Silizium-NPN-Epitaxial-Planar-HF-Transistor
Silicon NPN Epitaxial Planar RF Transistor

Anwendungen: HF-Verstärker in Basisschaltung in Dick- und Dünnfilmschaltungen

Applications: RF-amplifier in common base configuration in thick and thin film circuits

Besondere Merkmale:

- Kleine Rückwirkungskapazität
- Niedriger Rauschfaktor

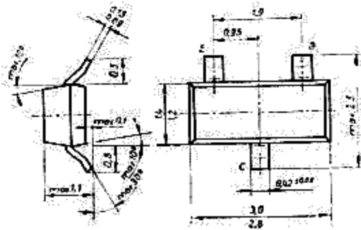
Features:

- Small feedback capacitance
- Low noise figure

Abmessungen in mm

Dimensions in mm

Gehäuse Bauform Y,
ähnlich SOT 23
TGL 11 811
Plastgehäuse
Masse ca. 0,02 g



Case construction Y,
similar SOT 23
TGL 11 811
Plastic case
Weight about 0.02 g

Absolute Grenzdaten
Absolute maximum ratings

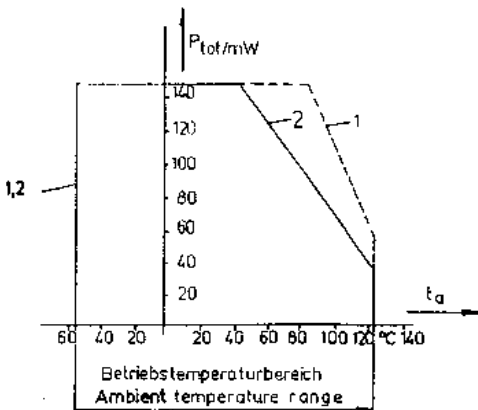
Kollektor-Basis-Spannung Collector-base voltage	U_{CBO}	40	V
Kollektor-Emitter-Spannung Collector-emitter voltage	U_{CEO}	25	V
Emitter-Basis-Spannung Emitter-base voltage	U_{EBO}	4	V
Kollektorstrom Collector current	I_C	25	mA
Gesamtverlustleistung Total power dissipation $t_{amb} \leq 45\,°C$, $R_{thJA} \leq 0{,}7$ K/mW	P_{tot}	150	mW
Sperrschichttemperatur Junction temperature	t_j	150	°C
Umgebungstemperaturbereich Ambient temperature range	t_{amb}	—55 ... +125	°C
Lagerungstemperaturbereich Storage temperature range	t_{stg}	—55 ... +150	°C

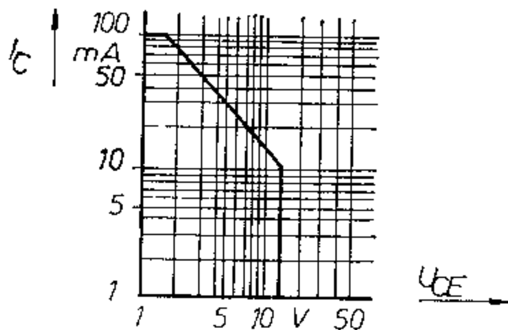
		Min.	Typ.	Max.	
Wärmewiderstände **Thermal resistance**					
Sperrschicht-Umgebung Junction-ambient auf Glassubstrat 7×7×1 mm on glass substrat	R_{thJA}			0,7	K/mW
auf Keramik 30×12×1 on ceramic	R_{thJA}			0,45	K/mW
Statische Kenngrößen **DC characteristics** $t_{amb} = 25\,°C - 5$ K					
Kollektor-Basis-Reststrom Collector cut-off current $U_{CB} = 40$ V	I_{CBO}		< 1	500	nA
Kollektor-Emitter-Durchbruchspannung Collector-emitter breakdown voltage $I_C = 1$ mA	$U_{(BR)\,CEO}$[1]	25			V
Emitter-Basis-Durchbruchspannung Emitter-base breakdown voltage $I_E = 10\,\mu A$	$U_{(BR)\,EBO}$	4			V
Basisstrom Base current $U_{CE} = 10$ V, $I_C = 1$ mA	I_B		13	35	µA
Dynamische Kenngrößen **AC characteristics** $t_{amb} = 25\,°C - 5$ K					
Grenzfrequenz Cut-off frequency $U_{CB} = 10$ V, $I_C = 1$ mA, f = 100 MHz	f_{yfb}		750		MHz
Rauschfaktor Noise figure $U_{CB} = 10$ V, $I_C = 1$ mA, f = 100 MHz, $Y_G = (5 - j\,3{,}3)$ mS	F		1,8	4	dB
Kollektor-Rückwirkungszeitkonstante Feedback time constant $U_{CB} = 10$ V, $I_C = 1$ mA, f = 30 MHz	$r_{bb'}C_{b'c}$		8,4		ps
Rückwirkungskapazität Feedback capacitance $U_{CB} = 10$ V, $I_E = 0$, f = 10,7 MHz	$-C_{rb}$		0,1	0,35	ps

y-Parameter in Basisschaltung (typ.)
y-parameters in common base configuration (typ.)

