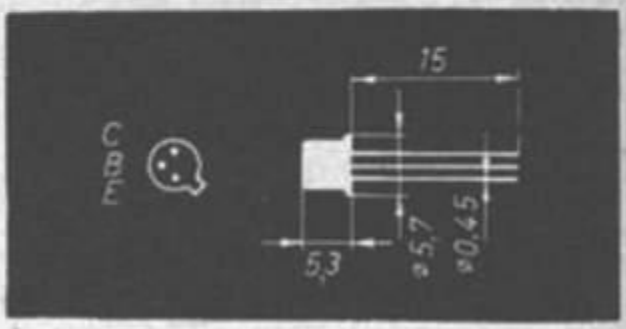
Verwendung: Schneller Silizium-npn-Planar-Epitaxie-Schalttransistor für Logikschaltungen bei Umgebungstemperaturen ϑ_a von −40 °C bis +125 °C

SS 106

Abmessungen: Bauform A 3/15 – 3a, TGL 11 811
Kollektor am Gehäuse
Masse ≈ 0,5 g



Zulässige Höchstwerte gültig bis ϑ_{jmax}

U_{CBO}	= 25 V	P_{tot}	300 mW
U_{CEO}	= 15 V	bei ϑ_a	= 25 °C
U_{EBO}	= 5 V	ϑ_j	= 175 °C
I_C	= 200 mA	ϑ_a	= 125 °C

Kennwerte für ϑ_a = 25 °C –5 grd

Wärmewiderstand $R_{thi} \leqq 150 \frac{grd}{W}$

$R_{th} \leqq 500 \frac{grd}{W}$

	Min.	Typ	Max.	Meßbedingungen	Stromverstärkungsgruppen
Restströme					
I_{CBO}		10 nA	50 nA	U_{CB} = 15 V	
Durchbruchspannungen					
$U_{(BR)CBO}$	25 V	45 V		I_C = 10 µA	
$U_{(BR)CEO}$	15 V	35 V		I_C = 5 mA	
$U_{(BR)EBO}$	5 V	7,5 V		I_E = 10 µA	
Sättigungsspannung					
U_{CEsat}		0,25 V	0,5 V	I_C = 10 mA, I_B = 1 mA	
U_{BEsat}		0,85 V		I_C = 10 mA, I_B = 1 mA	
Übergangsfrequenz					
f_T	200 MHz	450 MHz		U_{CE} = 10 V, I_C = 10 mA, f = 100 MHz	
Ausgangskapazität					
C_{22b}		2,8 pF	5 pF	U_{CB} = 10 V, I_E = 0, f = 2 MHz	
Gleichstromverstärkung					
B	18	80		U_{CE} = 1 V, I_C = 10 mA	
	18		35		A
	28		71		B
	56		140		C
	112		280		D
	224		560		E

