

Netzröhre für GW-Heizung
indirekt geheizt
Serienspeisung
DC-AC-Heating
indirectly heated
connected in series

TELEFUNKEN

UF 89

Regelbare Pentode
Variable-mu pentode

U_f 12,6 V
 I_f 100 mA

Meßwerte · Measuring values

U_a	170	V
U_{g3}	0	V
U_{g2}	100	V
U_{g1}	1,2	V
I_a	12	mA
I_{g2}	4,4	mA
S	4,4	mA/V
R_i	0,4	M Ω
μ_{g2g1}	21	

Betriebswerte · Typical operation

HF- oder ZF-Verstärker · RF- or IF-amplifier

Grundgittervorspannung mit R_k · Base grid 1 voltage with R_k

$U_a = U_b$	100		100	V	
U_{g3}	0		0	V	
R_{g2}	0		15	k Ω	
R_k	160		130	Ω	
U_{g1}	-1,9	-10	-1,05	-10	V
I_a	8,6	—	6	—	mA
I_{g2}	3,1	—	2,1	—	mA
S	3,3	0,16	3,2	0,15	mA/V
R_i	0,3	—	0,475	—	M Ω
r_{aeq}	ca. 4,7	—	ca. 3,5	—	k Ω

$U_a = U_b$	170		200	V	
U_{g3}	0		0	V	
R_{g2}	15		24	k Ω	
R_k	130		130	Ω	
U_{g1}	-1,95	-20	-1,95	-20	V
I_a	11	—	11,1	—	mA
I_{g2}	3,9	—	3,8	—	mA
S	3,8	0,11	3,85	0,16	mA/V
R_i	0,45	—	0,55	—	M Ω
r_{aeq}	ca. 4,5	—	ca. 4,2	—	k Ω



Betriebswerte · Typical operation

HF- oder ZF-Verstärker · RF- or IF-amplifier

 Grundgittervorspannung nur durch R_{g1}

 Base grid 1 voltage produced by voltage drop across R_{g1} only

$U_a = U_b$	100		100		V
U_{g3}	0		0		V
R_{g2}	3,9		22		k Ω
R_k	0		0		Ω
R_{g1}	10		10		M Ω
U_{g1}	0	-10	0	-10	V
I_a	12	—	6,1	—	mA
I_{g2}	4,5	—	2,3	—	mA
S	5	0,16	4	0,14	mA/V
R_i	0,2	—	0,45	—	M Ω
r_{aeq}	ca. 3	—	ca. 2,6	—	k Ω

$U_a = U_b$	170		200		V
U_{g3}	0		0		V
R_{g2}	22		33		k Ω
R_k	0		0		Ω
R_{g1}	10		10		M Ω
U_{g1}	0	-20	0	-20	V
I_a	11,8	—	11,3	—	mA
I_{g2}	4,3	—	3,9	—	mA
S	5,2	0,11	5,15	0,15	mA/V
R_i	0,4	—	0,475	—	M Ω
r_{aeq}	ca. 2,6	—	ca. 2,5	—	k Ω

1) Bei dieser Einstellung kann Dämpfung durch den Widerstand der Gitter-Kathoden-Strecke auftreten. Ist das unzulässig, so muß eine Einstellung mit -1,5 V Gittervorspannung gewählt werden.

At this adjustment attenuation may be caused by the resistance of the grid-cathode paths. If this is not permissible then -1.5 V grid bias must be adjusted.



Grenzwerte · Maximum ratings

U_{ao}	550	V
U_a	250	V
N_a	2,25	W
U_{g2o}	550	V
U_{g2}	250	V
N_{g2}	0,45	W
I_k	16,5	mA
R_{g1}	3	M Ω
$R_{g1}^{1)}$	22	M Ω
R_{g3}	10	k Ω
U_{g1e}	-1,3	V
R_{fk}	20	k Ω
U_{fk}	150	V

¹⁾ U_{g1} nur durch R_{g1} erzeugt.

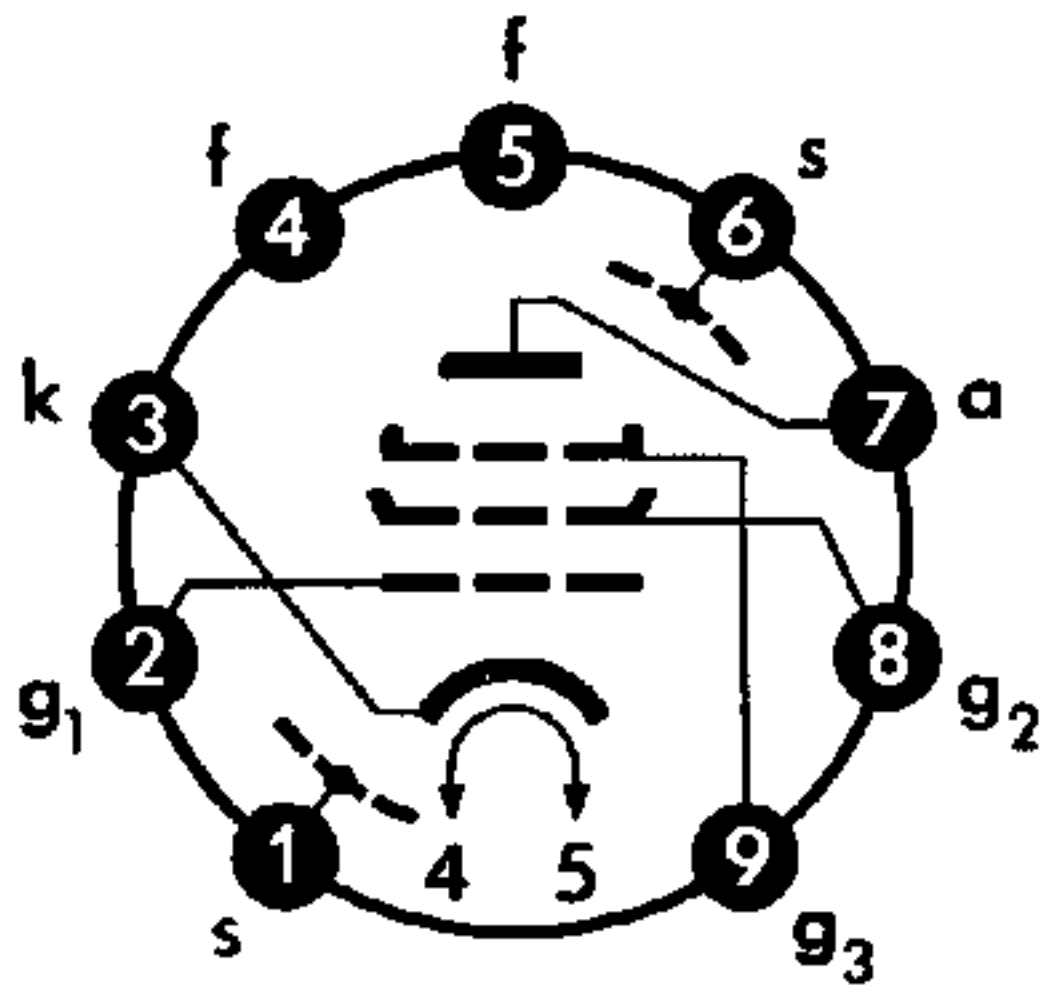
U_{g1} produced by voltage drop across R_{g1} only.

