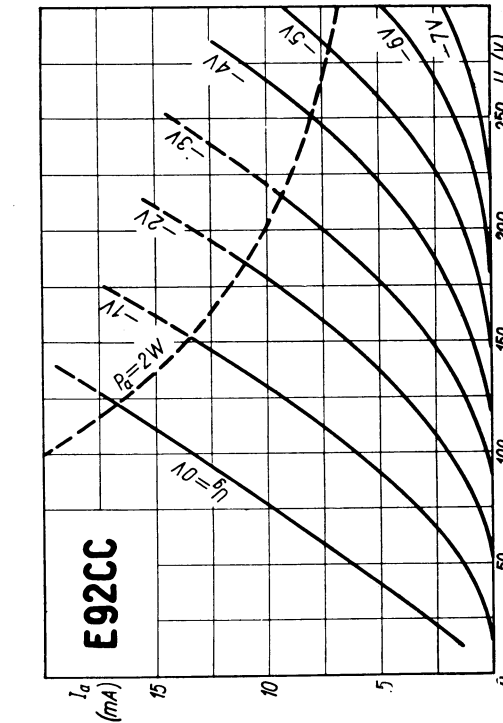
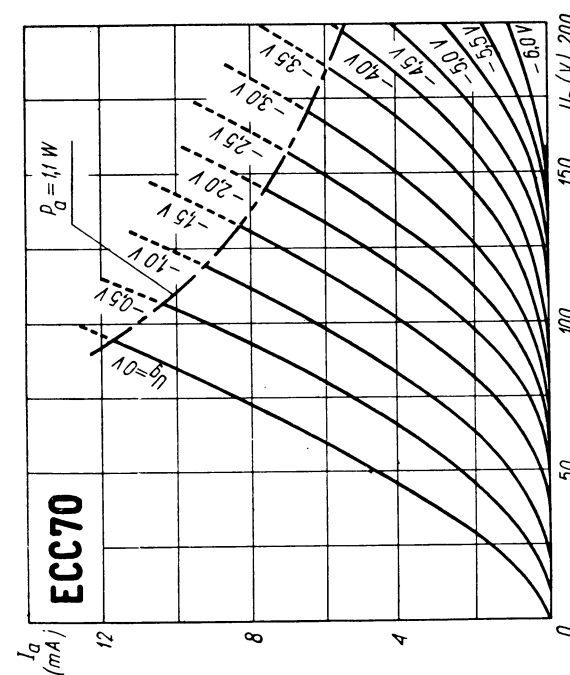
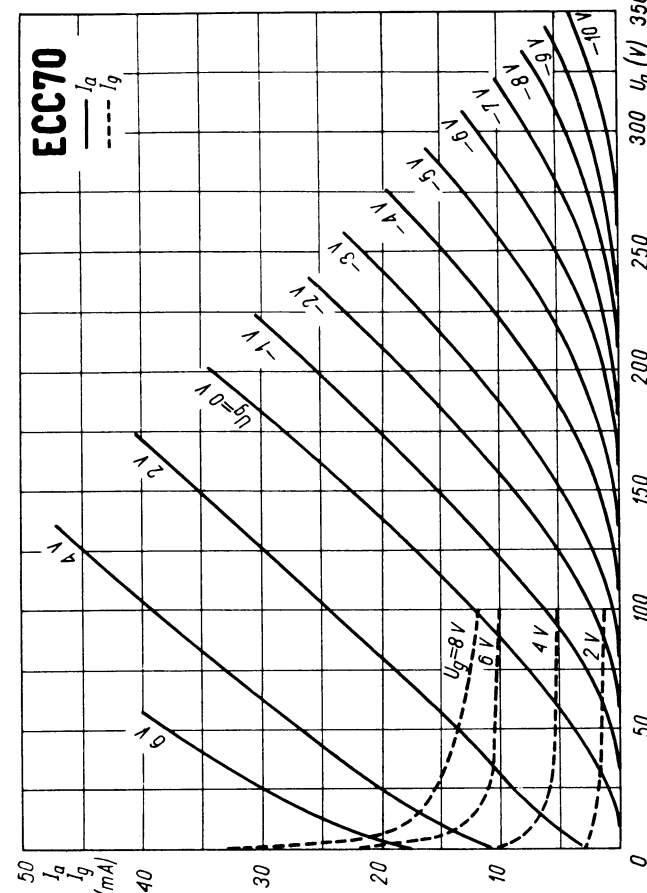
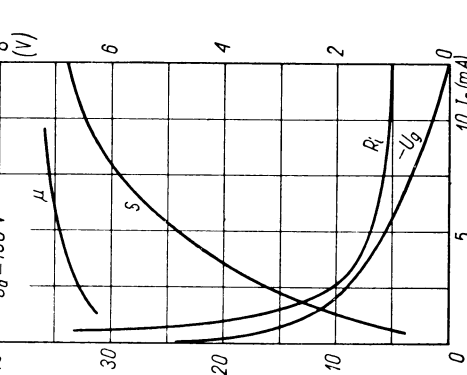
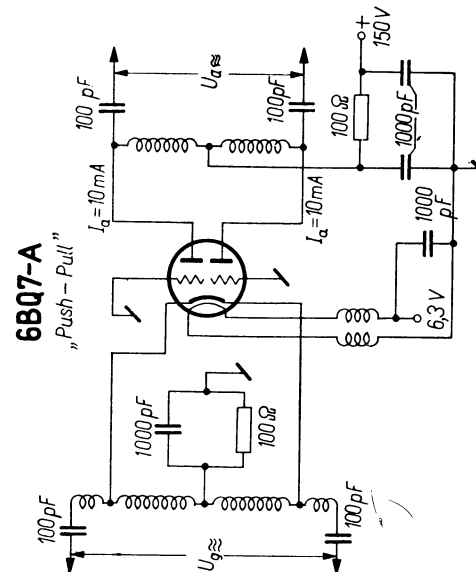
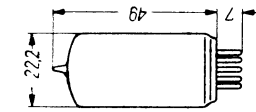
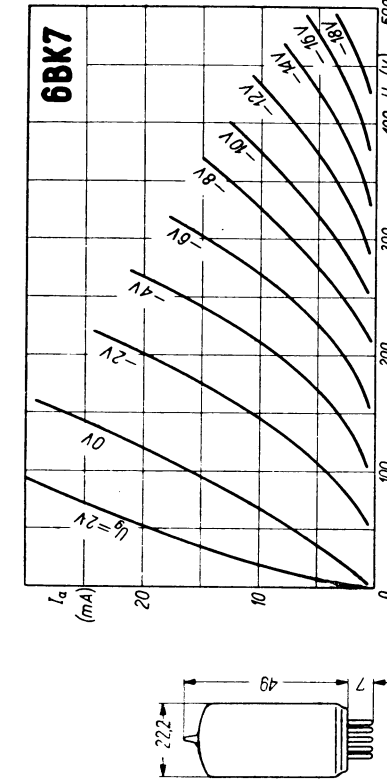
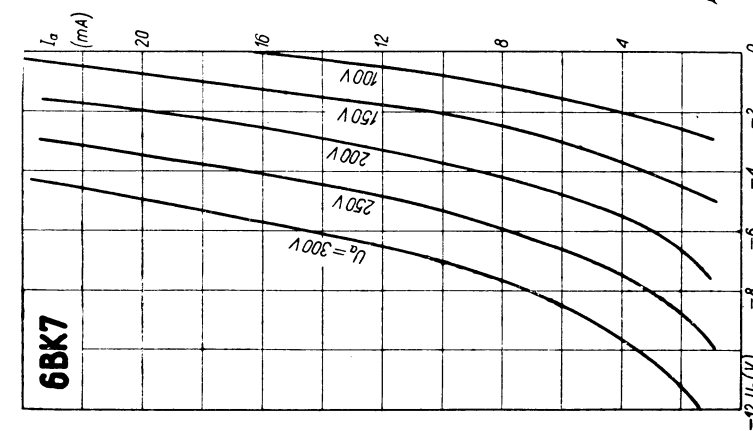
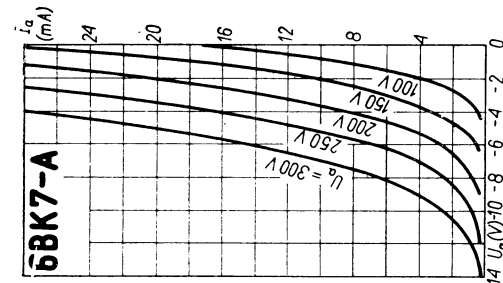
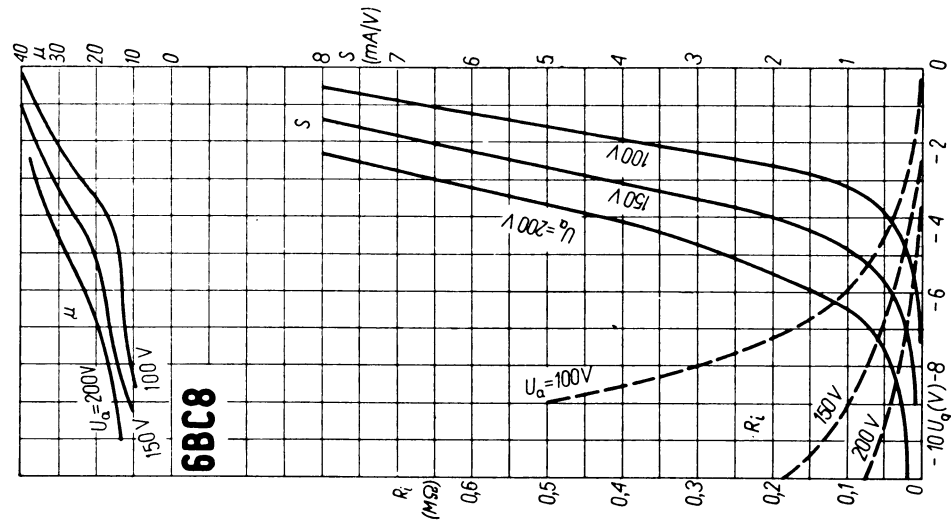
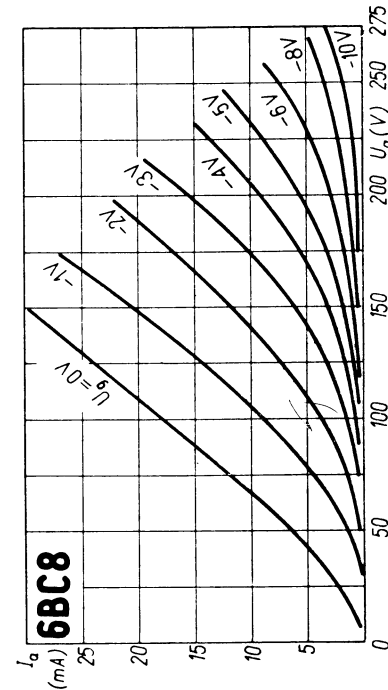
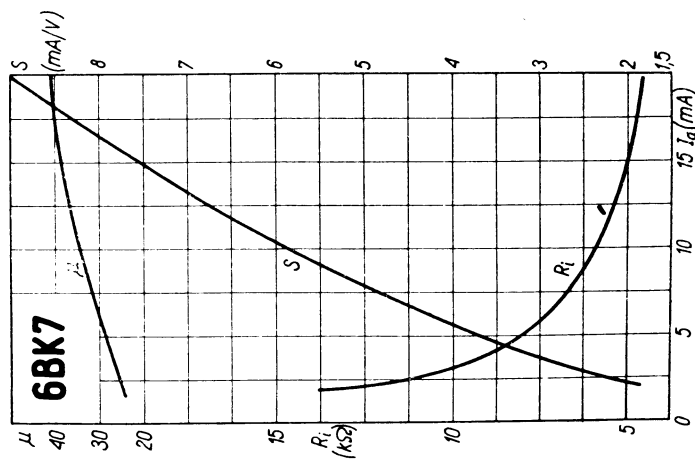
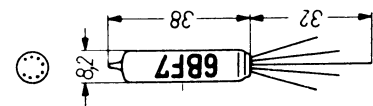
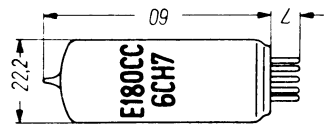
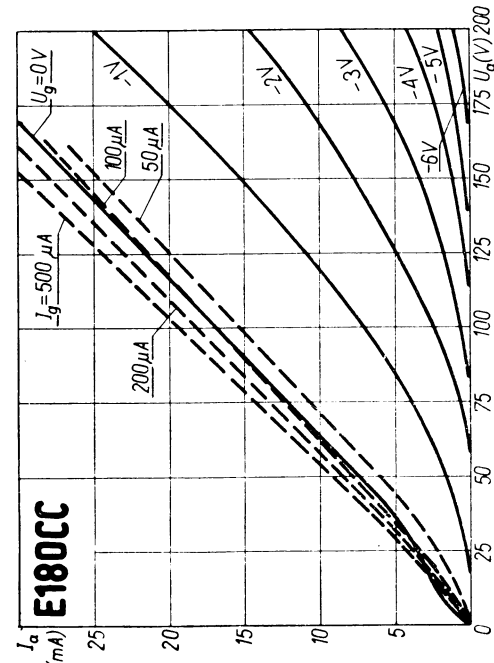
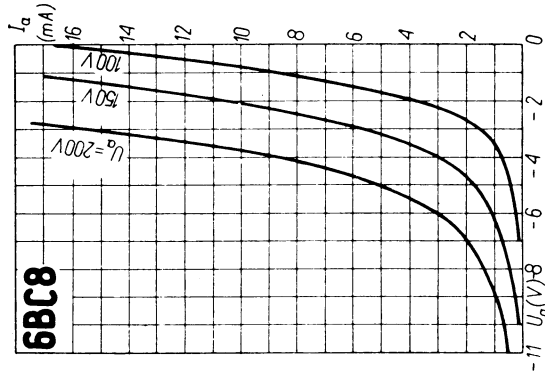