$U_{CB} = 10\,V$, $I_C = 1\,mA$, $f = 100\,MHz$			
	g_{ib}	37	mS
	C_{ib}	−6	pF
	$\|y_{rb}\|$	63	µS
	$-\varphi_{rb}$	72	°
	$\|y_{fb}\|$	13	mS
	$-\varphi_{fb}$	−171	°
	g_{ob}	30	µS
	C_{ob}	1,7	pF

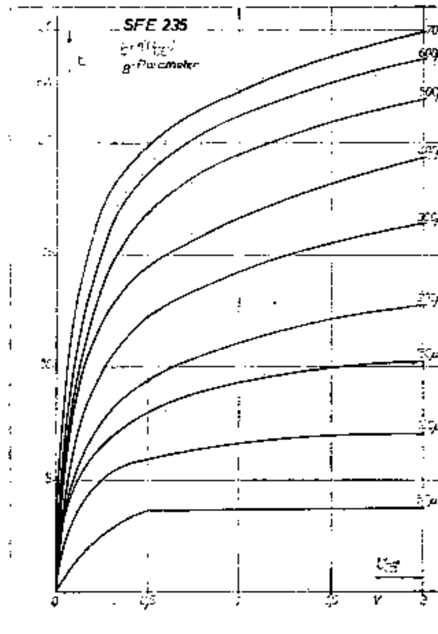
[1] Messung erfolgt impulsmäßig, $t_p/T = 0{,}01$, $t_p = 0{,}3$ ms
Pulse measurement

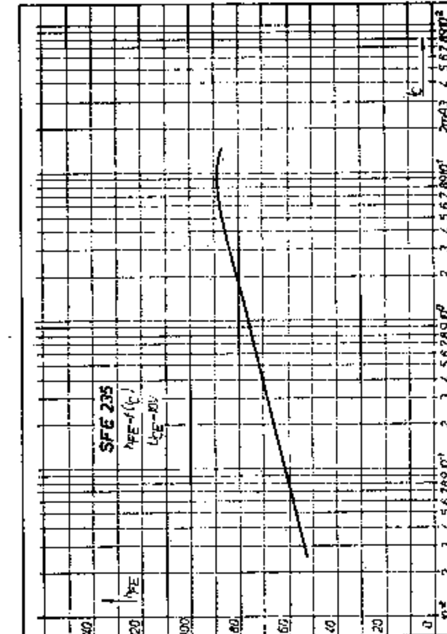


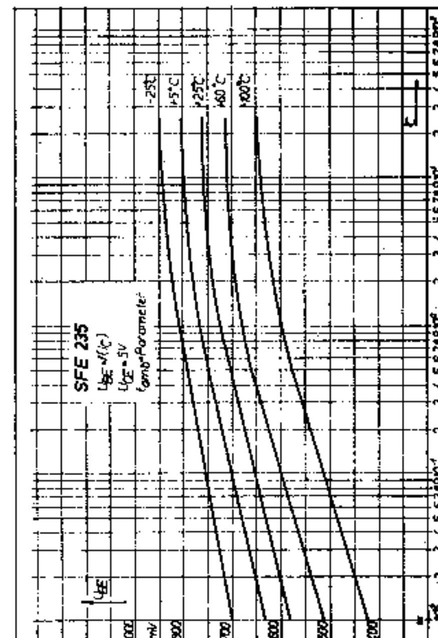


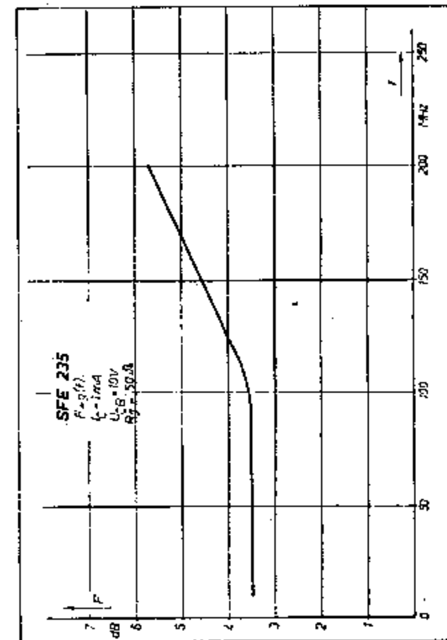
1 $R_{thJA} = 0{,}45$ K/mW
auf Keramik/on ceramic 30×12×1 mm

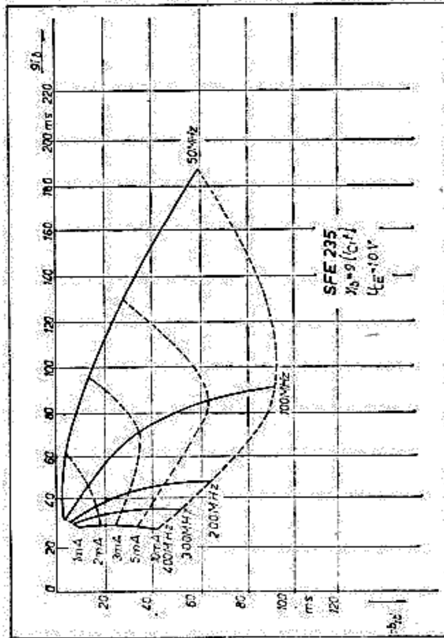
2 $R_{thJA} = 0{,}7$ K/mW
auf Glassubstrat/on class substrat 7×7×1 mm