Kapazitäten · Capacitances

C_a	5,1	pF
C_{g1}	5,5	pF
C_{g1f}	< 0,05	pF
C_{g1a}	< 0,002	pF

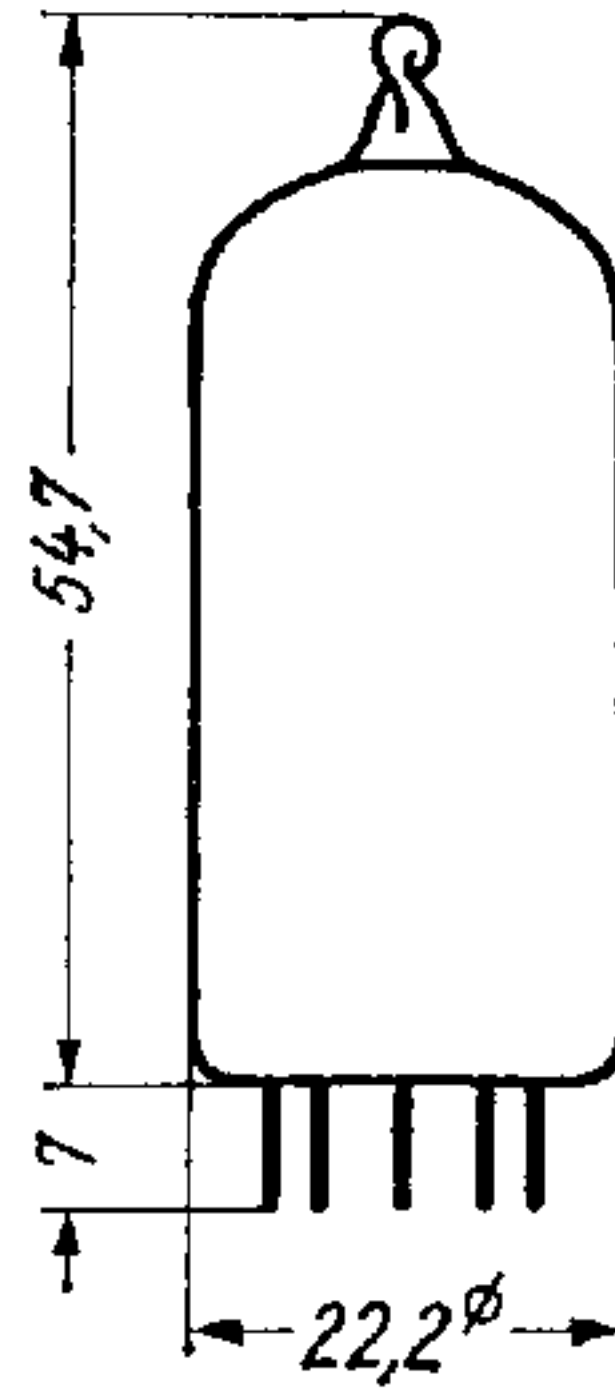


Sockelschaltbild
Base connection



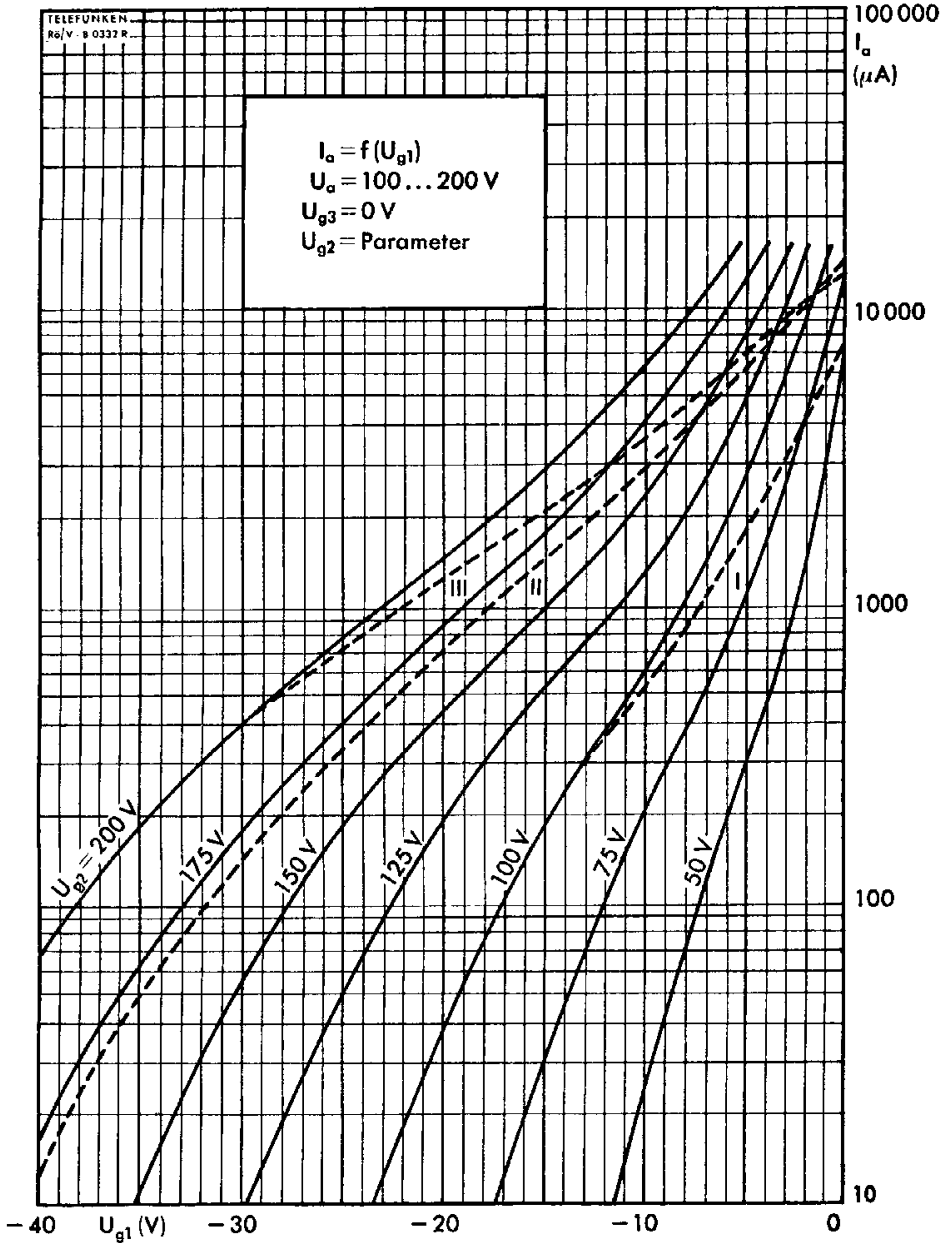
Pico 9 - Noval

max. Abmessungen
max. dimensions
 DIN 41539, Nenngröße 45, Form A



Gewicht · Weight
max. 15 g

Wenn notwendig, muß gegen Herausfallen der Röhre aus der Fassung Vorsorge getroffen werden.
 Special precaution must be taken to prevent the tube from becoming dislodged.



