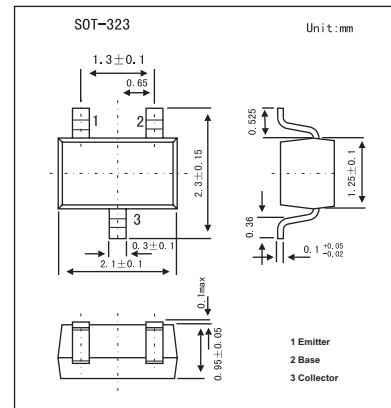


## Silicon NPN Epitaxial Planar Type

## 2SD1823

## ■ Features

- High forward current transfer ratio  $h_{FE}$ .
- Low collector-emitter saturation voltage  $V_{CE(sat)}$ .
- High emitter-base voltage  $V_{EBO}$ .
- Low noise voltage  $NV$ .

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	50	V
Collector-emitter voltage	$V_{CEO}$	40	V
Emitter-base voltage	$V_{EBO}$	15	V
Collector current	$I_C$	50	mA
Peak collector current	$I_{CP}$	100	mA
Collector power dissipation	$P_C$	150	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-base voltage	$V_{CBO}$	$I_C = 10 \mu\text{A}$ , $I_E = 0$	50			V
Collector-emitter voltage	$V_{CEO}$	$I_C = 1 \text{ mA}$ , $I_B = 0$	40			V
Emitter-base voltage	$V_{EBO}$	$I_E = 10 \mu\text{A}$ , $I_C = 0$	15			V
Collector-base cutoff current	$I_{CBO}$	$V_{CB} = 20 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Collector-emitter cutoff current	$I_{CEO}$	$V_{CE} = 20 \text{ V}$ , $I_B = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10 \text{ V}$ , $I_C = 2 \text{ mA}$	400		2000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}$ , $I_B = 1 \text{ mA}$		0.05	0.20	V
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}$ , $I_E = 2 \text{ mA}$ , $f = 200 \text{ MHz}$		120		MHz

■  $h_{FE}$  Classification

Marking	1Z		
Rank	R	S	T
$h_{FE}$	400~800	600~1200	1000~2000