Fig. 2

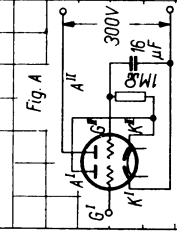
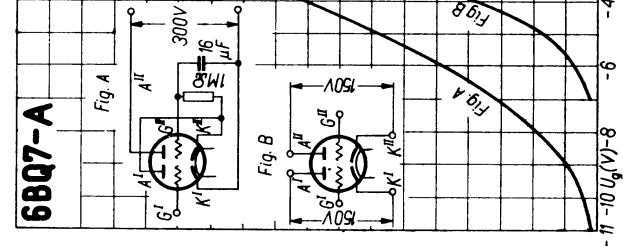
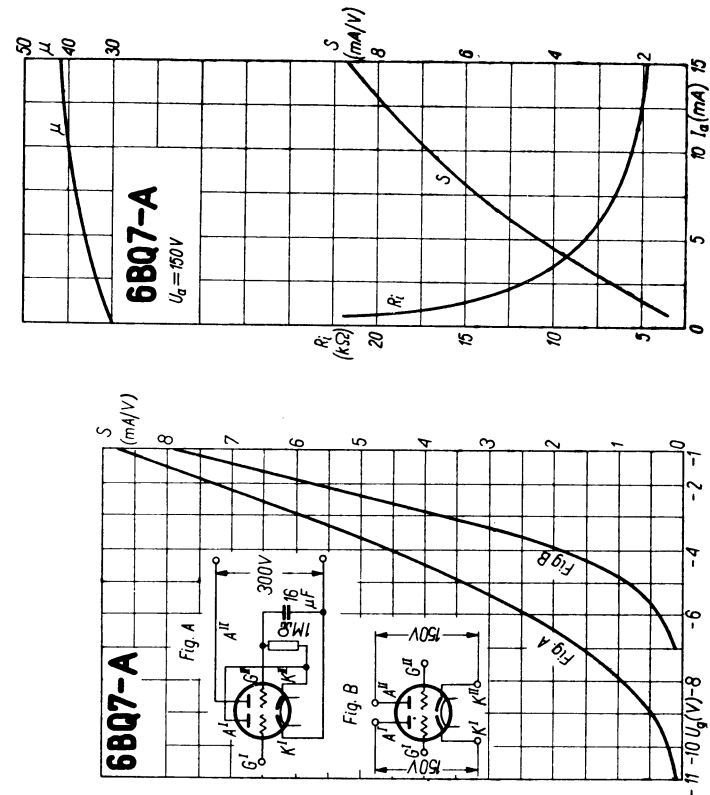
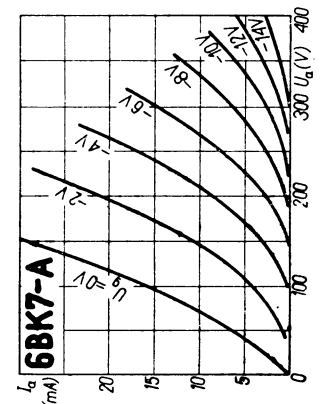
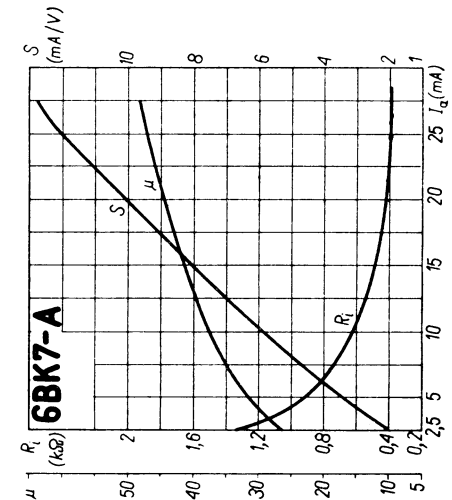


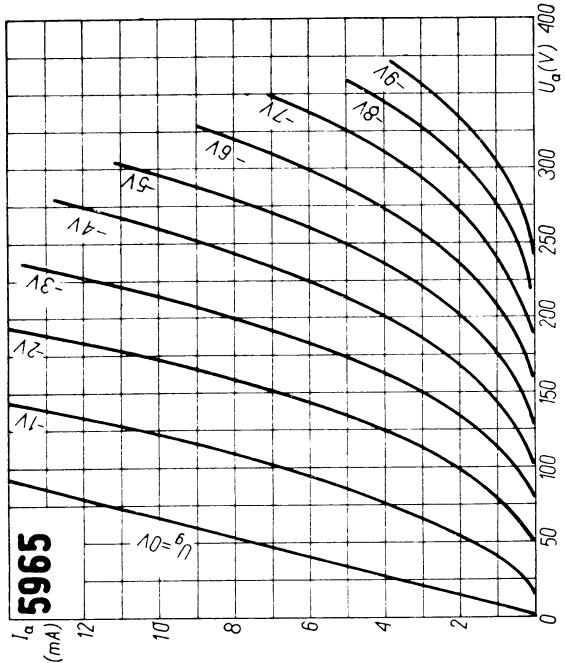
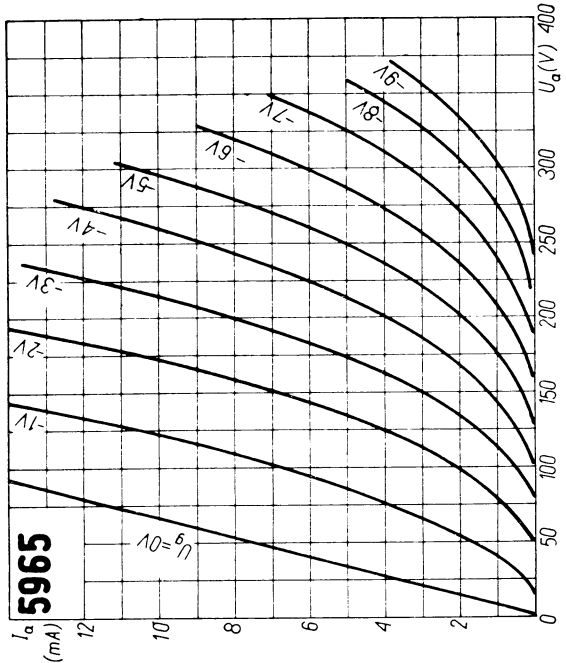
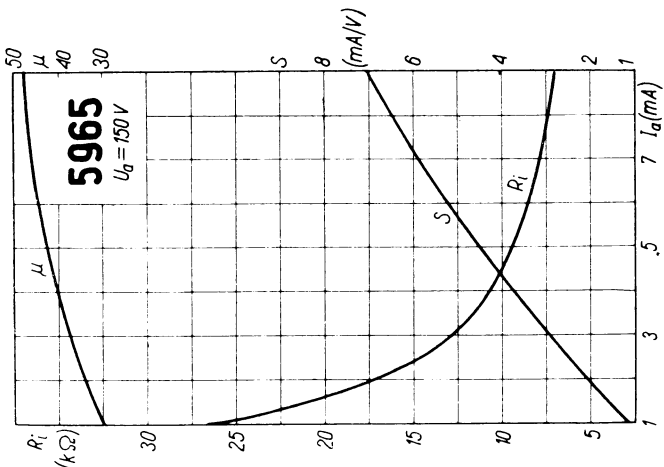
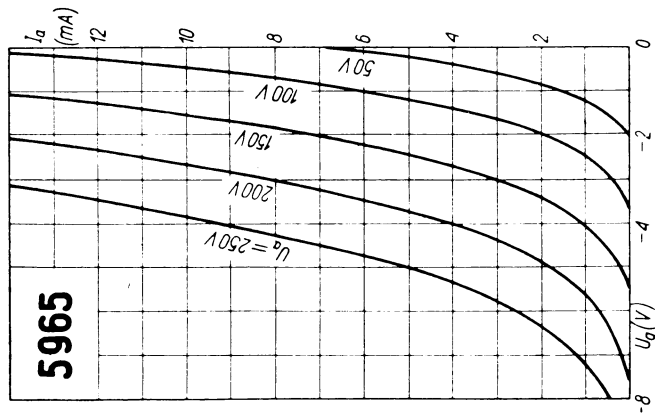
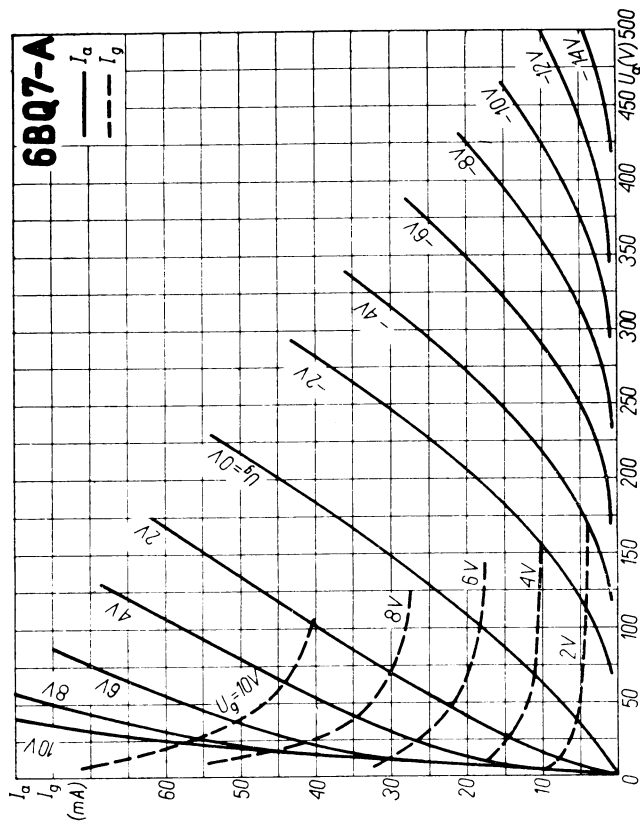
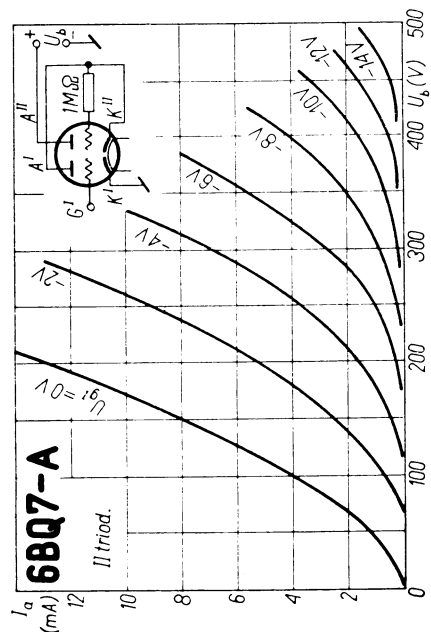
6BQ7-A





6BC8
6BK7-A
6BK7-A
6BS8
6BZ7
6BZ8
6CX7
12AV7
5965





T.			U_f V	I_f A	CI.	U_a^* V	U_b V	U_g V	U_{osc} V	I_a mA	S mA/V	R_i kΩ	μ V/V	R_a kΩ	R_o kΩ	$U_{g \approx}$ V	P_o W	h %
ECC 88 PCC 88 E 88 CC ¹⁾	eur	1	6,3	0,365	{ stat. A 1 B B Casc. Mixer Mixer Mixer }	90 220 200 200	100 60 90 150	1,3 6,8 6 6 9	2 2,5 3	15 6,5 ÷ 9,2 (5 ÷ 9) × 2 (5 ÷ 13,5) × 2	12,5	2,6	33	(R _k = 680 Ω)	20 22 10	4,5 4 4	0,5 1,2 1,5	7 3 4
ECC 89 PCC 89	Mul Mul	2 2	6,3 7,2	0,365 0,3	{ stat. }	220 90 130	-	-100 -1,2 -50	-	maximum (P _a = 1,5 W; I _k = 20 mA; I _k (impulse) ≤ 200 μsec) = 100 mA; U _g (impulse) = -200 V; U _{f+/k-} = 60 V; U _{f-/k+} = 120 V maximum (P _a = 1,8 W; I _k = 22 mA; U _{f-/k+} = 180 V)	15 12 34	12,5 2,9 3,5 4,1	7 7,7 6,1 3,9	0 1 3,9	-	-	-	-