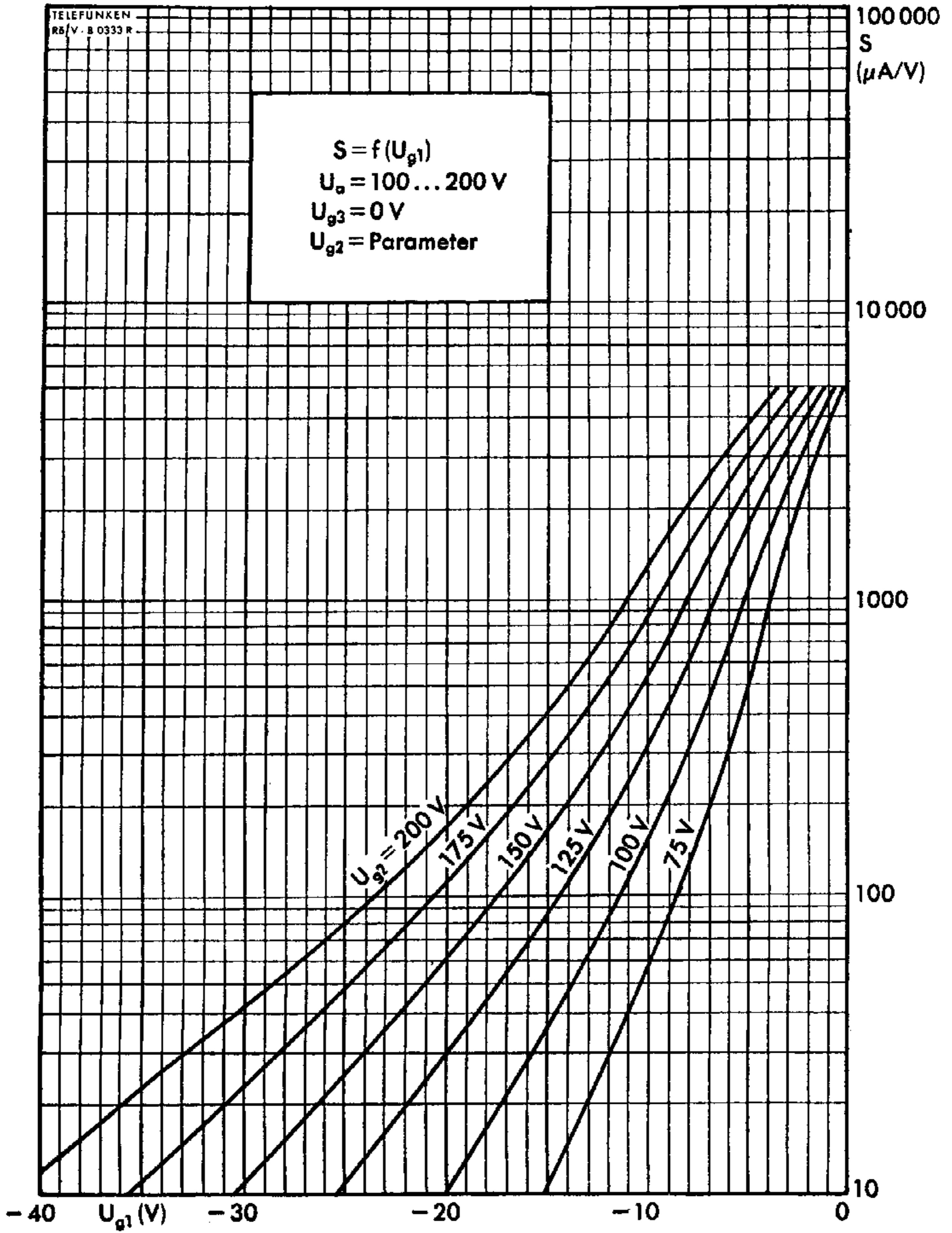
Regelkennlinien UF 89 als HF- oder ZF-Verstärker

I $U_b = 100 \text{ V}$
 $R_{g2} = 15 \text{ k}\Omega$

II $U_b = 170 \text{ V}$
 $R_{g2} = 15 \text{ k}\Omega$

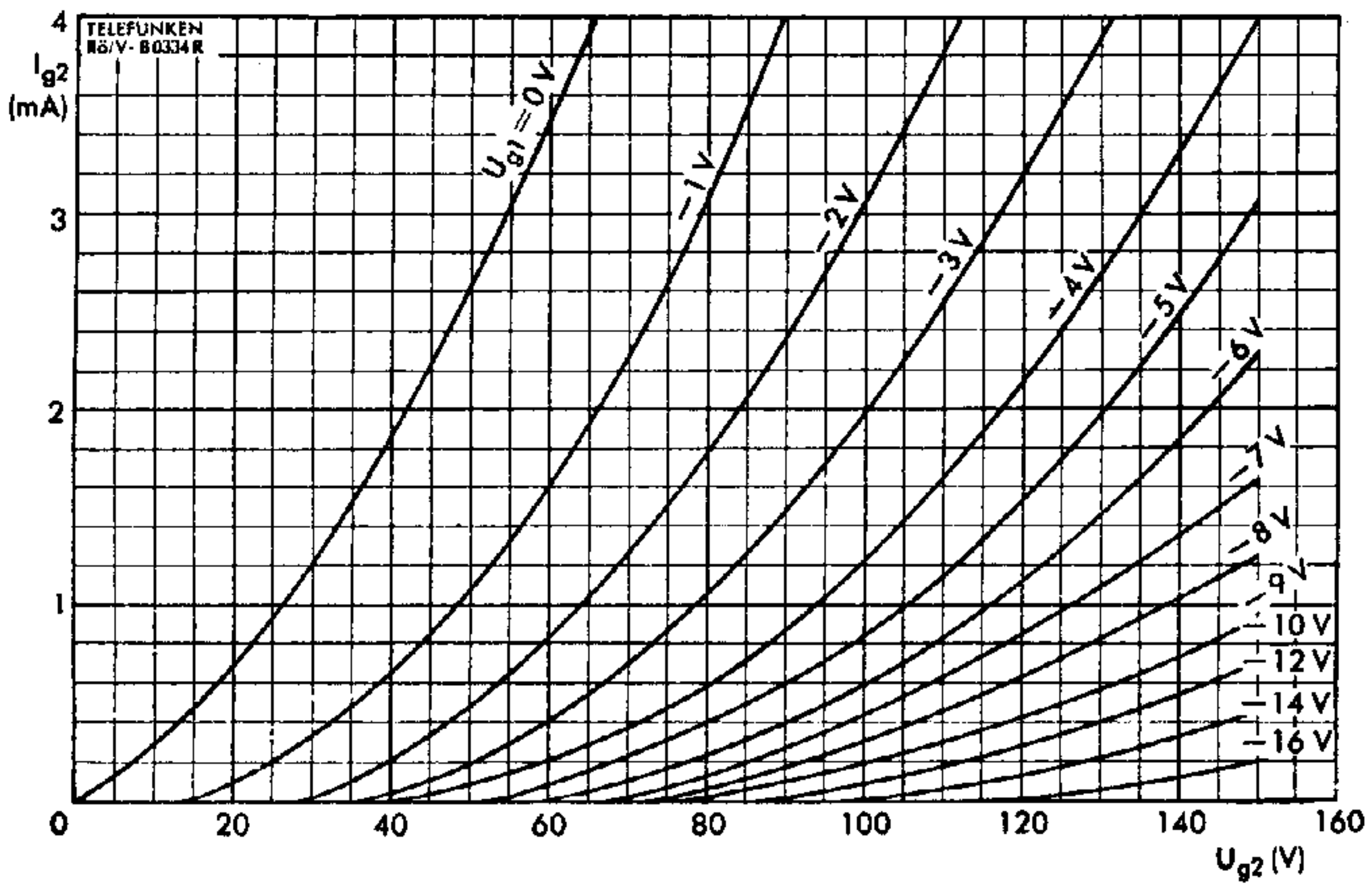
III $U_b = 200 \text{ V}$
 $R_{g2} = 24 \text{ k}\Omega$



