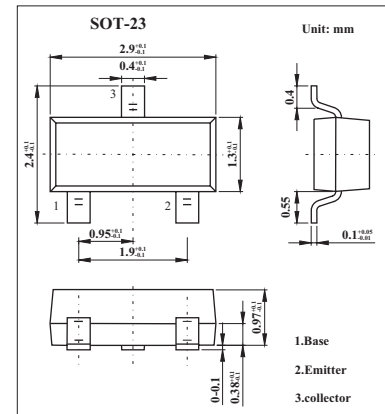


NPN Silicon Epitaxial Transistor

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