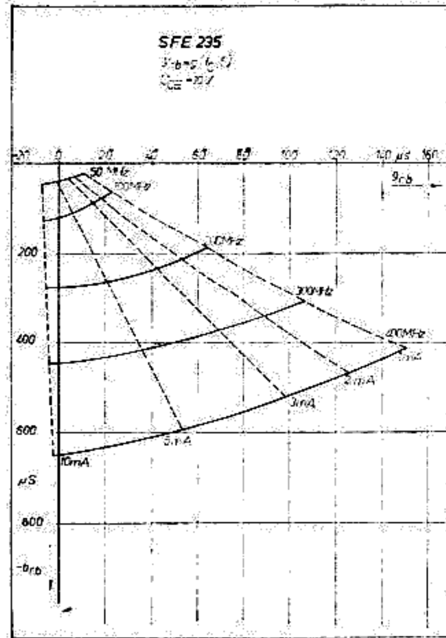


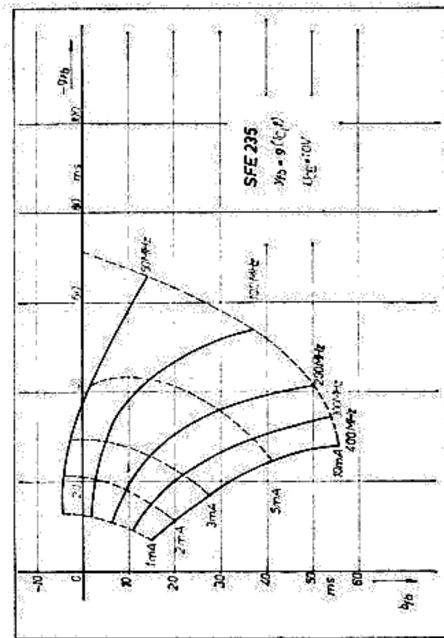


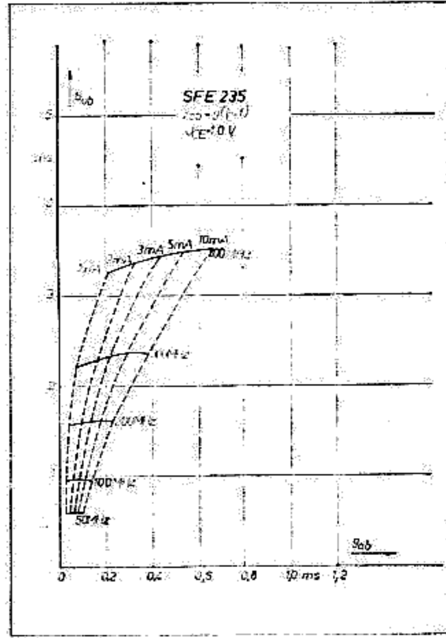


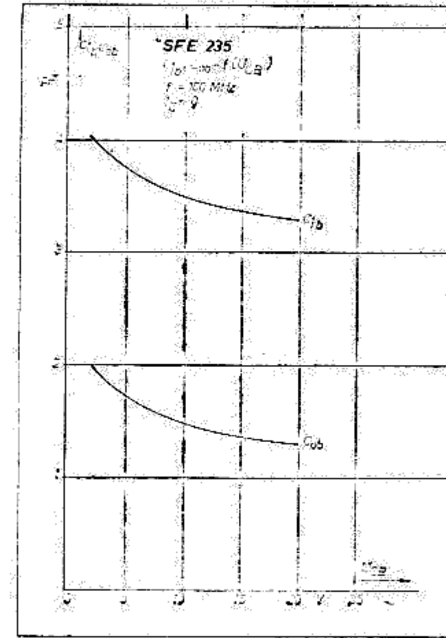


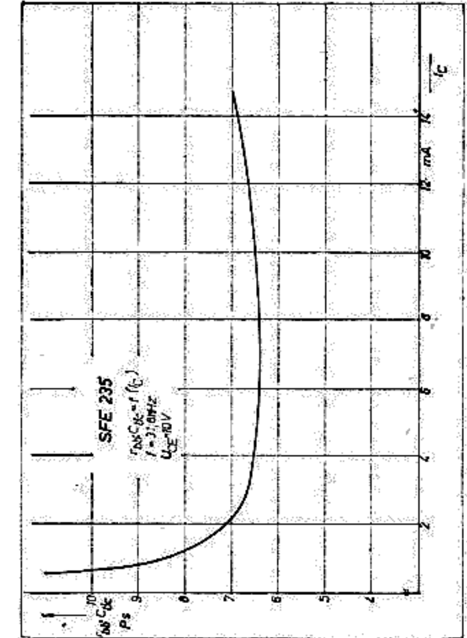












Stempelcode: / Code on case:

SFE 235 IO