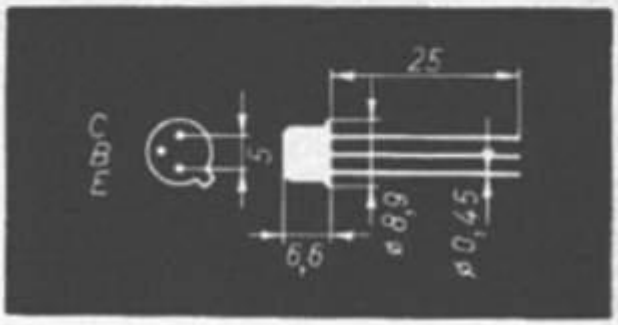
SC 112

Verwendung: Silizium-npn-Planar-Epitaxie-Niederfrequenz-Transistor für rauscharme Vorstufen bei Umgebungstemperaturen ϑ_a von −40 °C bis +125 °C

Abmessungen: Bauform B 3/25 – 3a,

TGL 11 811

Masse ≈ 1 g



Zulässige Höchstwerte bis ϑ_{jmax}

U_{CBO}	= 20 V	P_{tot}	= 2,5 W
U_{CEO}	= 20 V	bei ϑ_c	= 25 °C
U_{EBO}	= 5 V	ϑ_j	= 175 °C
I_C	= 100 mA	ϑ_a	= 125 °C
P_{tot}	= 600 mw		
bei ϑ_a	= 25 °C		