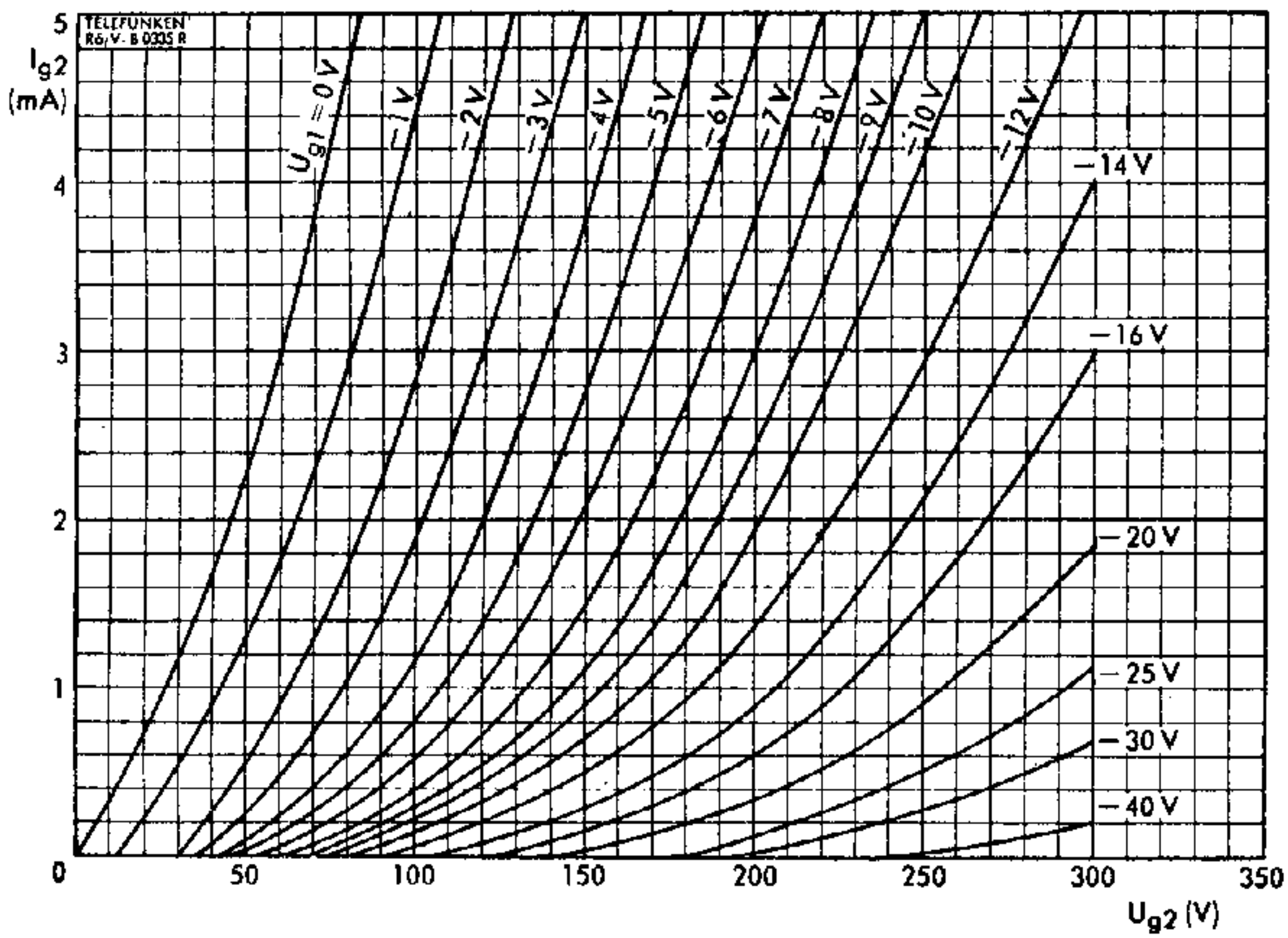


Regelkennlinien UF 89 als HF- oder ZF-Verstärker



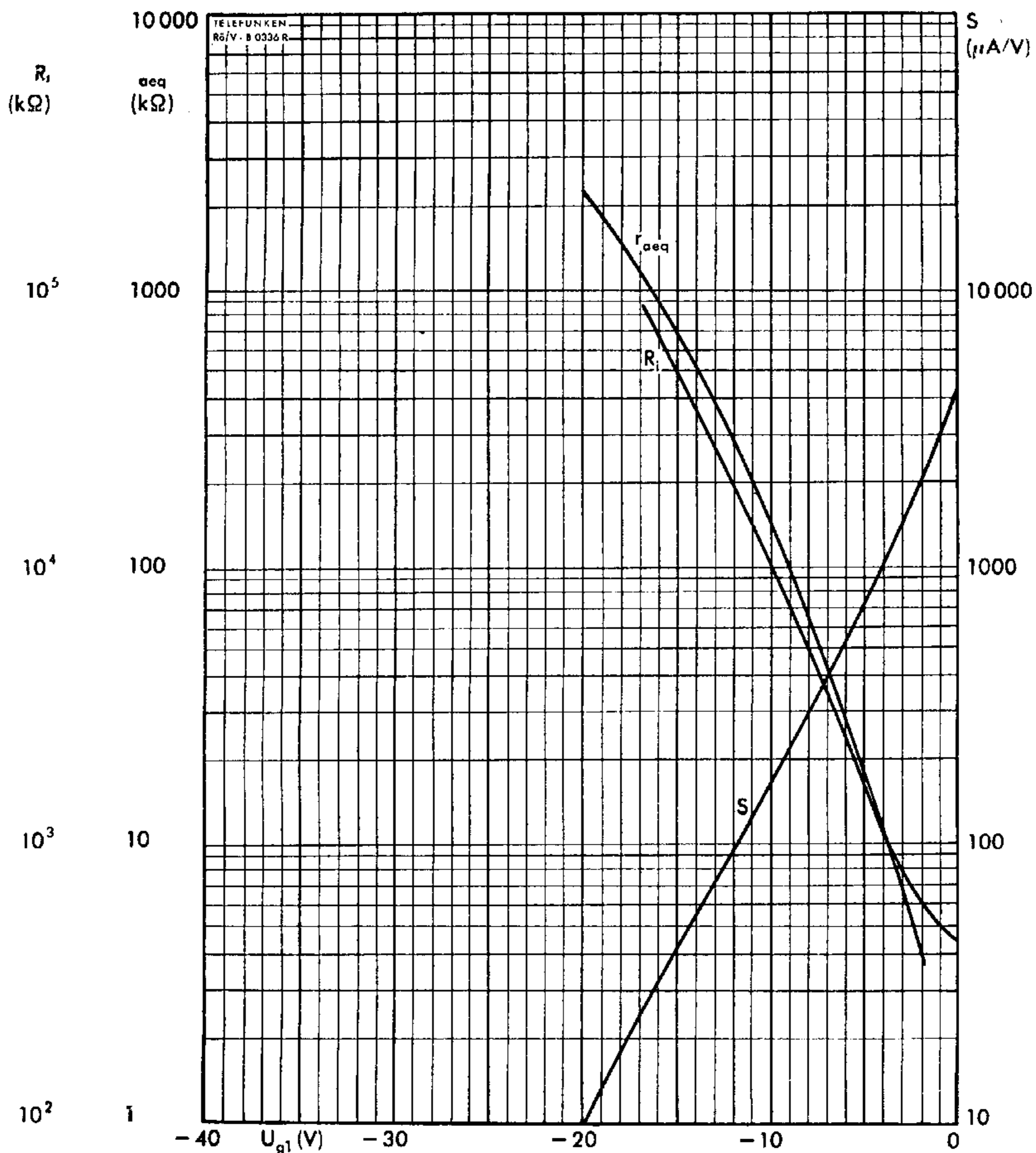


$I_{g2} = f(U_{g2})$
 $U_a = 100 \text{ V}$
 $U_{g3} = 0 \text{ V}$