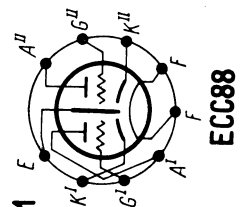
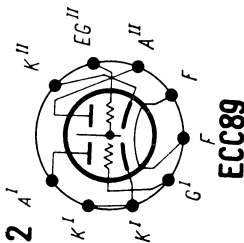
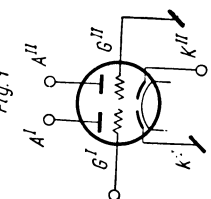
T.	$C_{g/k+f+e}$ pF	$C_{a/k+f+e}$ pF	$C_{g/a}$ pF	$C_{a/k+f}$ pF	$C_{g/k+f}$ pF	$C_{k/f}$ pF	$C_{a/k}$ pF	$C_{a/g+f+e}$ pF	$C_{k/g+f+e}$ pF	$C_{a/a}$ pF
ECC 88 ECC 89 Fig. 1	{ I triod. II triod. I triod. II triod.	3,3 3,3 3,8	1,8 1,7 2,5	1,4 1,4 1,9 4,1	0,5 0,4	3,3 3,3 0,3 2,9	0,18 0,18	1,3 1,3	3 2,8 4,5	6 6 6,3

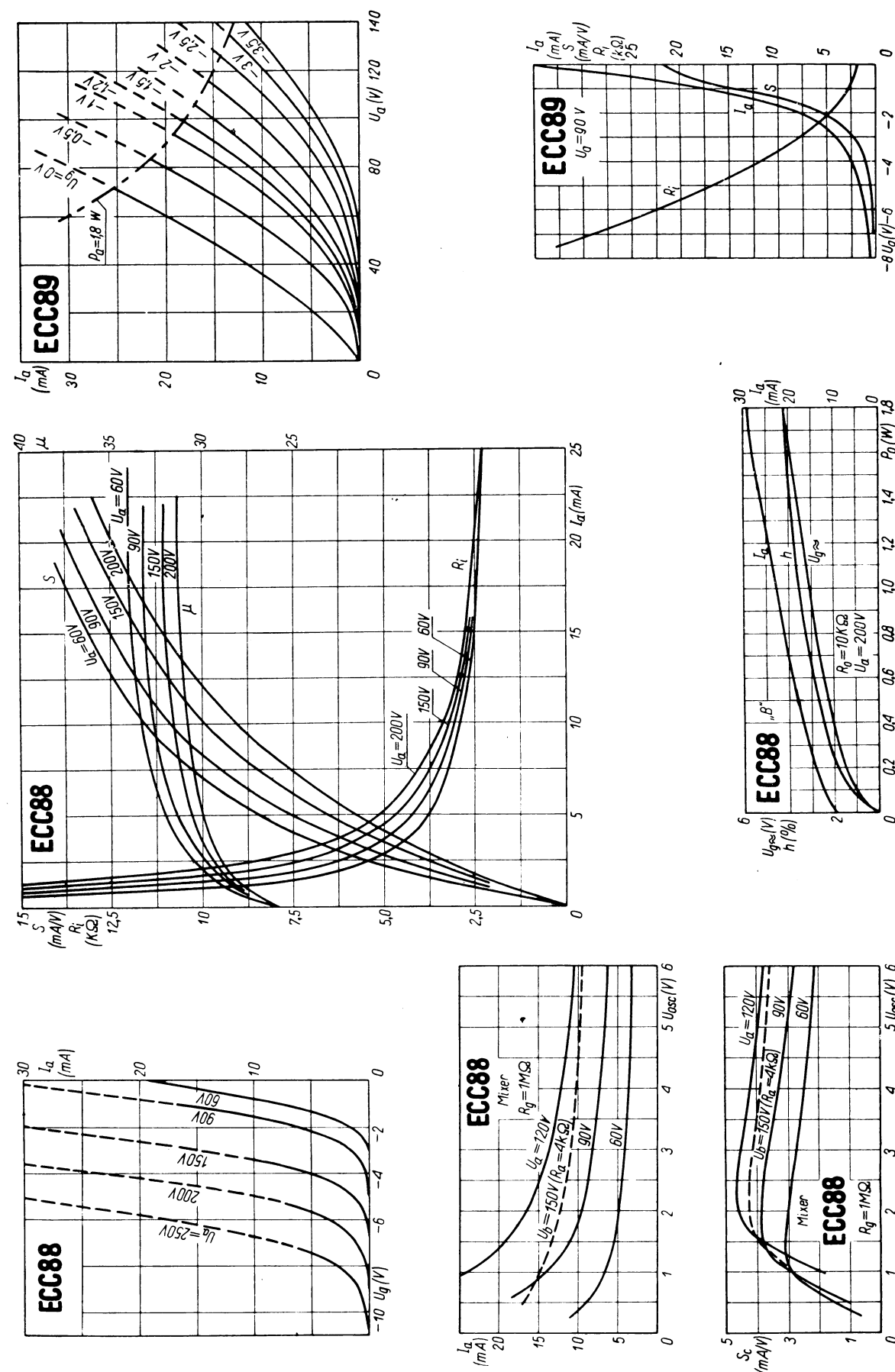
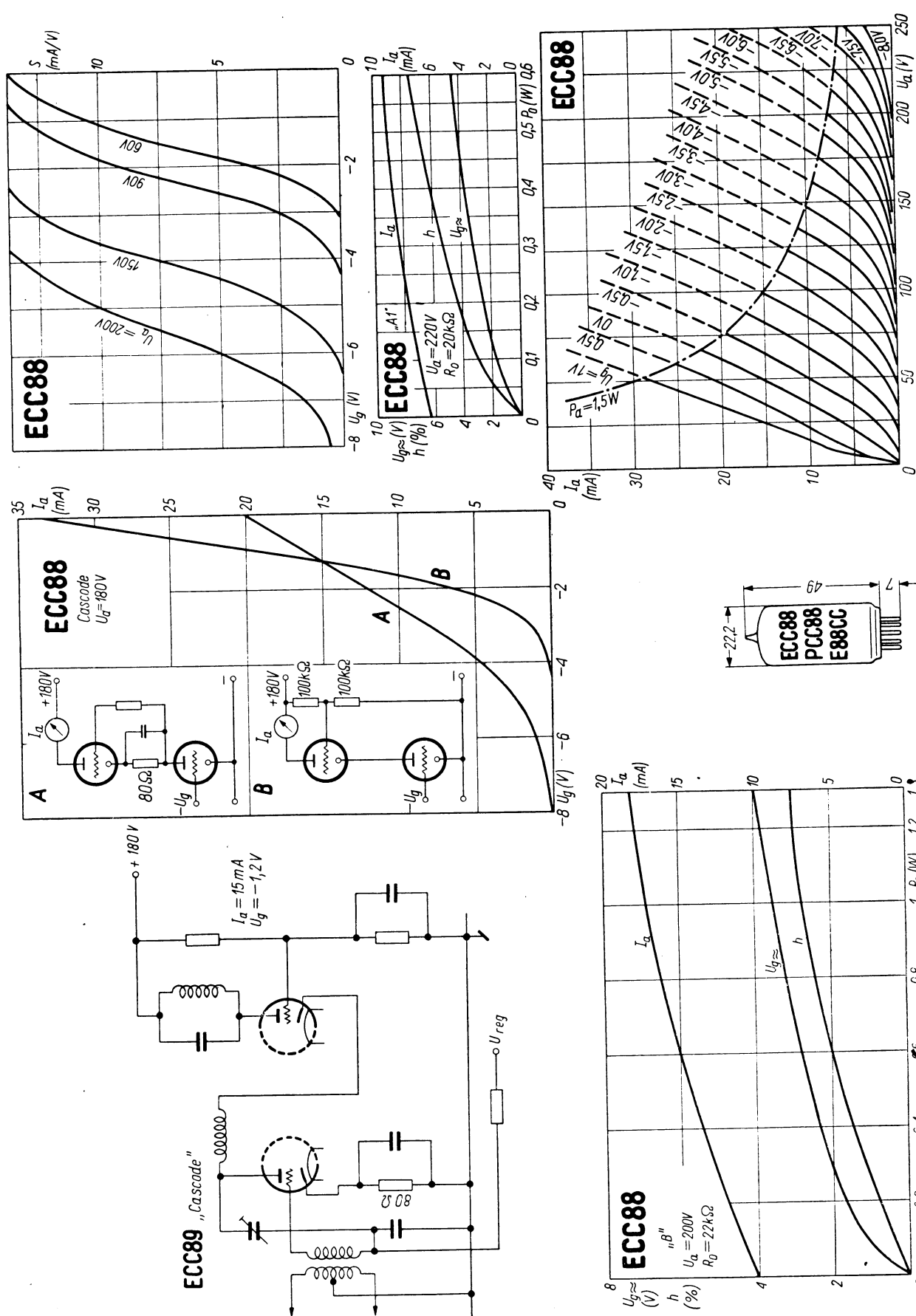
¹⁾ vide * 4, a, b, c = 10000, d, e, f, g. (U_f = 6,3 V ± 5%; I_f = 300 ± 15 mA)

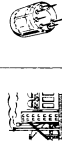
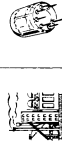
ECC 88	$C_{g/g}^{II}$	0,005 pF
	$C_{a/g}^{II}$	
	$C_{a/g}^{II}$	
	$C_{g/k}^{II}$	
	$C_{k/k}^{II}$	

Equivalents

CCa ¹⁾	Sim	=	E 88 CC
ECC 189	SFR	=	ECC 89
PCC 189	SFR	=	PCC 89
6922 ¹⁾	amer	=	E 88 CC





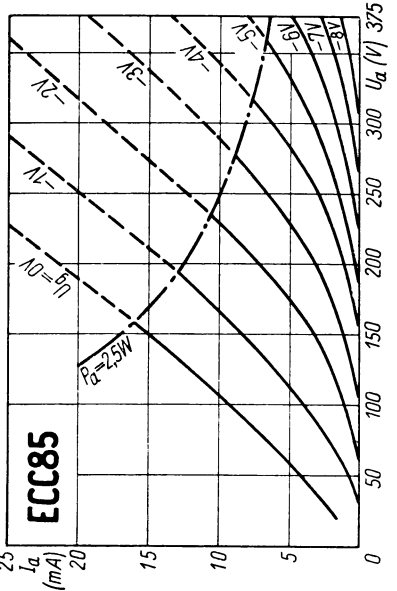
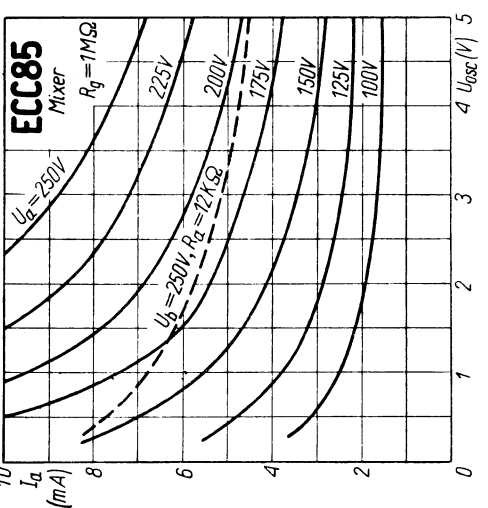
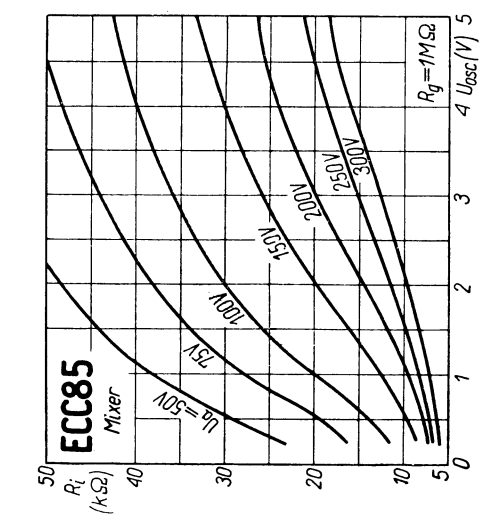
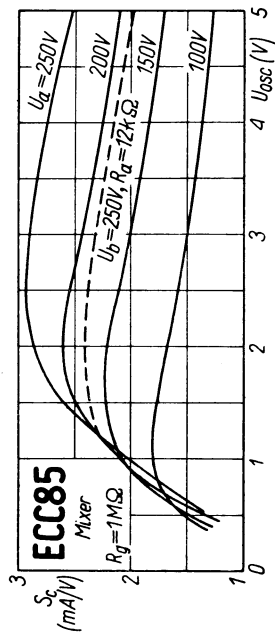
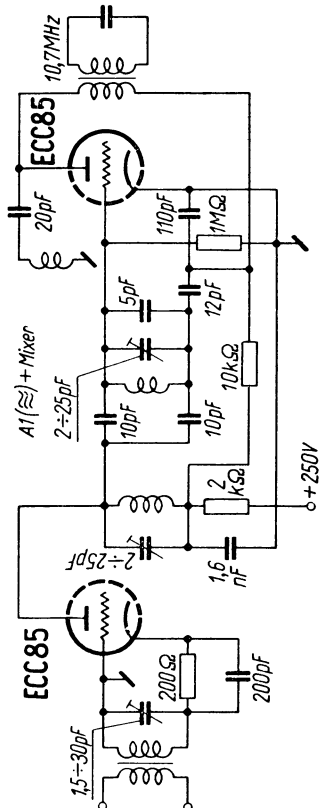
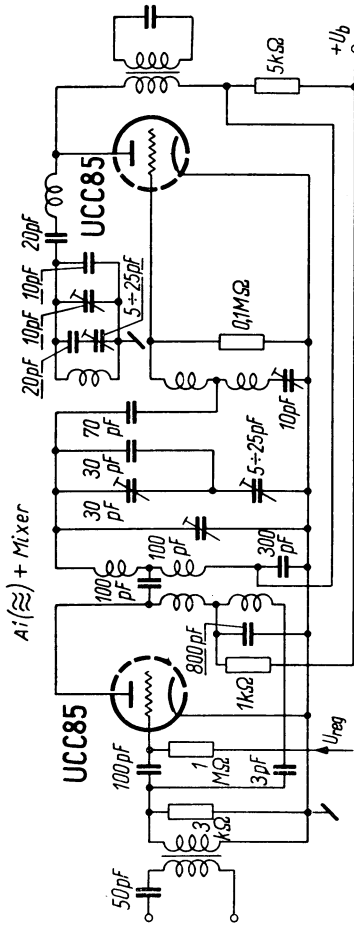
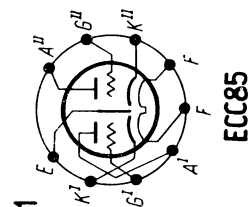
T.				U_f V	I_f A	Cl.	U_b V	R_a k Ω	U_a V	U_g V	I_a mA	S mA/V	R_i k Ω	μ V/V	R_k Ω	I_k mA	P_a W	U_{fk} V
ECC 85	eur	1	0,435	6,3		stat. A1(≈) Mixer	250 250	2 12	250 187 300	— — — —100	10 10 5,2	5,9 6 2,3	9,7 9,7 21	57 — — maximum	200			f=100 MHz ($U_{osc}=3V$)
PCC 85	eur	1	0,3	8 ÷ 9		stat. stat. stat. A1(≈) A1(≈) A1(≈)	100 170 170	1,5 1,5 1,5	92 157 161	— — — — — —	4,5 10 10 5,2 8,7 6	4,6 6,2 5,8 5,2 6 4,7	10,8 8 8,3 10 8,4 10,5	50 50 48	160 160 330			f=100 MHz $U_{osc}=1,8V$ $U_{osc}=2,8V$
UCC 85	eur	1	0,1	23,5 ÷ 26		Mixer Mixer Mixer	100 170 200	4,7 4,7 8,2	89 146 158 250	— — — —100	2,2 4,8 5,2	1,7 2,2 2,3	20 16 15	— — — maximum		15	2,5	90