Wärmewiderstand $R_{th} \leqq 250 \frac{grd}{W}$

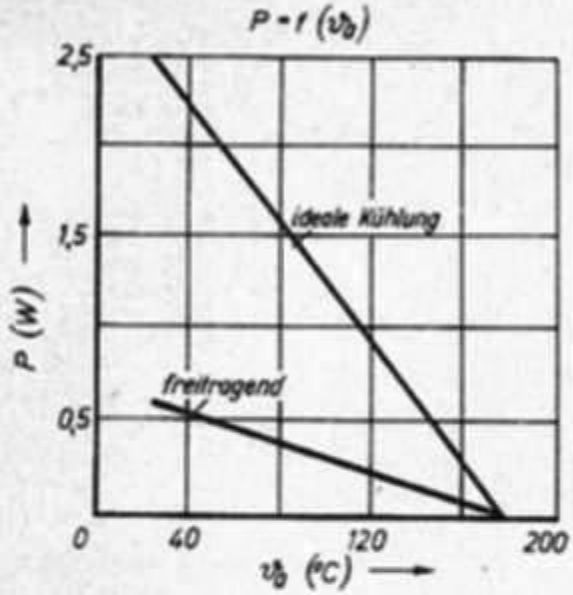
$R_{thl} \leqq 60 \frac{grd}{W}$

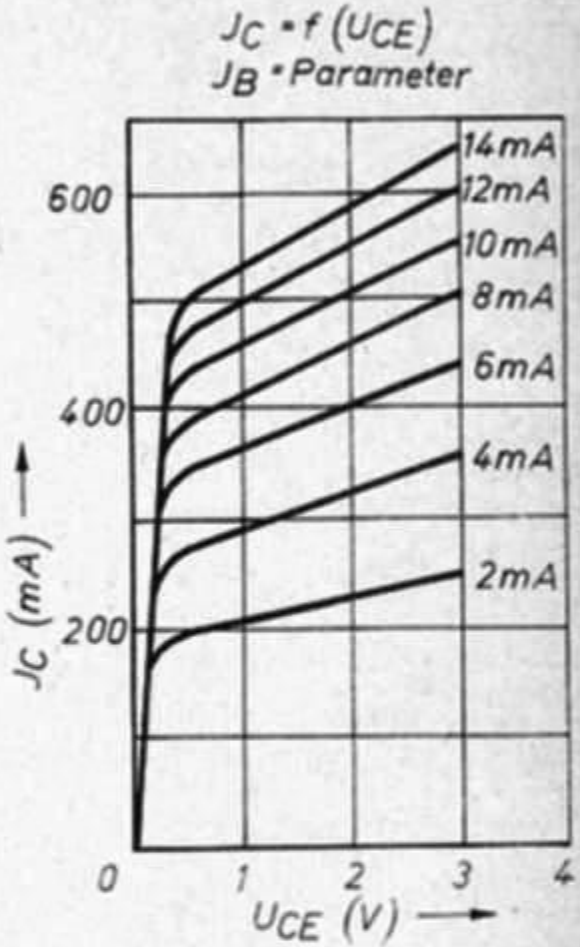
Kennwerte für ϑ_a = 25 °C –5 grd

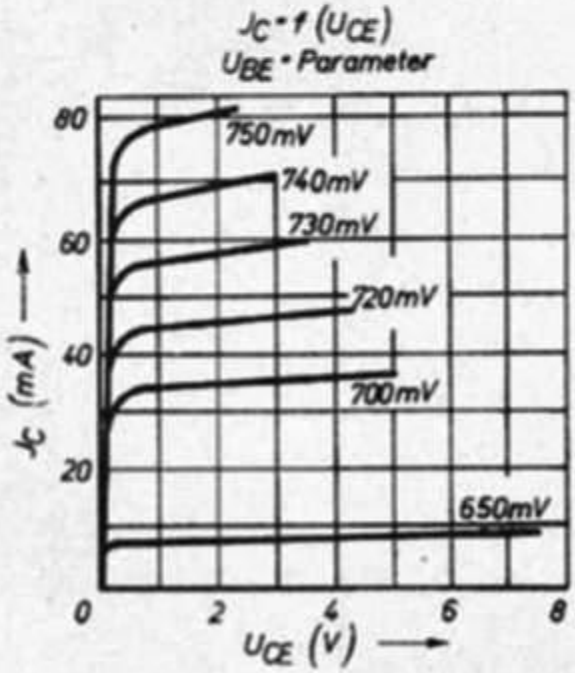
	Min.	Typ	Max.	Meßbedingungen	Stromverstärkungsgruppen
Restströme					
I_{CBO}			25 nA	U_{CB} = 15 V	
Durchbruchspannungen					
$U_{(BR)CBO}$	20 V			I_C = 5 µA	
$U_{(BR)CEO}$	20 V			I_C = 50 mA	
$U_{(BR)EBO}$	5 V			I_E = 5 µA	
Stromverstärkung					
h_{21e}	57		139	U_{CE} = 6 V, I_C = 2 mA,	c
h_{21e}	113		276	f = 1 kHz	d
h_{21e}	226		550		e
Übergangsfrequenz					
f_T	60 MHz			U_{CE} = 10 V, I_C = 10 mA, f = 15 MHz	
Rauschfaktor					
F			5 dB	U_{CE} = 6 V, I_C = 0,2 mA, f = 1 kHz, R_g = 500 Ω	

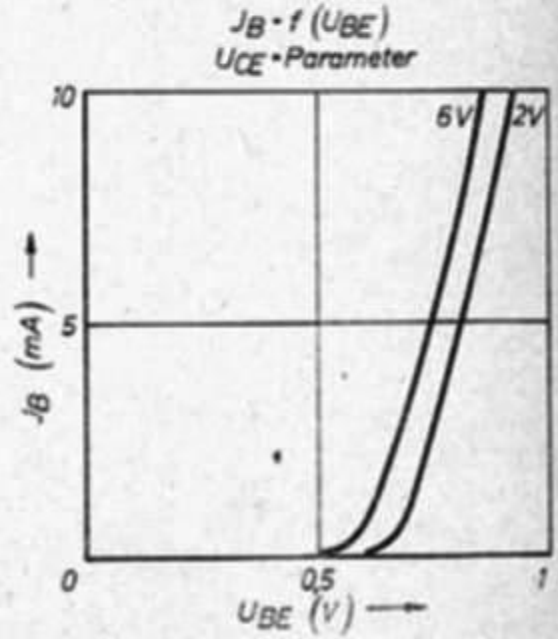
Bestellbeispiel für einen Transistor der Stromverstärkungsgruppe d