 $U_{g1} = \text{Parameter}$



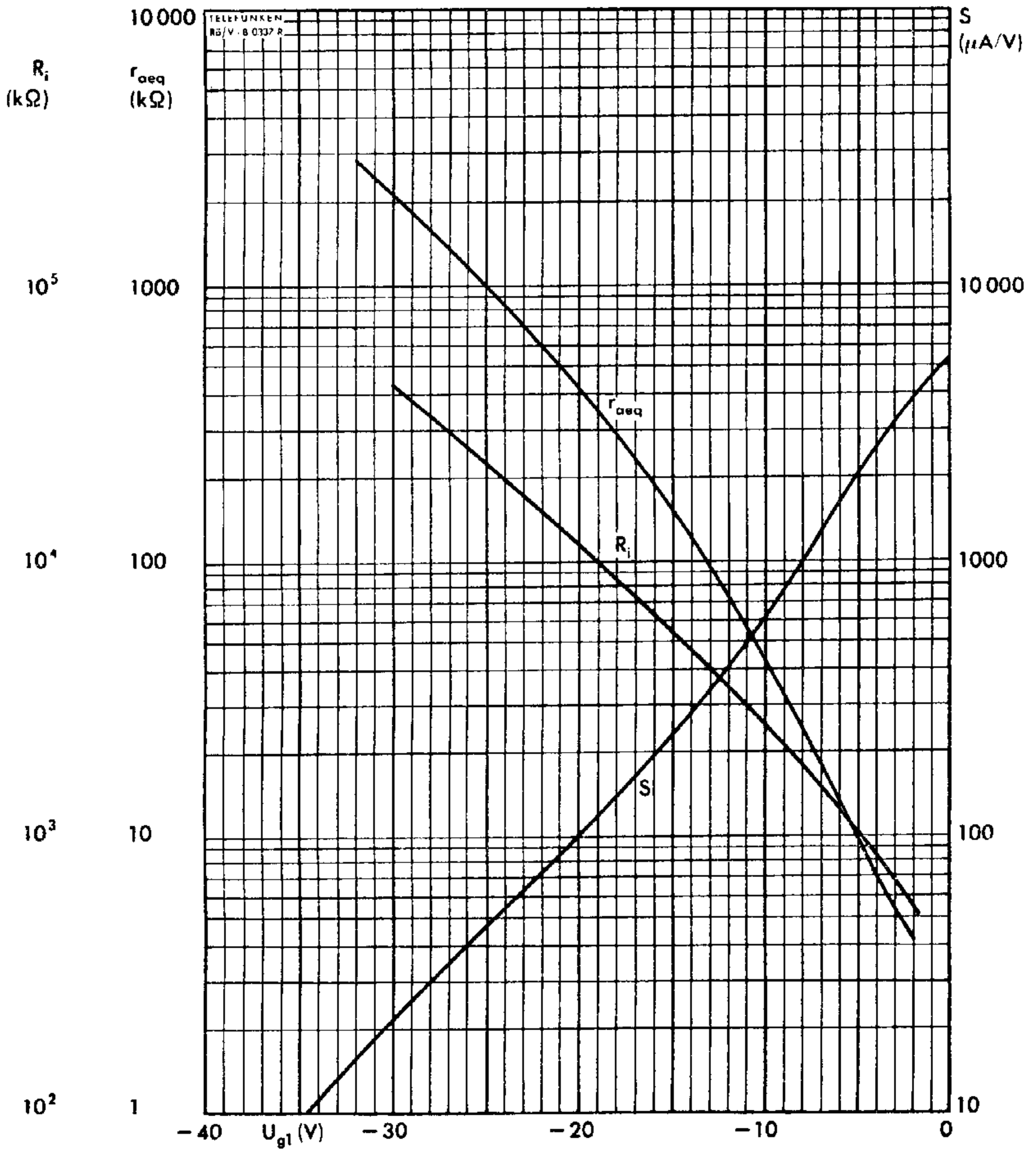
$I_{g2} = f(U_{g2})$
 $U_a = 170 \dots 200 \text{ V}$
 $U_{g3} = 0 \text{ V}$
 $U_{g1} = \text{Parameter}$