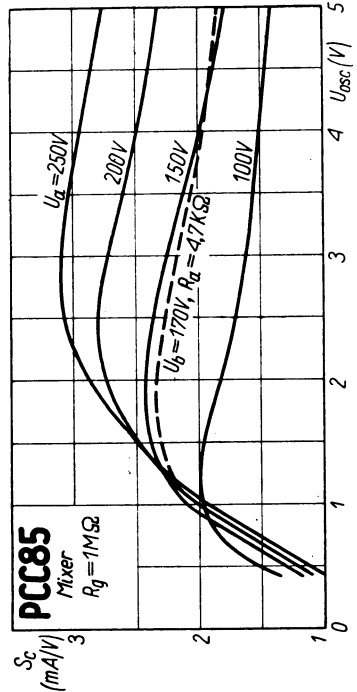
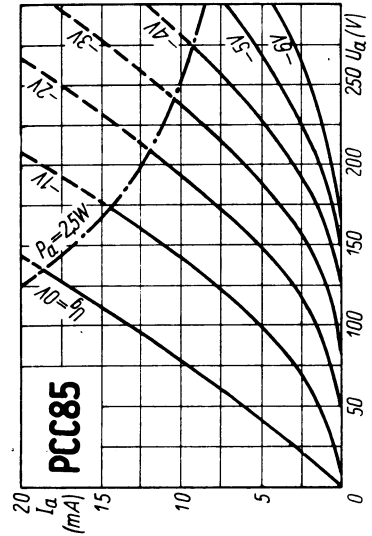
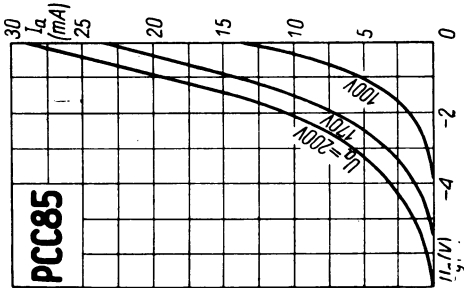
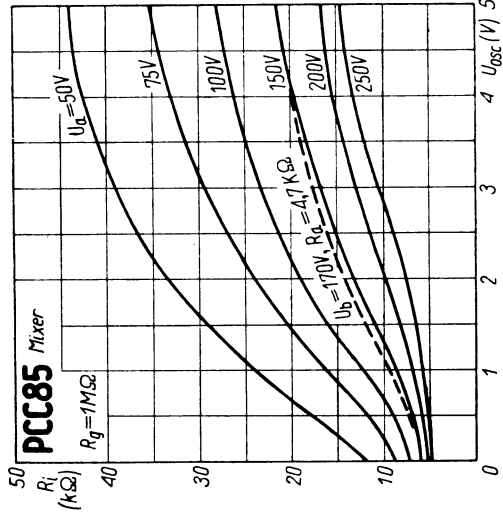
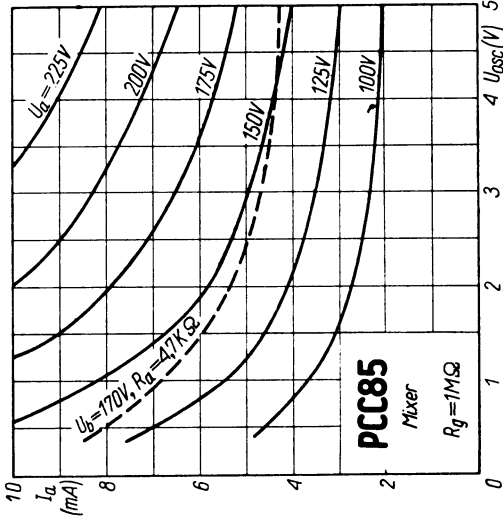
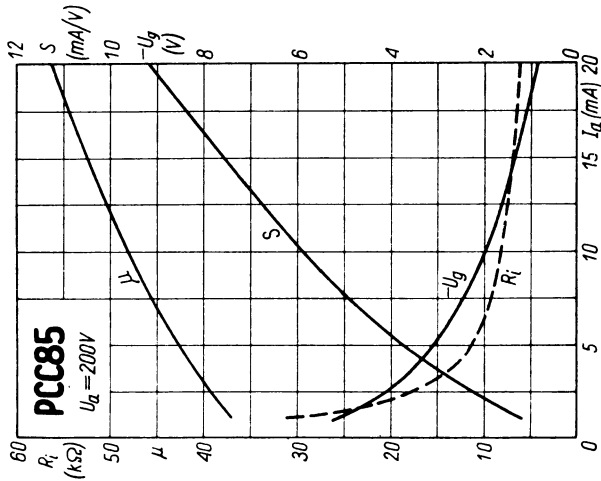
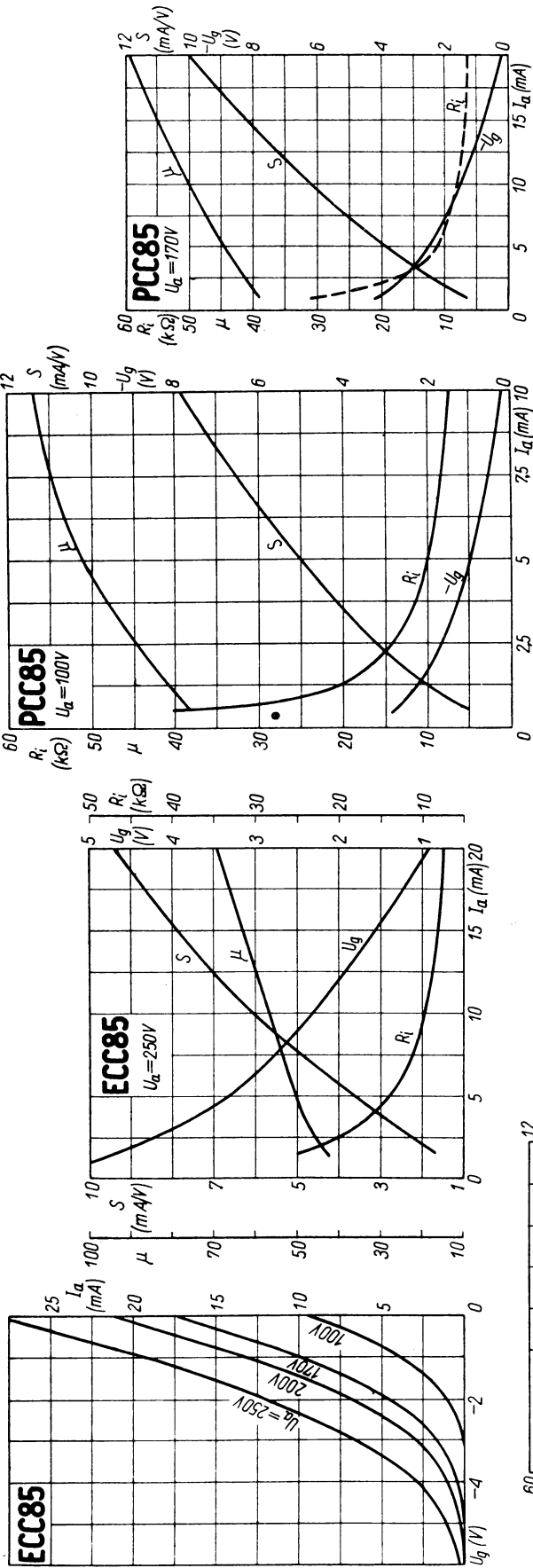
T.		$C_{g/k}$ pF	$C_{a/k}$ pF	$C_{a/g}$ pF	$C_{a/a}$ pF	$C_{a/g}^{II}$ pF	$C_{a/g}^{II}$ pF	$C_{a/k}^{II}$ pF	$C_{a/k}^{II}$ pF	$C_{a/k+f+e}$ pF	$C_{a/k}^{II}$ pF	$C_{g/k}^{II}$ pF	$C_{a/k}^{II}$ pF	$C_{g/k}^{II}$ pF	$C_{g/k}^{II}$ pF
ECC/PCC/UCC 85	I-II triod.	3	0,18	1,5	0,04	0,003	0,008	0,008	0,008	1,2	0,008	0,003	0,008	0,003	0,003

Equivalents

B 719	Marc = ECC 85	6 CC 43	Tes = ECC 85
ECC 805 S¹⁾	Tif = ECC 85	9 AQ 8	amer = PCC 85
ECC 865¹⁾	RFT = ECC 85	10 L 14	Maz = UCC 85
6 AQ 8	amer = ECC 85	25 AQ 8	amer = UCC 85

¹⁾ vide * 4, a, b, c = 10000, f, g ($U_f = 6,3V \pm 5\%$)





T.			U_f V	I_f A	Cl.	U_a V	U_g V	U_{osc} V	I_a mA	I_g μ A	S mA/V	S_c mA/V	R_i k Ω	μ V/V	R_g M Ω
6 AT 7 N	Vis	1	6,3	0,3	stat.	100	— 1	—	3	—	3,7	—	16,5	62	—
6 DT 8	amer	1	6,3	0,3	stat.	170	— 1	—	8,5	—	5,9	—	11	66	—
12 AT 7	int	2	6,3/12,6	0,3/0,15	stat.	200	— 1	—	11,5	—	6,7	—	10,5	70	—
12 AZ 7	amer	2	6,3/12,6	0,45/0,225	Osc.	250	— 2	—	10	3,7	5,5	1,7	11	60	1
					Osc.	170	— 3,7	2,5	4	4,2	2,1	1,9	24,5	—	1
					Osc.	200	— 4,2	2,5	5	4,2	2,7	—	21,5	—	1
					Osc.	250	— 4,2	2,5	7,6	4,2	3,1	2,1	17,5	—	1
(= EC 92 x 2)															
maximum ($f = 300$ MHz; $I_k = 15$ mA; $P_o = 2,5$ W; $U_{f/k} = 90$ V)															

