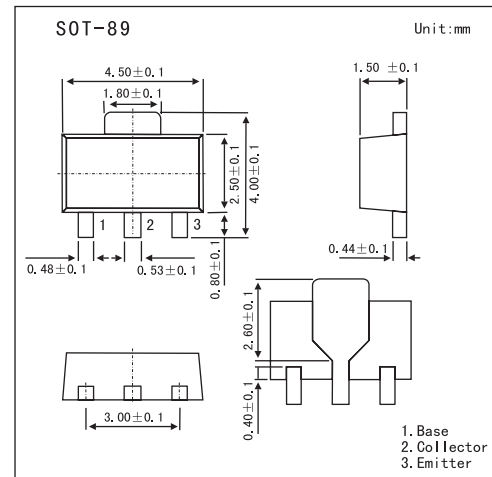


## High-Current Switching Applications

## 2SB1123

## ■ Features

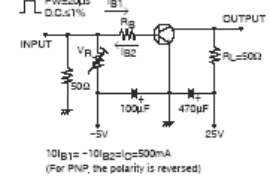
- Adoption of FBET, MBIT processes.
- Low collector-to-emitter saturation voltage.
- Large current capacity and wide ASO.
- Fast switching speed.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-60	V
Collector-emitter voltage	$V_{CE0}$	-50	V
Emitter-base voltage	$V_{EB0}$	-6	V
Collector current	$I_C$	-2	A
Collector current (pulse)	$I_{CP}$	-4	A
Collector dissipation	$P_C$	0.5	W
Mounted on a ceramic board (250mm250.8mm)		1.3	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

## 2SB1123

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	V <sub>CB</sub> = -50V , I <sub>E</sub> = 0			-100	nA	
Emitter-base cutoff current	IEBO	V <sub>EB</sub> = -4 V , I <sub>C</sub> = 0			-100	nA	
DC current Gain	hFE	V <sub>CE</sub> = -2V , I <sub>C</sub> = -100mA	100		560		
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -10V , I <sub>C</sub> = -50mA		150		MHz	
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V , f = 1MHz		22		pF	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -1A , I <sub>B</sub> = -50mA		-0.3	-0.7	V	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -1A , I <sub>B</sub> = -50mA		-0.9	-1.2	V	
Collector-to-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA , I <sub>E</sub> = 0	-60			V	
Collector-to-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA , R <sub>BE</sub> = ∞	-50			V	
Emitter-to-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA , I <sub>C</sub> = 0	-6			V	
Turn-ON Time	ton			60		ns	
Storage Time	tstg				450		ns
Fall Time	tf				30		ns

## ■ hFE Classification

Marking	BF			
Rank	R	S	T	U
hFE	100~200	140~280	200~400	280~560