$R_i, S, r_{aeq} = f(U_{g1})$
 $U_b = 100 \text{ V}$
 $R_{g2} = 15 \text{ k}\Omega$



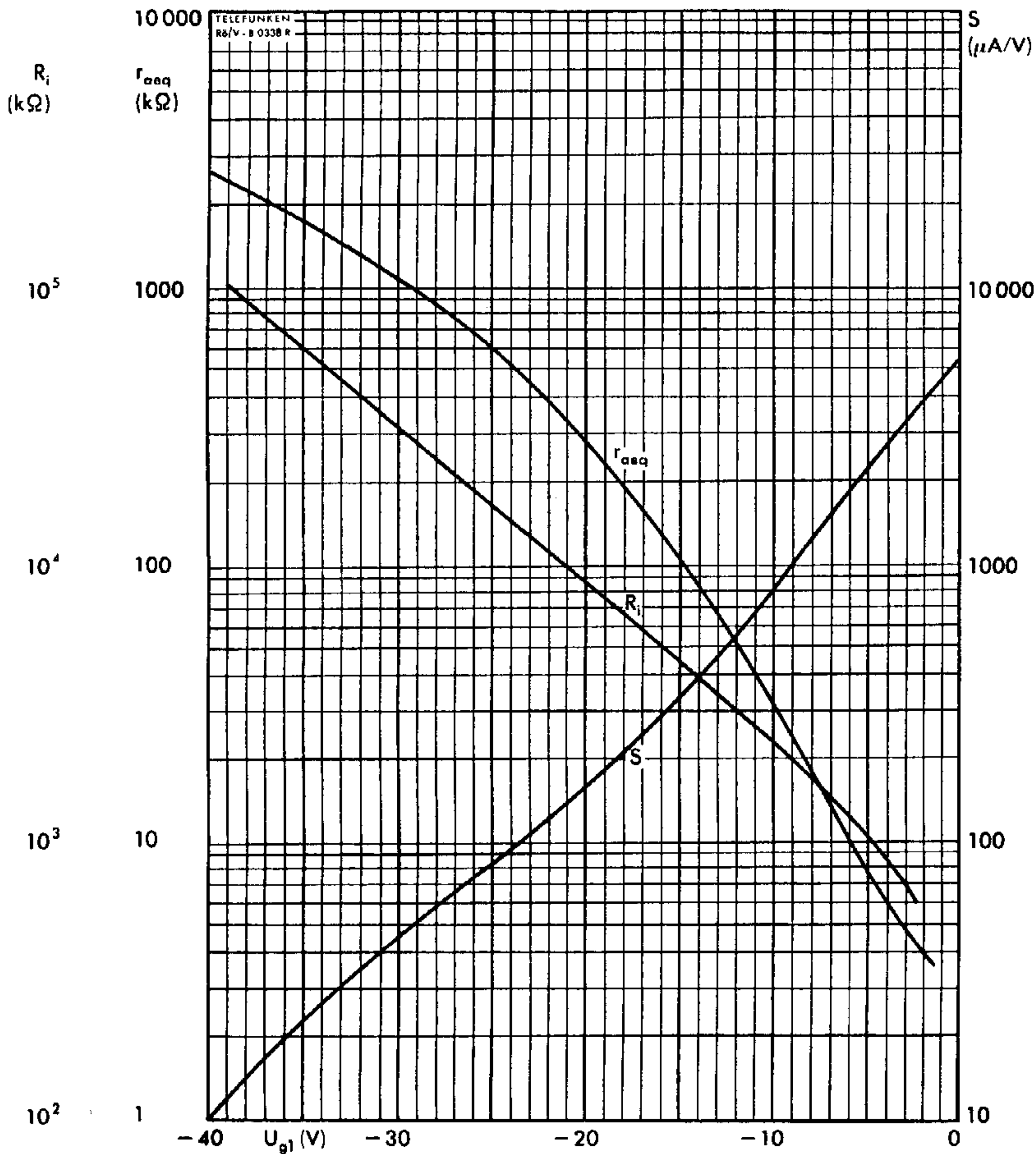


$$R_i, S, r_{aeq} = f(U_{g1})$$

$$U_b = 170 \text{ V}$$

$$R_{g2} = 15 \text{ k}\Omega$$



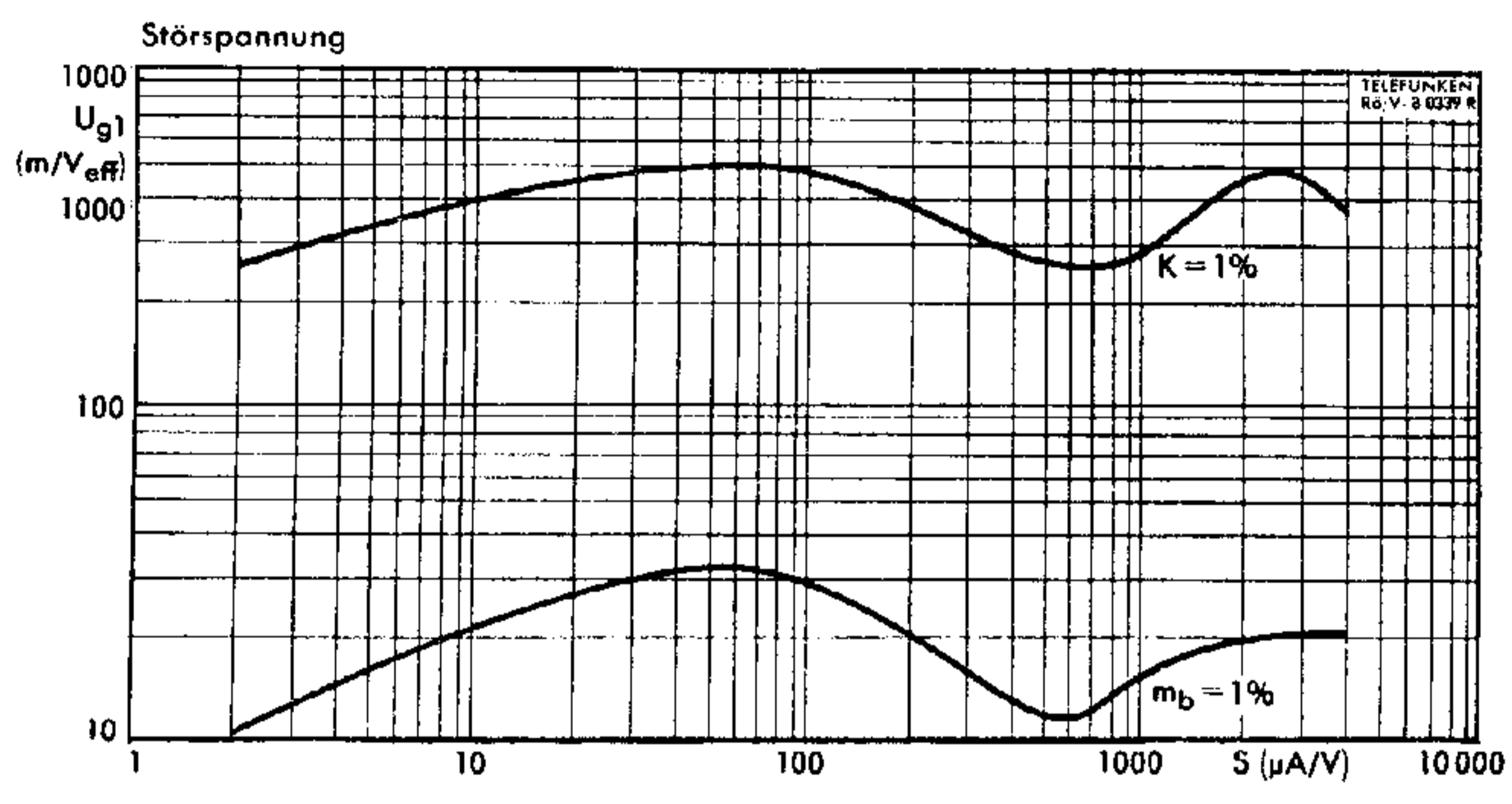