T.	C_{gk+f}		C_{gla}	C_{qk}	C_{kf}	C_{kg+f}	C_{ag+f}	C_{glf}	C_{gla}^{II}	C_{glg}^{II}	C_{alg}^{II}	C_{alg}^{II}
	pF	pF										
ECC 81	{ I triod. II triod.	2,3	0,45	1,6	2,5	4,7	1,9	0,17	0,4	0,005	0,07	0,04
6 AT 7 N		2,3	0,35	1,6	2,5	4,7	1,8	0,17				
6 DT 8	{ I triod. II triod.	2,2	0,5	1,5	2,4							
		2,2	0,4	1,5	2,4				0,07	0,005		
12 AZ 7	{ I triod. II triod.	2,7	1,6	1,6	3	5,3	2,8					
		2,7	1,6	1,6	3							
6201	{ I triod. II triod.	3,1	0,5	1,9	3,8	6,9	2					
		3,1	0,4	1,9	3,8	6,9	2					
	{ I triod. II triod.	2,5	0,45	1,6	2,8	5	1,9		0,24			
		2,5	0,38	1,6	2,8	5	1,8					

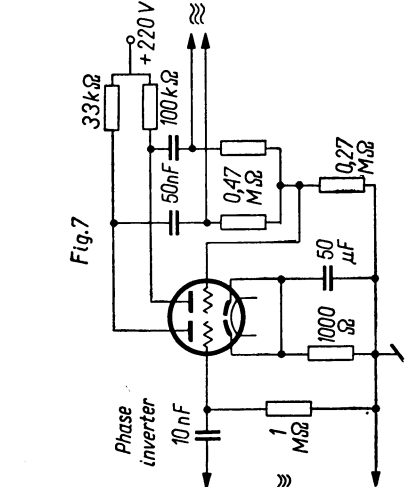
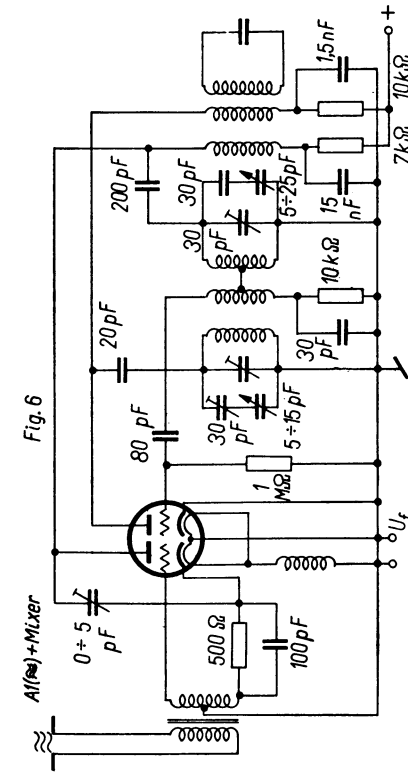
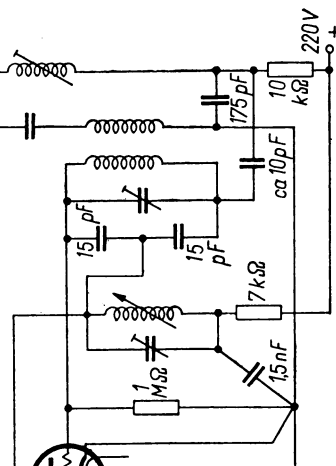
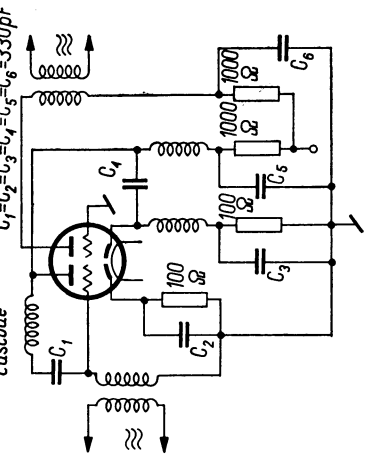
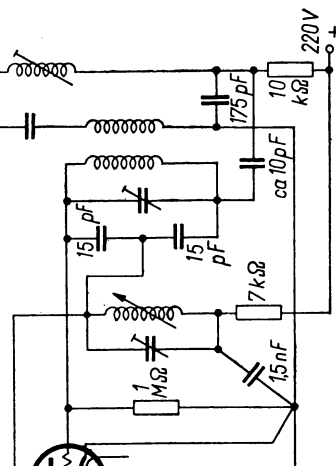
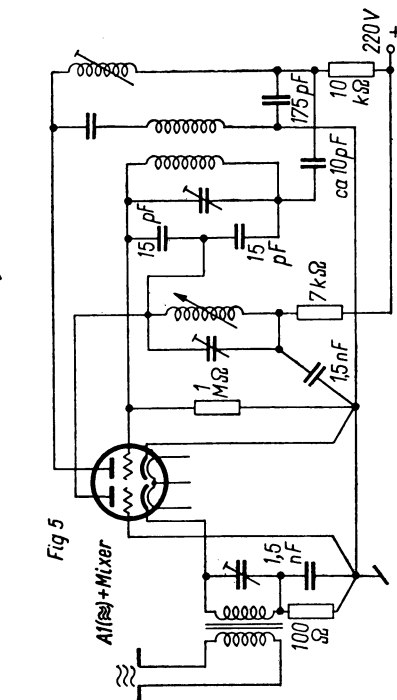
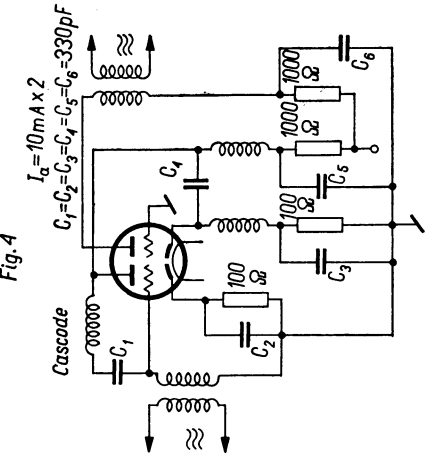
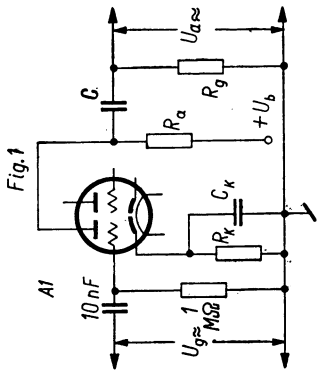
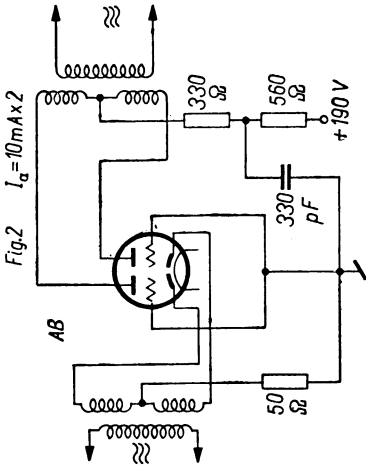
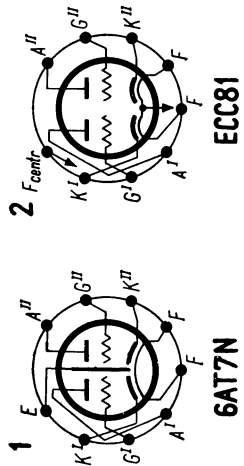
Fig. 1

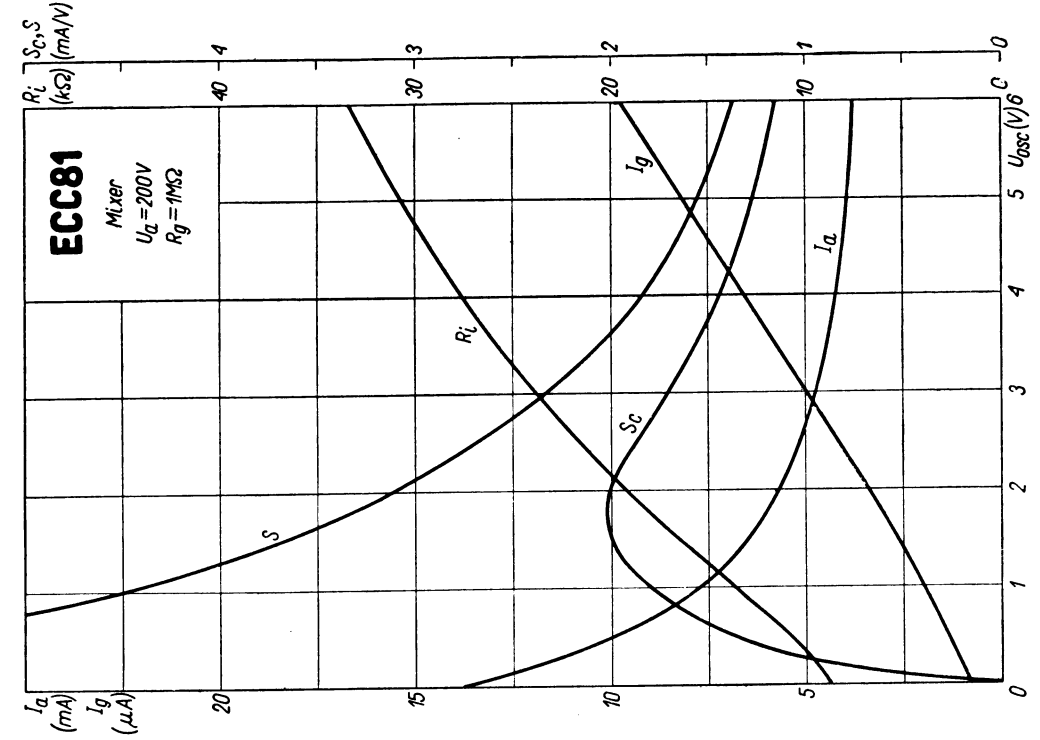
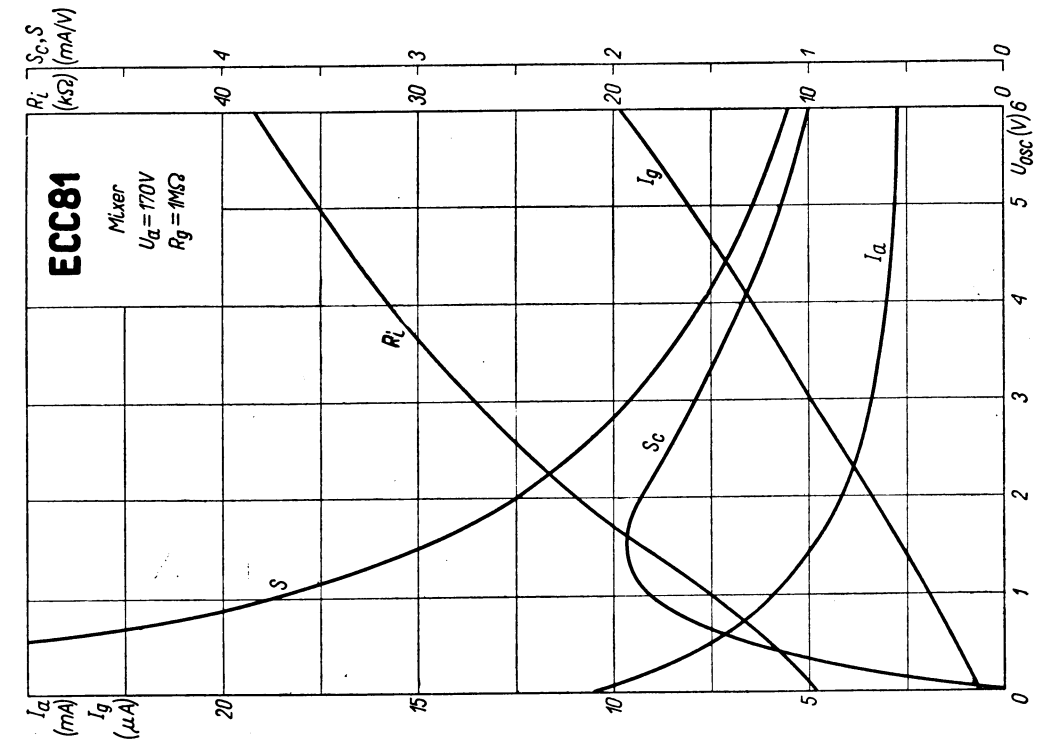
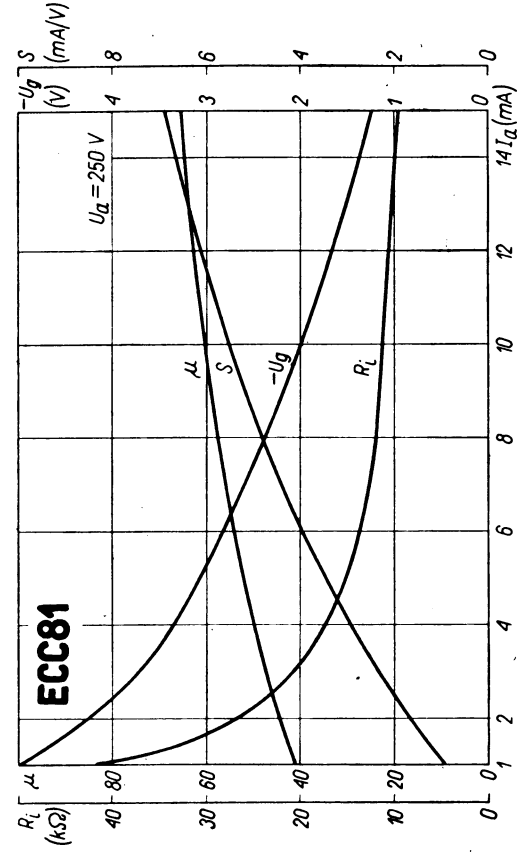
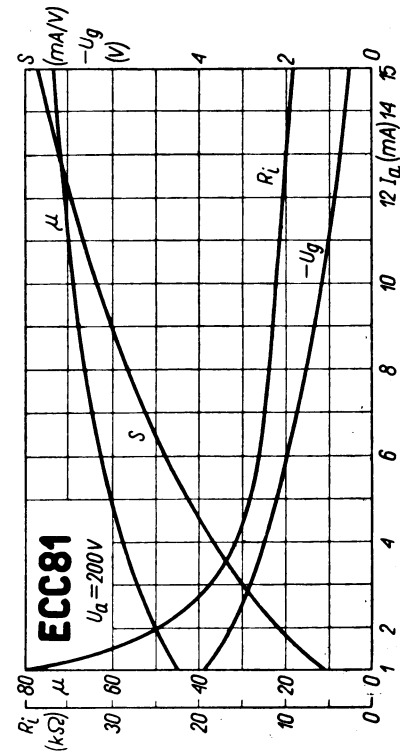
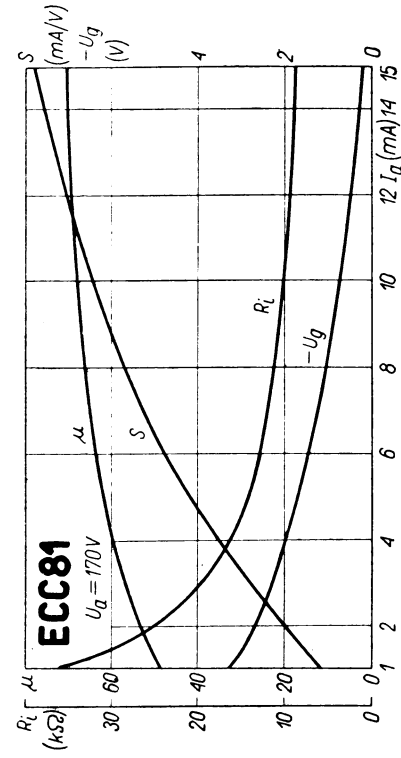
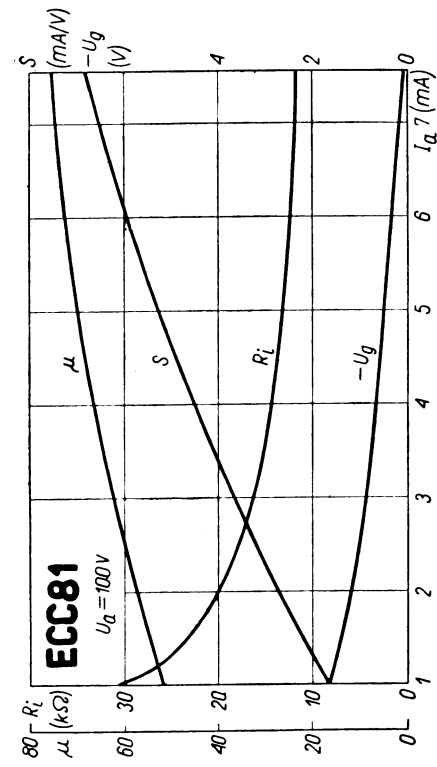
U_b	R_a	R_g	R_k	$U_{a\approx}$	μ
V	MΩ	MΩ	kΩ	V	$U_{a\approx}/U_{g\approx}$
90	0,1	0,24	2,4	13	27
90	0,24	0,51	5,3	15	28
90	0,51	1,0	11	16	28
180	0,1	0,24	1,4	28	33
180	0,24	0,51	3,6	31	33
180	0,51	1,0	7,1	33	32
300	0,1	0,24	1,2	47	33
300	0,24	0,51	2,9	52	34
300	0,51	1,0	6,4	55	34