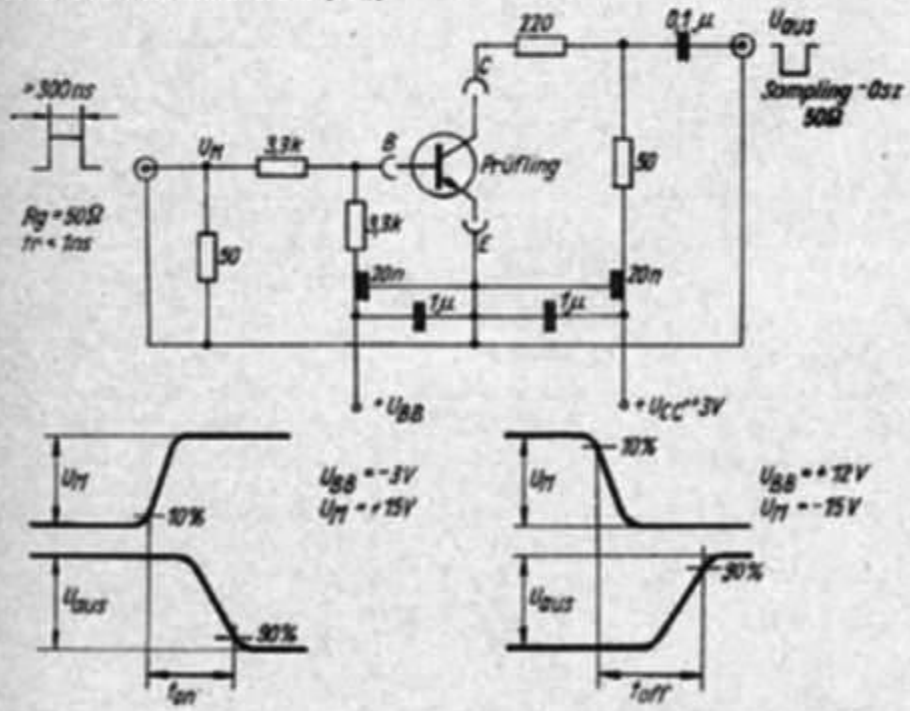
SS 106

	Min.	Typ	Max.	Meßbedingungen	Stromverstärkungsgruppen
Schaltzeiten					
ton		15 ns	40 ns	I_C = 10 mA, I_{B1} = 3 mA, R_L = 270 Ω, $-I_{B2}$ = 1,5 mA	
toff		35 ns	75 ns		

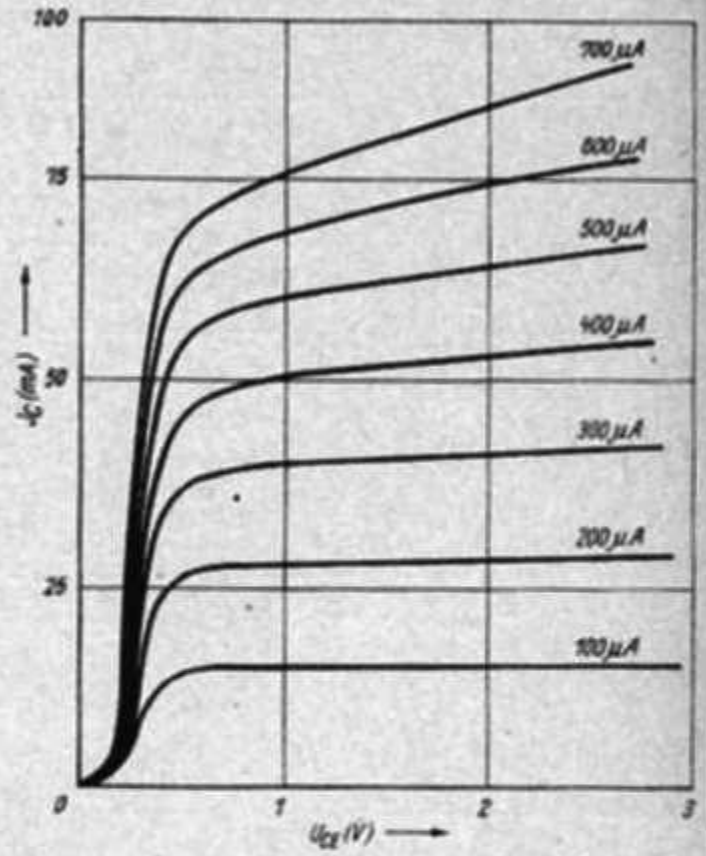
Bestellbeispiel für einen Transistor der Stromverstärkungsgruppe C

Transistor SS 106 C

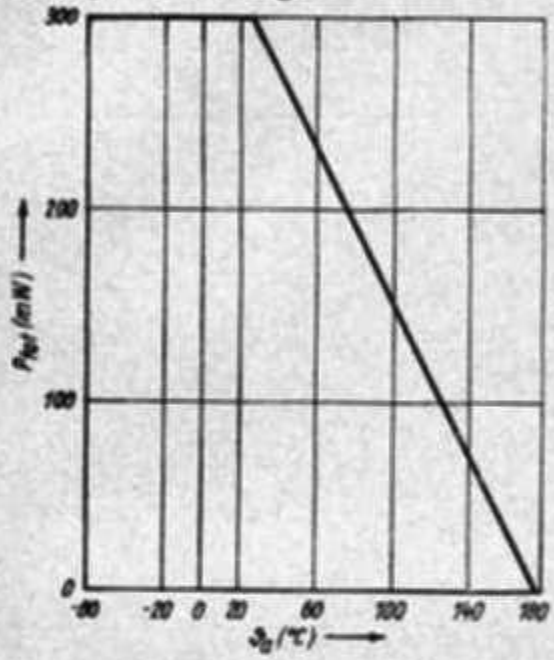
Meßschaltung zur Messung der Einschaltzeit (t_{on})
und der Ausschaltzeit (t_{off})



