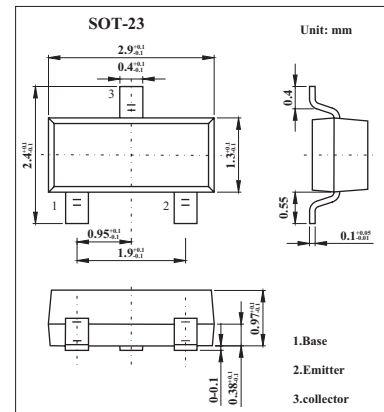


NPN Epitaxial Planar Silicon Transistor

2SC4104

■ Features

- High fr.
- Small reverse transfer capacitance.
- Adoption of FBET process.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	70	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	4	V
Collector current	I_C	50	mA
Collector current (pulse)	I_{cp}	100	mA
Collector dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$			0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 3\text{V}, I_C = 0$			1.0	μA
DC current gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	60		270	
Gain bandwidth product	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	350	700		MHz
Base-collector time constant	$\tau_{bb,Cc}$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$		8		ps
Output capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$		1.3		pF
Reverse transfer capacitance	C_{re}	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$		1.0		pF
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$			1.0	V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	70			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	4			V

■ h_{FE} Classification

Marking	YY		
Rank	3	4	5
h_{FE}	60~120	90~180	135~270