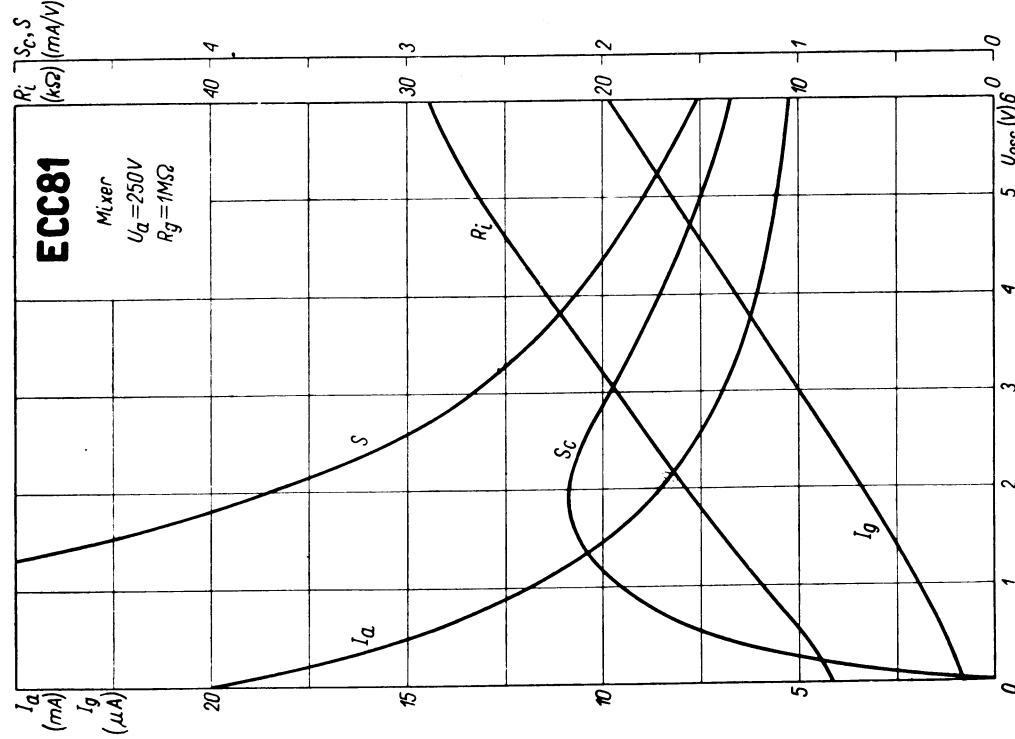
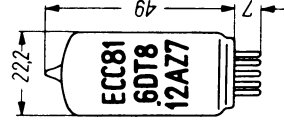
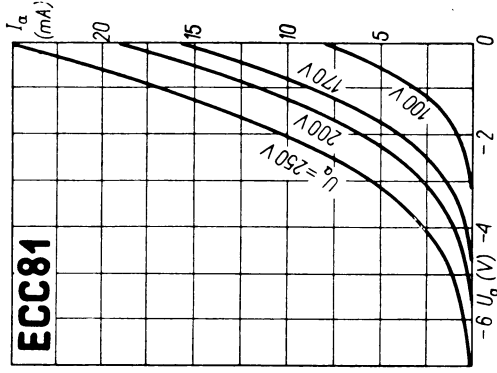
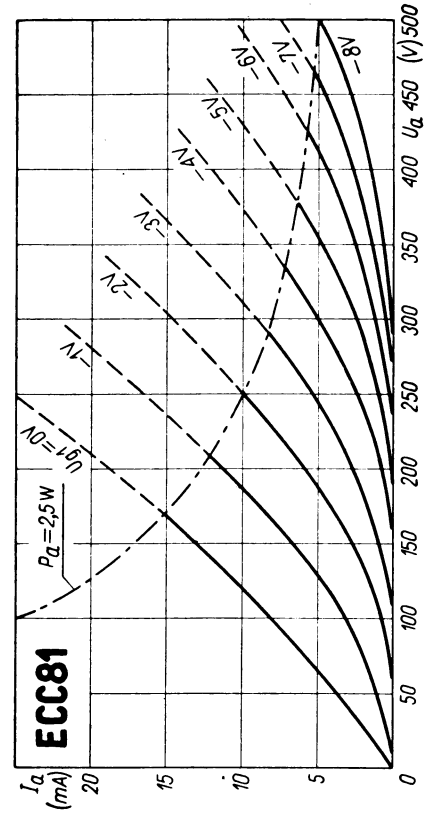
Equivalents 12 AT 7

B 152	MOG	M 8162 ¹⁾	Mul
B 309	MOG	QA 2406 ¹⁾	Osr
CC 81 E ¹⁾	Sim	QB 309 ¹⁾	Marc
ECC 81	eur	12 AT 7 WA ¹⁾	amer
ECC 81 WA ¹⁾	eur	6060 ¹⁾	Bri
ECC 801	Lor	6201 ²⁾	amer
ECC 801 S ²⁾	Tlf	6679	amer

1) vide * 4
2) vide * 4, a, b, c = 10000, f, g ($U_f = 6,3/12,6 \text{ V} \pm 5\%$)
3) vide * 4, a, b, c, f, g ($U_f = 6,3/12,6 \text{ V} \pm 10\%$)







T.	T.	U _f	I _f	U _a	U _g	I _a	S	R _i	μ	maximum		
										U _a	U _{fk}	P _a
										V	V	W
ECC 35	Mul	1	0,4	250	-2,5	2,3	2	34	68	300	90	1,5
6 C 8-G	amer	2	0,3	250	-4,5	3,2	1,6	22,5	36	250	150	1
6 L 19	Maz	3	0,4	250	-2	5	3,3	16	55	250		1,5
6 H 17 B	CCCCP	10	0,4	200	-1,2	4	2,5	28	70			
6 SC 7	int	4	0,3	250	-2	2	1,32	53	70	250	90	
12 SC 7	int	4	0,15									
6 SL 7	int	1	0,3									
7 F 7	amer	5	0,3	100	-1	0,65						
12 SL 7-GT	int	1	0,15									
14 F 7	amer	5	0,15	200	-2	2,3	1,6	44	70	300	90	1
5691 ¹⁾	amer	1	0,6									
5755 ²⁾	amer	6	0,36/0,18									
7 F 8	amer	7	0,3	250	(R _k = 500 Ω)	6	3,3	14,5	48	300	90	3
14 F 8	amer	7	0,15									
12 AY 7	amer	8	0,3/0,15	250	-4	3	1,75	22,8	40	300	90	1,5
6072 ³⁾	amer	8	0,35/0,175									
6112 ⁴⁾	amer	9	0,3	{ 100 150 }	(R _k = 1,5 kΩ) -1,45	0,8 1,75	1,8 2,5	39 28	70 70	165		0,55

Equivalents

CK 5755	Ray = 5755	6 H 9 M	CCCCP = 6 SL 7	6 SL 7-WA ²⁾	amer = 6 SL 7	12 H 4 II	CCCCP = 12 AY 7
CK 6112	Ray = 6112	6 H 10 C	CCCCP = 6 SC 7	6 SL 7-WGT ²⁾	amer = 6 SL 7	12 H 10 C	CCCCP = 12 SC 7
E 1709	Marc = 6 SC 7	6 H 10 M	CCCCP = 6 SC 7	6 SU 7-GTY	amer = 6 SL 7	12 H 10 M	CCCCP = 12 SC 7
6 C 8-BG	amer = 6 C 8-G	6 SC 7-GT	int = 6 SC 7	6 SU 7-WGT ³⁾	amer = 6 SL 7	1634	RCA = 12 SC 7
6 H 4 II	CCCCP = 12 AY 7	6 SL 7-GT	int = 6 SL 7	7 F 7-TV	Syl = 7 F 7	1655	RCA = 6 SC 7
6 H 9 C	CCCCP = 6 SL 7	6 SL 7-GTY	Syl = 6 SL 7	7 F 8-W ⁵⁾	amer = 7 F 8	6113	amer = 6 SL 7
						6188 ⁵⁾	amer = 6 SL 7

¹⁾ vide * 4, a, b, c, f, g (U_f = 6,3 V ± 5%)
²⁾ vide * 4, a, f (U_f = 6,3/12,6 V ± 10%)
³⁾ vide * 4, a, b, c, f, g (U_f = 6,3/12,6 V ± 10%)
⁴⁾ vide * 4, a, b, c, d, e, f, g (U_f = 6,3 V ± 5%)
⁵⁾ vide * 4, a, b (U_f = 6,3 V ± 10%)

12 AY 7 (Fig. 1)

U_b	R_a	R_g	R_k	$U_{a\approx}$	μ
V	MΩ	MΩ	kΩ	V	$U_{a\approx}/U_{g\approx}$
90	0,1	0,24	1,8	13	24
90	0,24	0,51	3,7	14	26
90	0,51	1,0	7,8	16	27
180	0,1	0,24	1,3	31	27
180	0,24	0,51	2,8	33	29
180	0,51	1,0	5,7	33	30
300	0,1	0,24	1,2	58	28
300	0,24	0,51	2,3	56	30
300	0,51	1,0	4,8	56	31