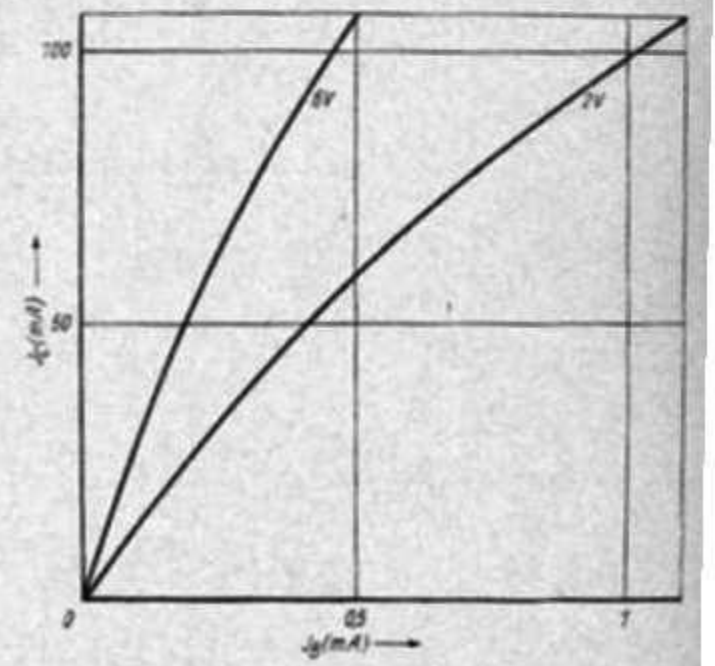
$J_C = f(U_{CE})$
J_B Parameter



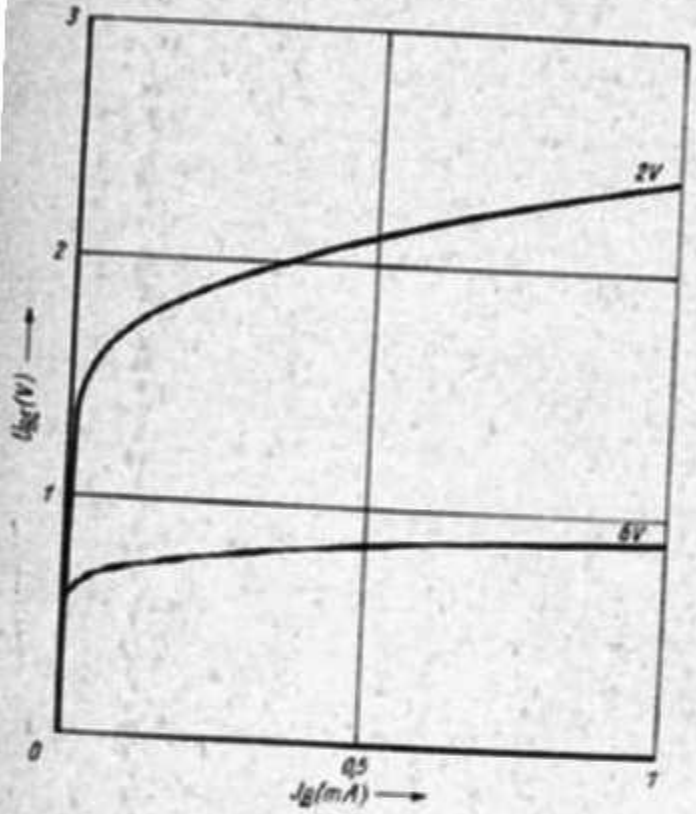
$P_{tot} = f(\vartheta_a)$
freitragende Montage