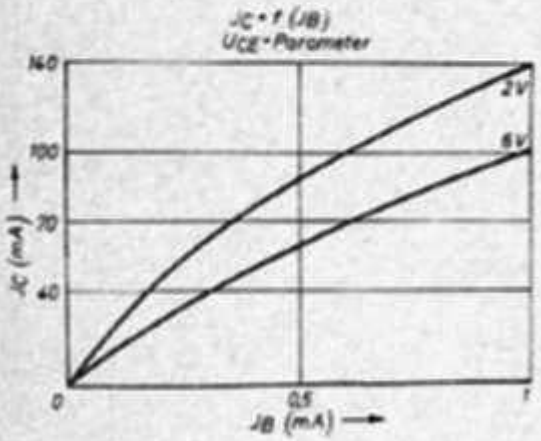
Transistor SC 112 d

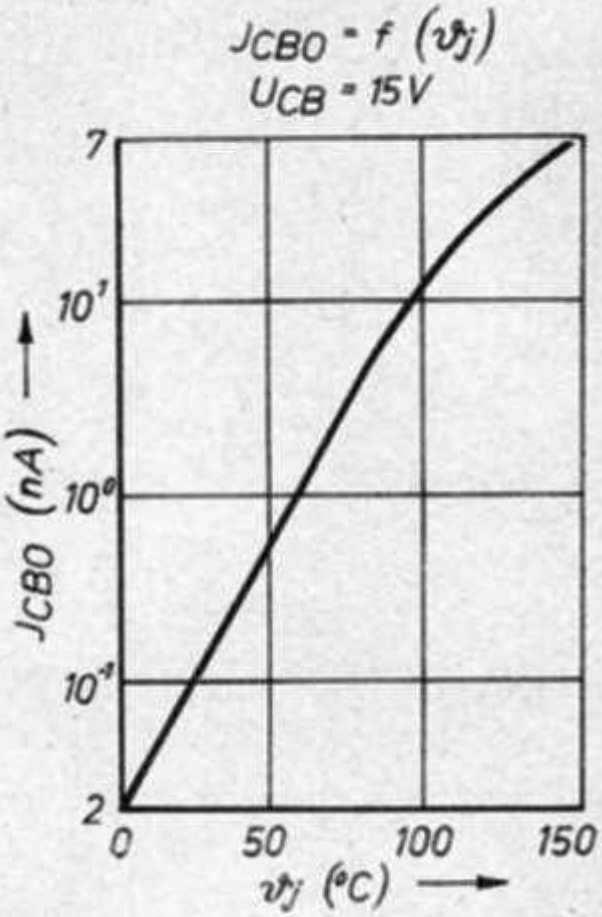

P = f (ϑ0)
2,5
1,5
0,5
P (W)
ideale Kühlung
freitragend
0
40
120
200
ϑ0 (°C)

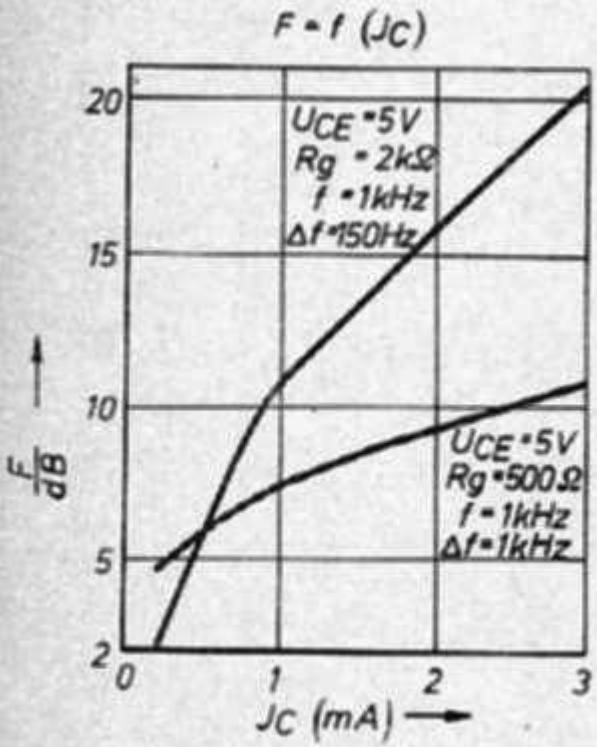

JC = f (UCE)
JB = Parameter
600
400
200
JC (mA)
14mA
12mA
10mA
8mA
6mA
4mA
2mA
0
1
2
3
4
UCE (V)


JC = f (UCE)
UBE = Parameter
80
60
40
20
JC (mA)
750mV
740mV
730mV
720mV
700mV
650mV
0
2
4
6
8
UCE (V)

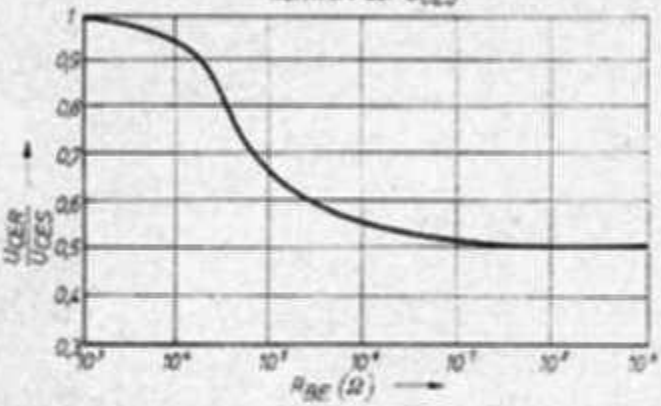

JB = f (UBE)
UCE = Parameter
10
5
JB (mA)
6V
2V
0
0,5
1
UBE (V)


$J_C = f(J_B)$
U_{CE} = Parameter
140
100
70
40
0
0,5
1
2V
5V
J_C (mA)
J_B (mA)


$J_{CBO} = f(\vartheta_j)$
$U_{CB} = 15V$
7
10^1
10^0
10^{-1}
2
J_{CBO} (nA)
0
50
100
150
ϑ_j (°C)


$F = f(J_C)$
20
15
10
5
2
U_{CE} = 5V
R_g = 2kΩ
f = 1kHz
Δf = 150Hz
U_{CE} = 5V
R_g = 500Ω
f = 1kHz
Δf = 1kHz
$\frac{F}{dB}$
0
1
2
3
J_C (mA)

$U_{CER} = f(R_{BE})$
$J_C = 1mA$
normiert auf U_{CES}



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