6 L 19 (Fig. 1)

U_b	R_a	R_g	R_k	I_a	$U_{a\approx}$	μ	h
V	kΩ	kΩ	kΩ	mA	V	$U_{a\approx}/U_{g\approx}$	%
260	47	22	1,2	1,7	18,5	34	2,5
260	100	22	1,8	1,1	22	38	2,5

6 SL 7 (Fig. 2)

R_a	R_g	C	$U_{a\approx}$	μ
MΩ	MΩ	nF	V	$U_{a\approx}/U_{g\approx}$
0,1	0,25	25	29	51
0,25	0,5	10	35	67

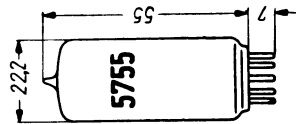
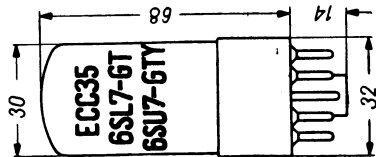
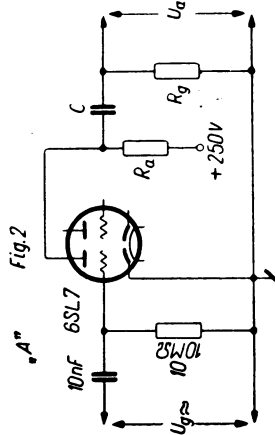
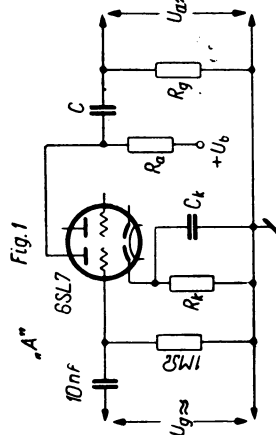
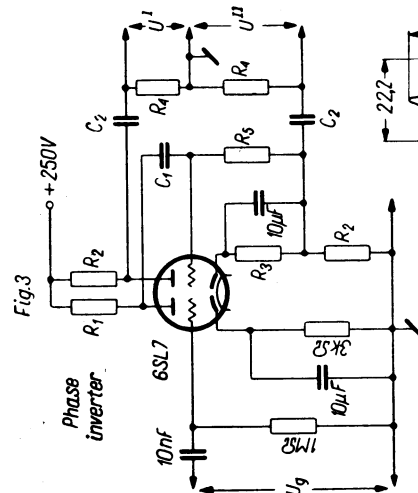
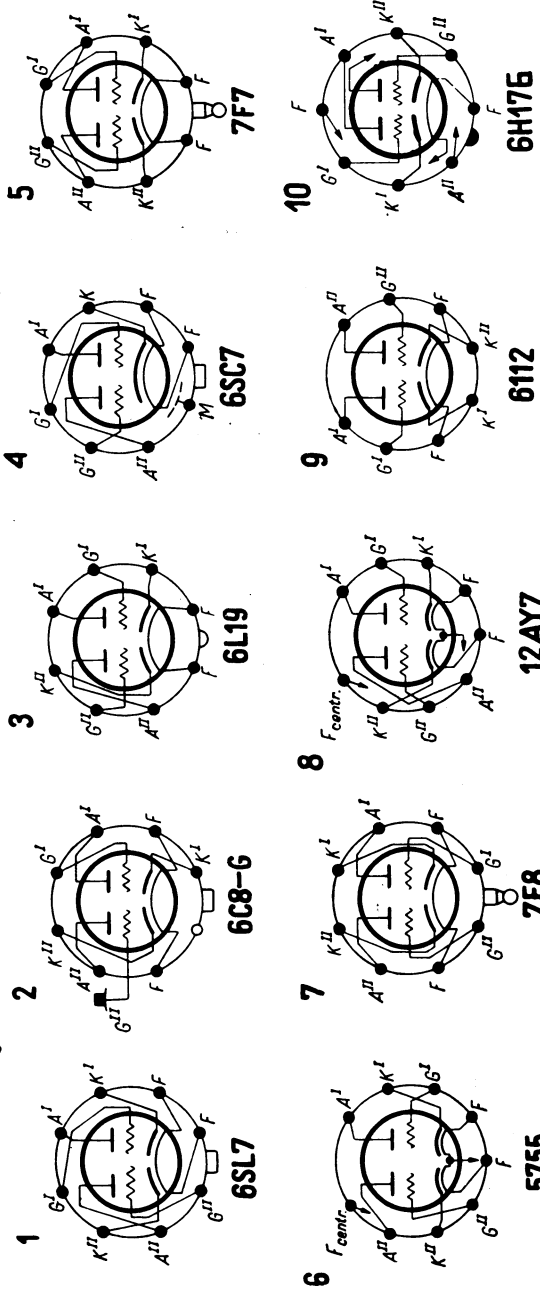
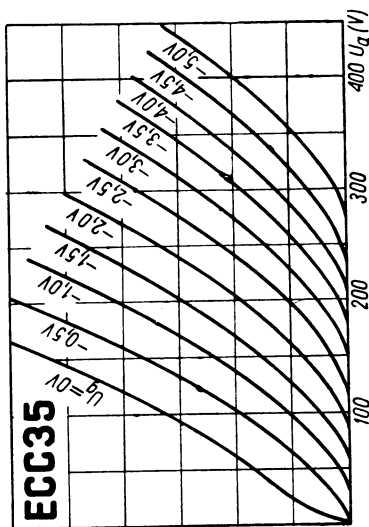
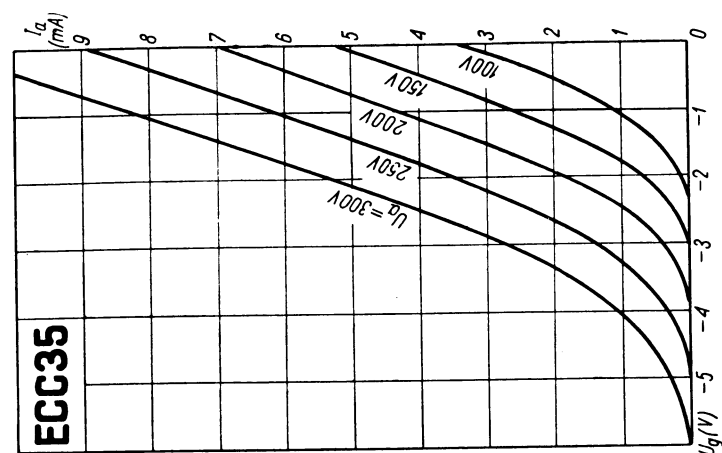
6 SL 7 (Fig. 3)

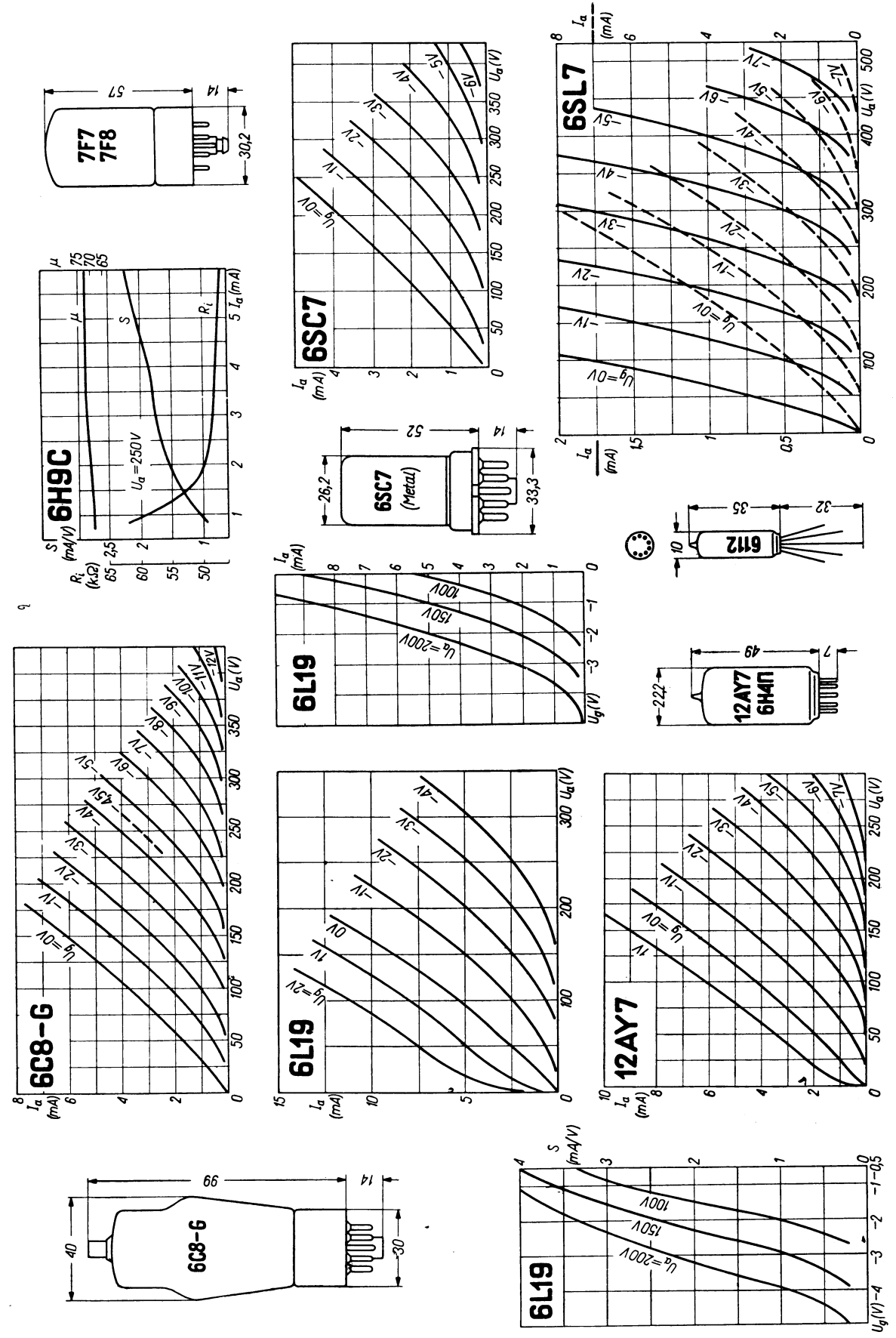
R_1	R_2	R_3	R_4	R_5	C_1	C_2	$U_{a\approx}$	μ
kΩ	kΩ	kΩ	kΩ	MΩ	nF	nF	V	$U_{a\approx}/U_{g\approx}$
100	50	1	125	0,25	25	50	21	60
250	125	3	250	0,5	10	25	23	64

T.	$C_{g/k}$	$C_{a/k}$	$C_{g/a}$	$C_{a/a}$	$C_{g/g}$	$C_{a/g}$
	pF	pF	pF	pF	pF	pF
ECC 35	3	1	2,5	0,75		
6 C 8-G	3	1,3	3	2	0,1	
6 L 19	2,6	2	2,6	2		0,06
6 H 4 II	1,3	2,2	1,8	0,65	0,014	
6 H 9 C	2,8	2,5	2,5			
6 SC 7	2,9	2,3	2,5			
6 SL 7	1,6	1,6	1,3			
6 SL 7-GT	1,6	1,4	1,3			
7 F 7	3	3,8	2,8			
7 F 8	3,4	3,2	2,8			
12 AY 7	2	3	2			
12 H 4 II	1,5	2	1,5			
6112	1,7	0,26	1			

6 SL 7 (Fig. 1)

U_b	R_a	R_g	R_k	C	$U_{a\approx}$	μ
V	MΩ	MΩ	kΩ	nF	V	$U_{a\approx}/U_{g\approx}$
90	0,1	0,47	4,8	6,5	9,1	30
90	0,22	1	8,1	3,5	12	37
90	0,47	2,2	15	2	16	41
180	0,1	0,47	2,5	6,5	32	37
180	0,22	1	4,6	3,5	38	44
180	0,47	2,2	9,1	2	43	47
300	0,1	0,47	2,1	6,5	63	41
300	0,22	1	3,7	3,5	77	48
300	0,47	2,2	7,2	2	85	51





T.	T.	U _f	I _f	U _a	U _g	I _a	S	R _i	μ	I _k	P _a	U _{flk}
		V	A	V	V	mA	mA/V	kΩ	V/V	mA	W	V
2 C 52	amer	12,6	0,3	100	-1	0,5	1,25	80	100			
6 AX 7	int	3,15/6,3	0,6/0,3	250	-2	1,2	1,6	62,5	100			
6 H 2 II	CCCP	6,3	0,345	300	-50		maximum			8	1	180
12 AD 7	TS	6,3/12,6	0,45/0,225									
12 AK 7	TS	12,6	0,15									
12 AX 7	int	6,3/12,6	0,3/0,15	250	-1,5	2,3	2	50	100			
5751 ¹⁾	amer	6,3/12,6	0,35/0,175	300	-2	2,5	3,2	31,8	100			
6 CC 41	Tes	6,3	0,3	250	-50							
12 BZ 7	amer	6,3/12,6	0,6/0,3	300	-50							

¹⁾ vide * 4, a, b, c, f, g; U_f = 6,3/12,6 V ± 10% (I_f = 0,15 A; S = 1,6 mA/V; μ = 100); (I_f = 0,175 A; S = 1,2 mA/V; μ = 70)
²⁾ vide * 4, a, b, c, f, g