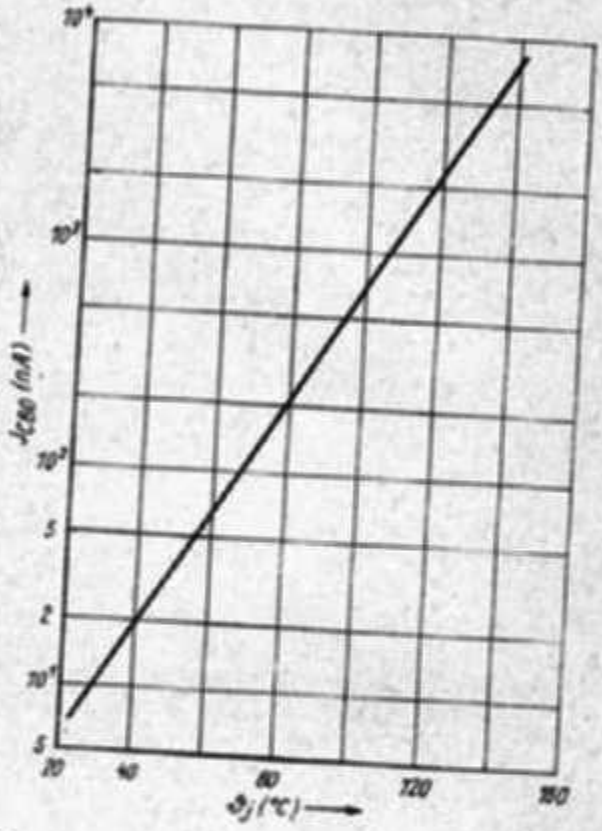
$J_C = f(J_B)$
U_{CE} = Parameter



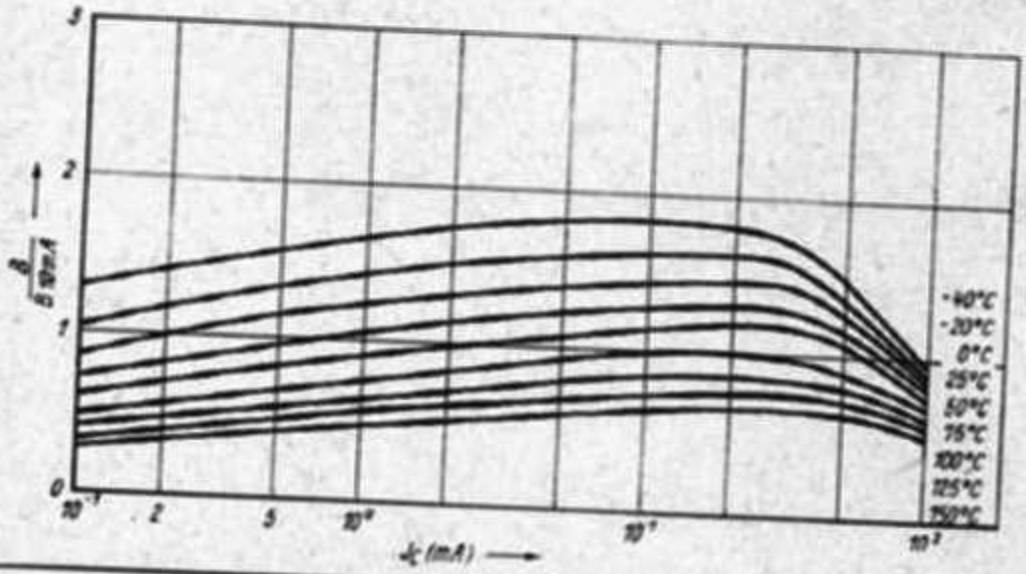
$U_{BE} = f(J_B)$
U_{CE} = Parameter



$J_{CBO} = f(\vartheta_j)$
U_{CB} = 20V

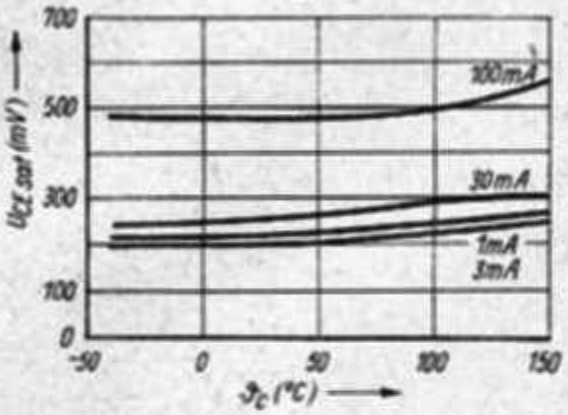


$B = f(J_C)$
U_{CE} = 1V
ϑ_C = Parameter



$U_{CE\,sat} = f(\vartheta_C)$, I_C = Parameter

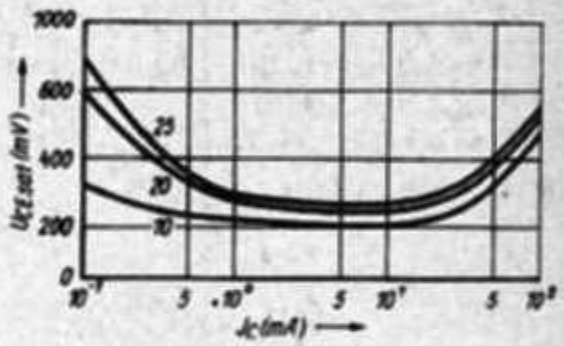
$\frac{I_C}{I_B} = 10$



$U_{CE\,sat} = f(I_C)$

$\frac{I_C}{I_B}$ = Parameter

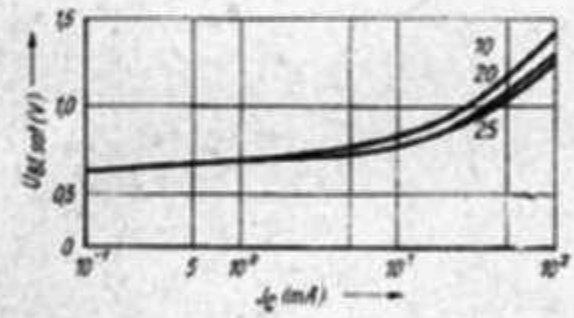
$\vartheta_C = 25°C$



$U_{BE\,sat} = f(I_C)$