$R_i, S, r_{aeq} = f(U_{g1})$

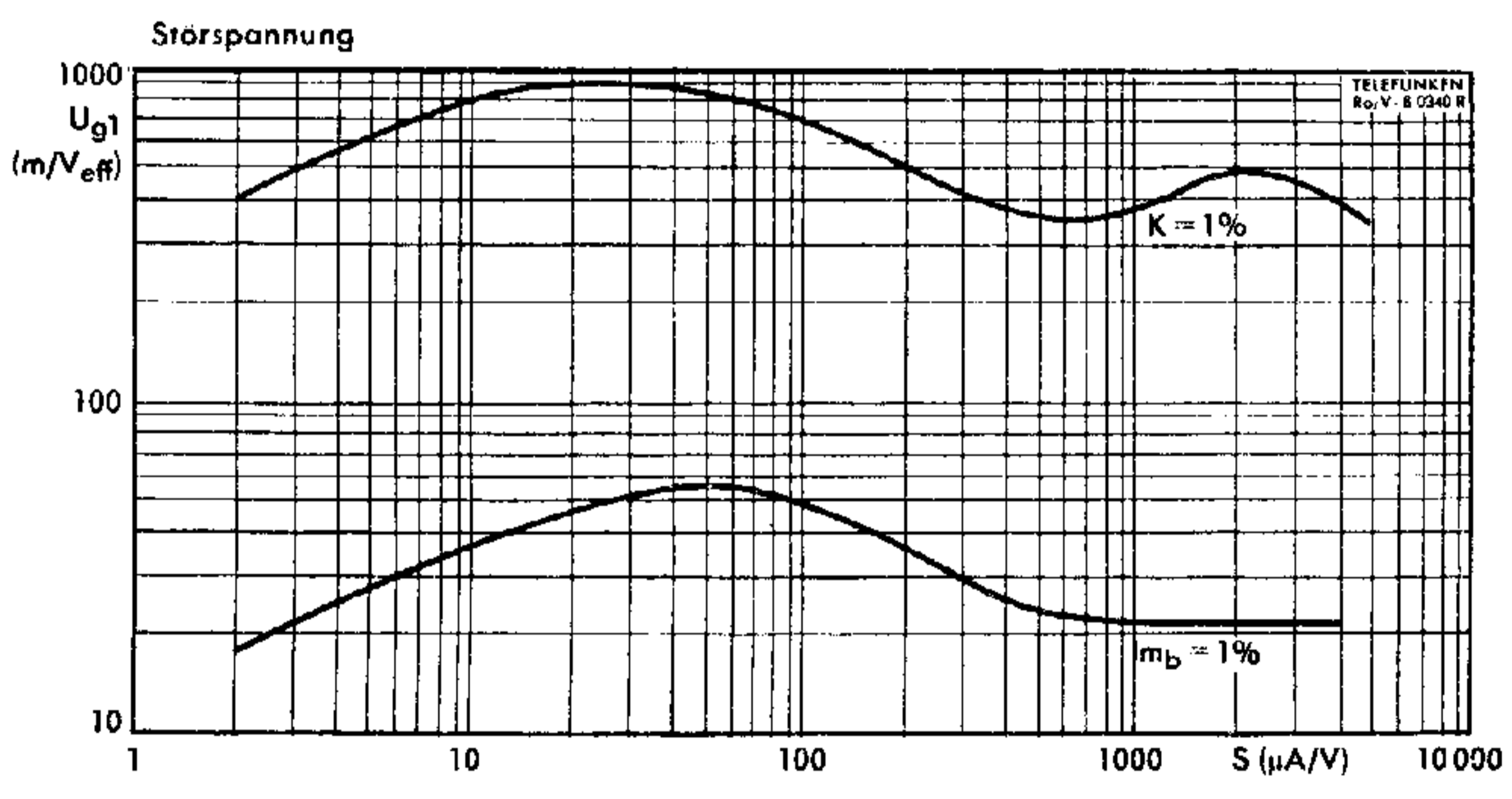
$U_b = 200 \text{ V}$

$R_{g2} = 24 \text{ k}\Omega$

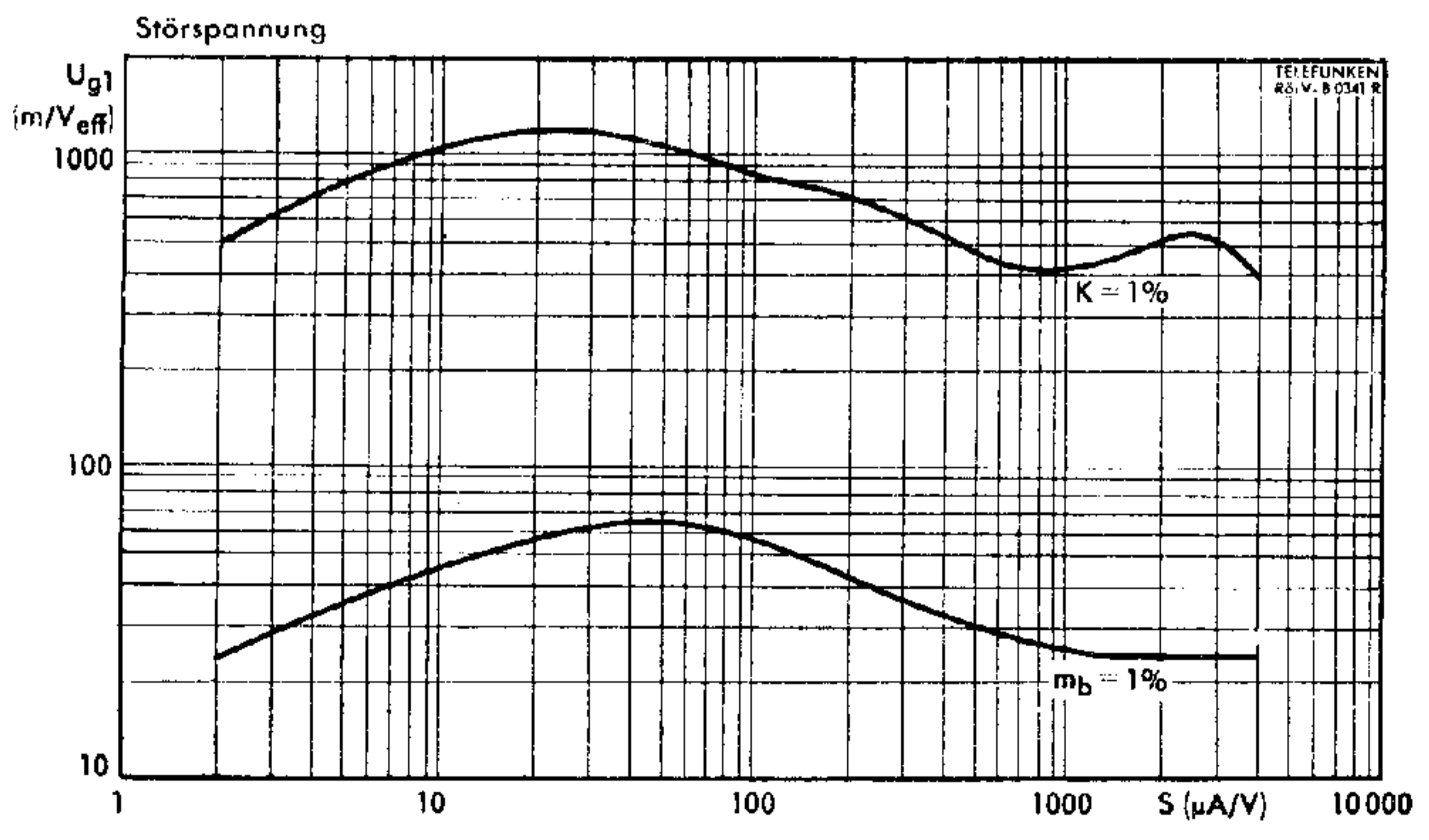




$U_b = 100$ V
 $R_{g2} = 0 \dots 15$ k Ω
 $U_{g3} = 0$ V

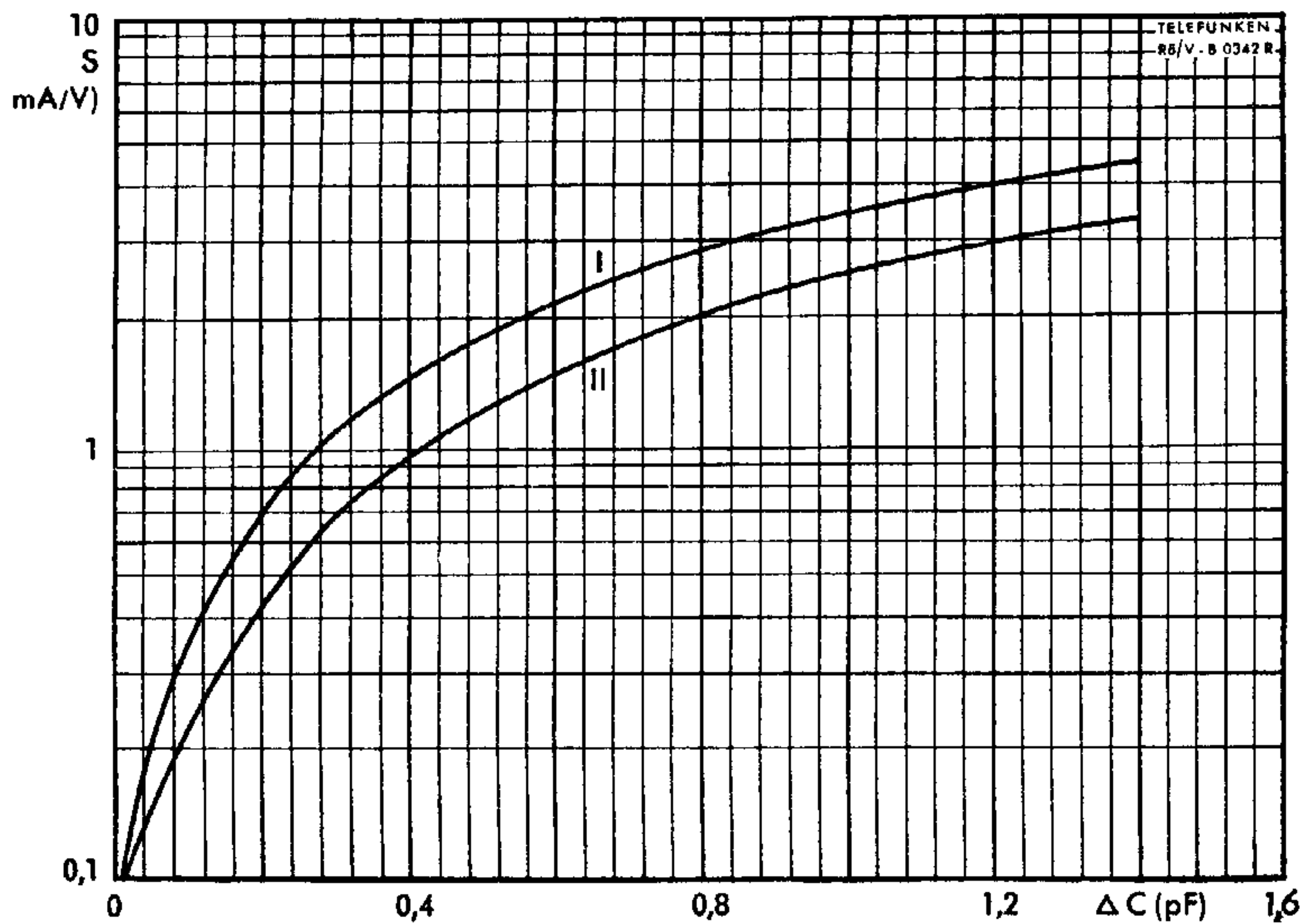


$U_b = 170$ V
 $R_{g2} = 15$ k Ω
 $U_{g3} = 0$ V



$U_b = 200$ V
 $R_{g2} = 24$ k Ω
 $U_{g3} = 0$ V





$S = f(\Delta C)$

I $U_b = 100 \text{ V}$
 $R_{g2} = 15 \text{ k}\Omega$

II $U_b = 200 \text{ V}$
 $R_{g2} = 24 \text{ k}\Omega$

