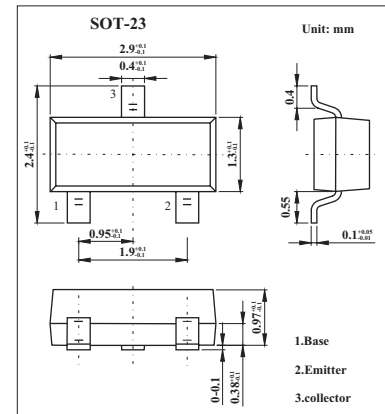


## NPN Silicon Epitaxial Transistor

## 2SC2223

## ■ Features

- Micro package.
- High gain bandwidth product  $f_T=600\text{MHz}$  TYP
- Low output capacitance.  $C_{ob}=1.0\text{PF}$  TYP

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	30	V
Collector to emitter voltage	$V_{CEO}$	20	V
Emitter to base voltage	$V_{EBO}$	4	V
Collector current (DC)	$I_C$	20	mA
Total power dissipation	$P_T$	150	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to +125	$^\circ\text{C}$

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 25\text{V}$ , $I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 3.0\text{V}$ , $I_C = 0$			100	nA
DC current gain	$h_{FE}$	$V_{CE} = 6.0\text{V}$ , $I_C = 1\text{mA}$	40	90	180	
Base-emitter voltage	$V_{BE}$	$I_C = 10\text{mA}$ , $I_B = 1.0\text{mA}$		0.72		V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$ , $I_B = 1.0\text{mA}$		0.1	0.3	V
Gain bandwidth product	$f_T$	$V_{CE} = 6.0\text{V}$ , $I_E = -1.0\text{mA}$	400	600		MHz
Output capacitance	$C_{ob}$	$V_{CB} = 6.0\text{V}$ , $I_E = 0$ , $f = 1.0\text{MHz}$		1.0		pF
Collector to base time constant	$C_{c-rb'b}$	$V_{CE} = 6.0\text{V}$ , $I_E = -1.0\text{mA}$ , $f = 31.9\text{MHz}$		12		ps
Noise figure	NF	$V_{CE} = 6.0\text{V}$ , $I_E = -1.0\text{mA}$ , $R_G = 50\Omega$ , $f = 100\text{MHz}$		3		dB

## ■ hFE Classification

Marking	F12	F13	F14
hFE	40~80	60~120	90~180