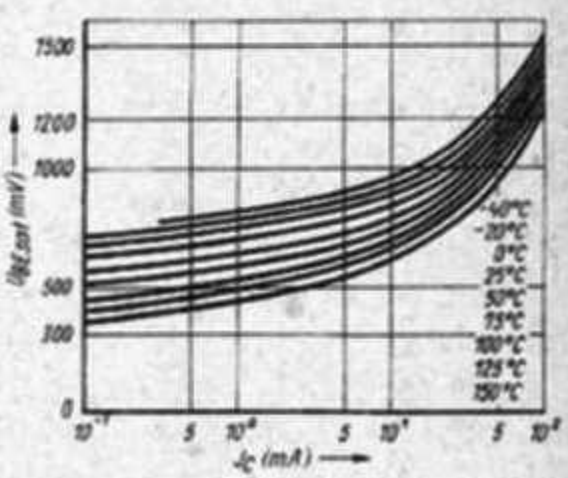
$\frac{I_C}{I_B}$ = Parameter

$\vartheta_C = 25°C$



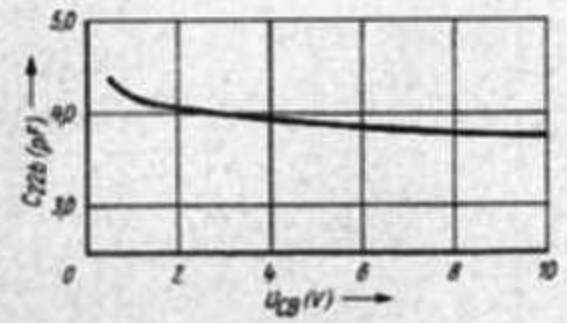
$U_{BE\,sat} = f(I_C)$, ϑ_C = Parameter

$\frac{I_C}{I_B} = 10$

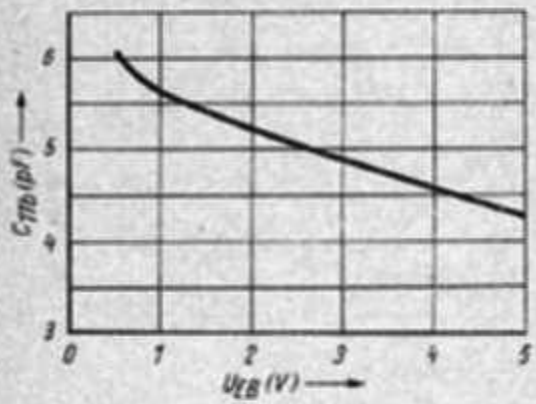


$C_{22b} = f(U_{CB})$

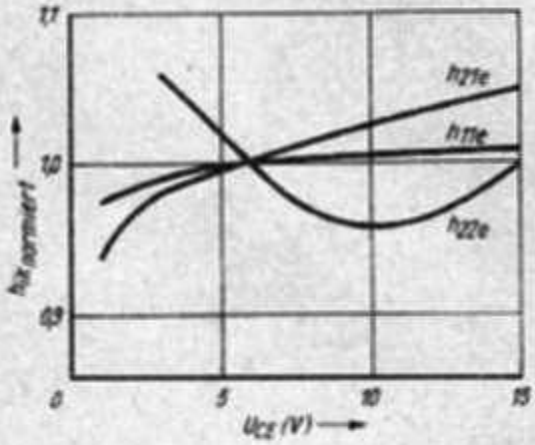
$f = 2\,MHz$



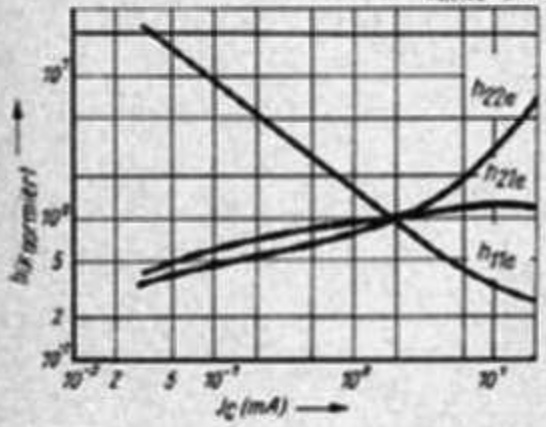
$C_{11b} = f(U_{EB})$
$f = 2\,MHz$



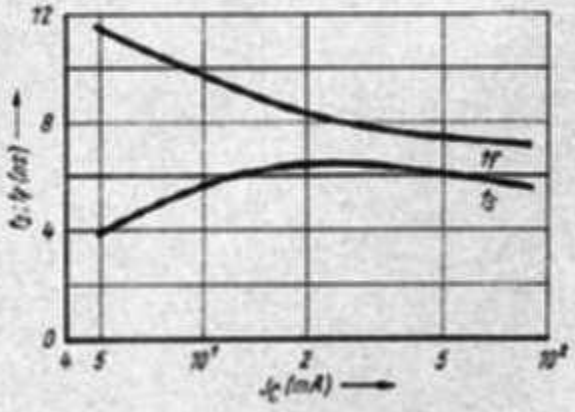
h-Parameter (normiert) = f (U_{CE})
bei I_C = 2mA, f = 1kHz