Equivalents

B 339	Marc = 12 AX 7
CK 5751 ¹⁾	Ray = 5751
ECC 83	eur = 12 AX 7
ECC 803	Lor = 12 AX 7
GL 5751 ¹⁾	GE = 5751
M 8137 ²⁾	Mul = 12 AX 7
QB 339 ²⁾	Marc = 12 AX 7
6 L 13	Maz = 12 AX 7
12 AX 7-A	amer = 12 AX 7
12 AX 7 R	RT = 12 AX 7
12 AX 7 S ¹⁾	eur = 12 AX 7
5751-WA ¹⁾	amer = 5751
6057 ²⁾	Bri = 12 AX 7
6681	amer = 12 AX 7

T.		C _{g/k}		C _{g/a}		C _{a/a} ^{II}	
		pF	pF	pF	pF	pF	pF
ECC 83	I triod.	1,6	0,46	1,7	1,7	1,2	1,2
6 H 2 II	II triod.	1,6	0,34	1,7	0,7	0,3	0,3
12 BZ 7	I triod.	2,25	3,1	2,9	2,5	2,5	2,5
ECC 83	II triod.	6,5	0,7	0,55	0,15 pF	0,15 pF	0,15 pF

ECC 83 Fig. 1

U_b	R_a	R_g	R_k	I_a	$U_{a\approx}$	μ	h
V	k Ω	k Ω	k Ω	mA	V	$U_{a\approx}/U_{g\approx}$	%
200	47	150	1,5	0,86	18	34	8,5
200	100	330	1,8	0,65	20	50	4,8
200	220	680	3,3	0,36	24	56	4,6
250	47	150	1,2	1,18	23	37,5	7
250	100	330	1,5	0,86	26	54,5	3,9
250	220	680	2,7	0,48	28	66,5	3,4
300	47	150	1,0	1,55	26	40	5
300	100	330	1,2	1,11	30	57	2,7
300	220	680	2,2	0,63	36	72	2,6
350	47	150	0,82	1,98	33	42,5	4,4
350	100	330	1,0	1,4	36	61	2,2
350	220	680	1,5	0,85	37	75,5	1,6
400	47	150	0,68	2,45	37	44	3,6
400	100	330	0,82	1,72	38	63	1,7
400	220	680	1,2	1,02	38	76,5	1,1

ECC 83 Fig. 2

U_b	R_a	R_g	I_a	$U_{a\approx}$	μ	h
V	k Ω	k Ω	mA	V	$U_{a\approx}/U_{g\approx}$	%
200	47	150	1,02	18	37	5,6
200	100	330	0,7	20	50	3,9
200	220	680	0,39	24	58	4,6
250	47	150	1,45	23	39	4,2
250	100	330	1,0	26	51	2,6
250	220	680	0,56	28	62	2,7
300	47	150	2,5	33	44	2,7
300	100	330	1,29	30	54	2,0
300	220	680	0,74	36	66	2,2
350	47	150	2,5	33	44	2,7
350	100	330	1,62	36	56	1,8
350	220	680	0,88	37	67	1,7
400	47	150	3,1	37	45	2,5
400	100	330	1,95	38	58	1,6
400	220	680	1,09	38	68	1,4

ECC 83 Fig. 3

U_b	R_k	I_a	$U_{a\approx}$	μ	h
V	k Ω	mA	V	$U_{a\approx}/U_{g\approx}$	%
250	1,2	1,08	35	58	5,5
350	0,82	1,7	45	62	3,5

ECC 83 Fig. 4

U_b	$U_{g\approx}$	I_a	R_k	R_a^I	R_a^{II}	$U_{a\approx}$	μ	h
V	V	mA	k Ω	M Ω	M Ω	V	$U_{a\approx}/U_{g\approx}$	%
250	65	1	68	0,1	0,1	20	25	1,8
350	90	1,2	82	0,15	0,15	35	27	1,8

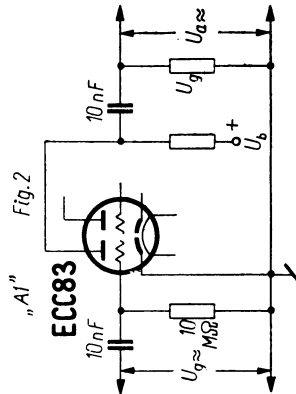
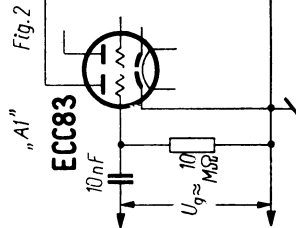
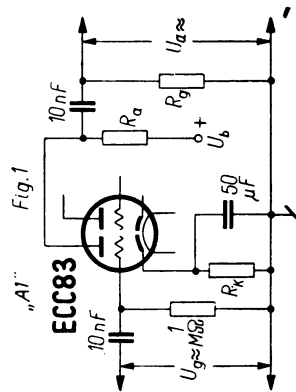
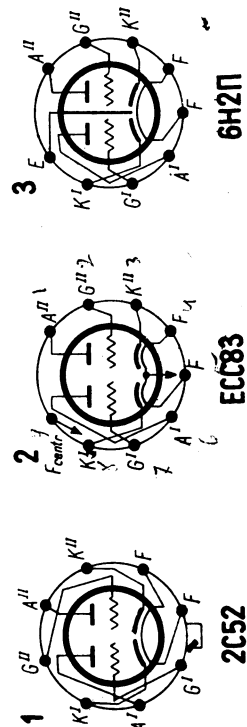


Fig. 1

Fig. 2

Fig. 3

Fig. 3

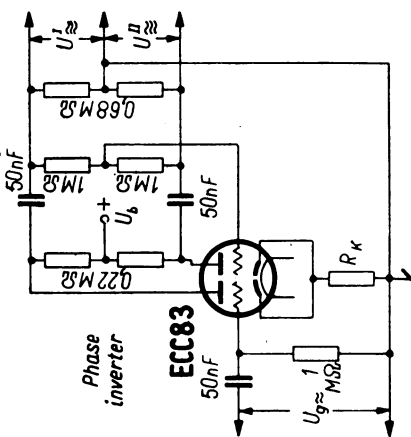


Fig. 4

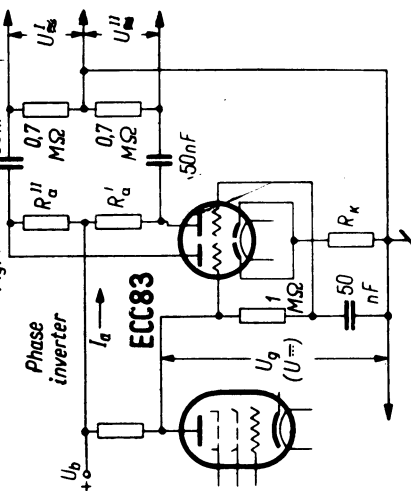
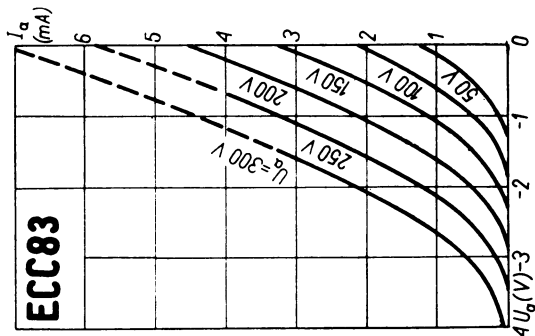
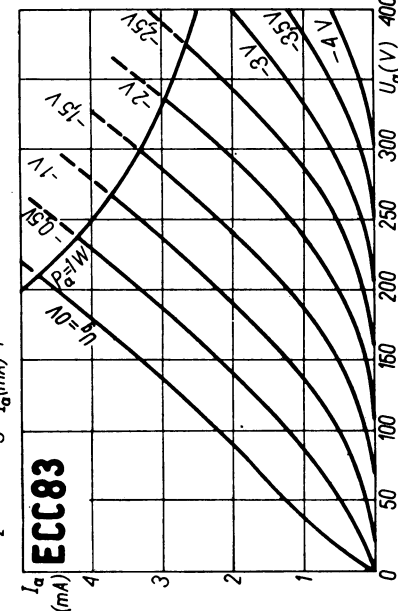
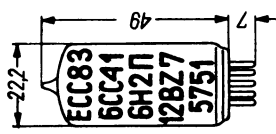
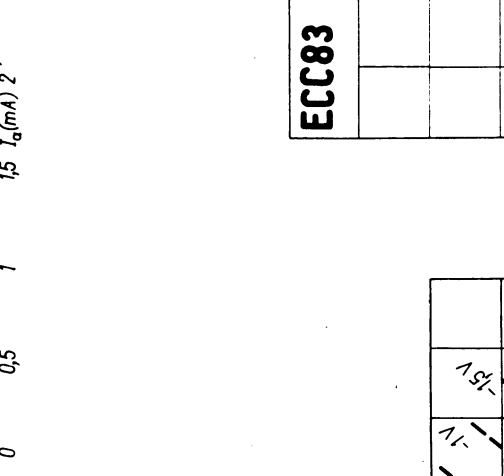
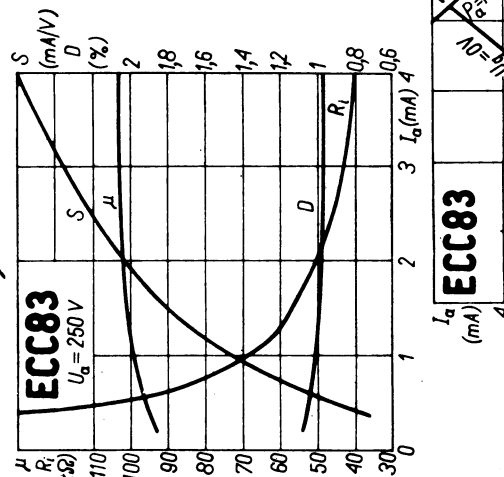
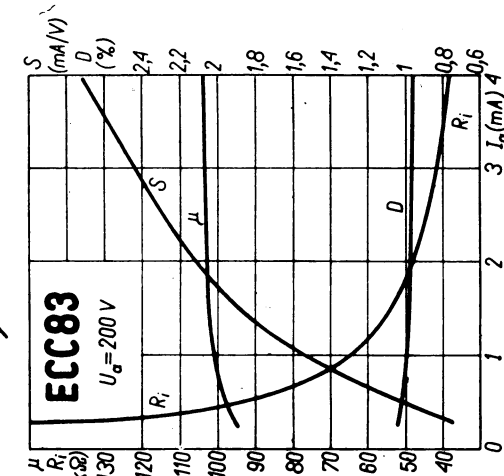
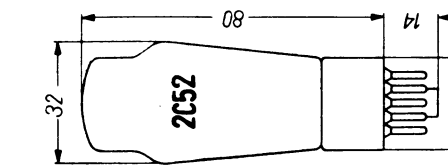
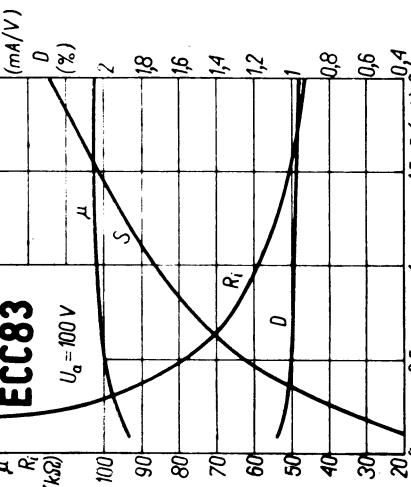


Fig. 3



T.			U_f	I_f	Triod. ¹⁾	U_a	U_g	I_a	S	R_i	μ	R_o	P_o
			V	A	n^0	V	V	mA	mA/V	k Ω	V/V	k Ω	W
6 AB 6-G	amer	1	6,3	0,5	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	250 250	0	5 34				8	3,5
6 AC 6-G	amer	1	6,3	1,1	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	180 180	0	7 45	3	18	54	4	3,8
2 B 5	amer	2	2,5	2,25	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	300 300	0	45	2,4	24	58	7	4
6 B 5	amer	2	6,3	0,8									
6 N 6-G	amer	1	6,3	0,8									
2 B 6	amer	3	2,5	2,25	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	250 250	-24 + 2,5	4 40	0,6 3,5	5	7,2 18	8 5	4
6 BN 7	amer	4	6,3	0,75	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	120 250	-1 -15	5 24	2 5,5	14 2,2	28 12		1,5 7,5
25 B 5	amer	2	25	0,3	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	110 110	0	7 45	2,3			2	2
25 N 6	amer	1	25	0,3	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	110							
291	amer	2	12,6	0,3	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	120 120	-11 +11	3 30	0,8 2,5		9 5	3	1,2
293	amer	2	6,3	0,6	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	180 180	-6,5 + 6,5	4 17,5				8	1,2
295	amer	2	2,5	4	$\begin{Bmatrix} I \\ II \end{Bmatrix}$	250 250	-14 - 3	4 52	4,4 4,2	3 6	13	4	4,5

¹⁾ vide Fig. 1