hik normiert = $\frac{h_{ik}(U_{CE})}{h_{ik}(U_{CE} = 6V)}$



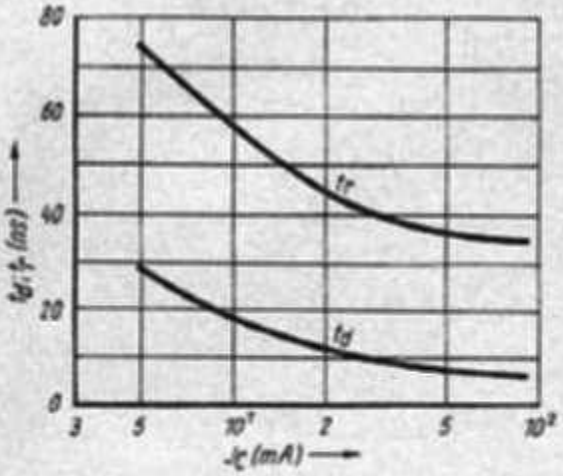
h-Parameter (normiert) = f (I_C) bei U_{CE} = 6V
f = 1kHz
hik normiert $\frac{h_{ik}(I_C)}{h_{ik}(I_C = 2mA)}$



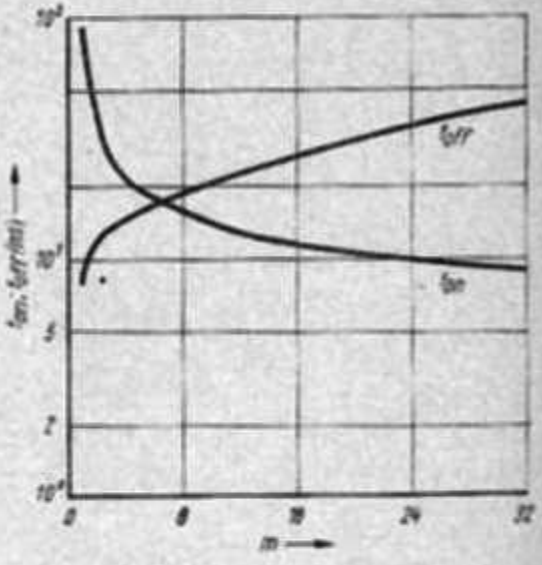
$f_\beta : f_T = f(I_C)$
bei U_B = 10V
$I_C = 10 \cdot I_{B1} = -10 \cdot I_{B2}$
$R_C = R_B$



$t_d; t_r = f(I_C)$
bei $U_B = 10V$
$I_C = 10 I_{B1} = -10 I_{B2}$
$R_C = R_B$



$t_{on}; t_{off} = f(I_B)$
bei $I_C = 10mA$
$R_L = 270\Omega$



$F = f(I_C)$
bei $R_g = 500\Omega$
U_{CE} = Parameter
$f = 1kHz$