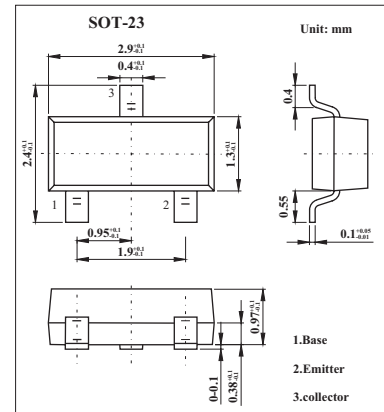


## NPN Silicon Switching Transistors

## BSS79,BSS81

## ■ Features

- High DC current gain: 0.1mA to 500 mA.
- Low collector-emitter saturation voltage.

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

Parameter	Symbol	BSS79	BSS81	Unit
Collector-emitter voltage	$V_{CE0}$	40	35	V
Collector-base voltage	$V_{CB0}$	75		V
Emitter-base voltage	$V_{EB0}$	6		V
Collector current	$I_C$	800		mA
Peak collector current	$I_{CM}$	1		A
Base current	$I_B$	100		mA
Peak base current	$I_{BM}$	200		mA
Total power dissipation, $T_s = 77^\circ\text{C}$	$P_{tot}$	330		mW
Junction temperature	$T_j$	150		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 to +150		$^\circ\text{C}$
Junction - soldering point	$R_{thJS}$	$\leq 220$		K/W

**BSS79,BSS81**

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	BSS79	Ic = 10 mA, I <sub>B</sub> = 0	40			V
	BSS81		35			
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	Ic = 10 μA, I <sub>E</sub> = 0	75			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10 μA, Ic = 0	6			V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0			10	nA
		V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0, T <sub>A</sub> = 150°C			10	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 3 V, Ic = 0			10	nA
DC current gain *	BSS79/81B	Ic = 100μA, V <sub>CE</sub> = 10 V	20			
	BSS79/81C		35			
	BSS79/81B	Ic = 1 mA, V <sub>CE</sub> = 10 V	25			
	BSS79/81C		50			
	BSS79/81B	Ic = 10 mA, V <sub>CE</sub> = 10 V	35			
	BSS79/81C		75			
	BSS79/81B	Ic = 150 mA, V <sub>CE</sub> = 10 V	40		120	
	BSS79/81C		100		300	
	BSS79/81B	Ic = 500 mA, V <sub>CE</sub> = 10 V	25			
	BSS79/82C		40			
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	Ic = 150 mA, I <sub>B</sub> = 15 mA			0.3	V
		Ic = 500 mA, I <sub>B</sub> = 50 mA			1.3	
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	Ic = 150 mA, I <sub>B</sub> = 15 mA			1.2	
		Ic = 500 mA, I <sub>B</sub> = 50 mA			2.0	
Transition frequency	f <sub>T</sub>	Ic = 20 mA, V <sub>CE</sub> = 20 V, f = 100 MHz		250		MHz
Collector-base capacitance	C <sub>cb</sub>	V <sub>CB</sub> = 10 V, f = 1 MHz		6		pF
Delay time	t <sub>d</sub>	V <sub>CC</sub> = 30 V, Ic = 150 mA, I <sub>B1</sub> = 15 mA, V <sub>BE(off)</sub> = 0.5 V			10	ns
Rise time	t <sub>r</sub>	V <sub>CC</sub> = 30 V, Ic = 150 mA, I <sub>B1</sub> = 15 mA, V <sub>BE(off)</sub> = 0.5 V			25	ns
Storage time	t <sub>stg</sub>	V <sub>CC</sub> = 30 V, Ic = 150 mA, I <sub>B1</sub> =I <sub>B2</sub> = 15mA			250	ns
Fall time	t <sub>f</sub>	V <sub>CC</sub> = 30 V, Ic = 150 mA, I <sub>B1</sub> =I <sub>B2</sub> = 15mA			60	ns

\* Pulse test: t ≤ 300μs, D = 2%.

## ■ hFE Classification

TYPE	BSS79	
Rank	B	C
Marking	CEs	CFs

TYPE	BSS81	
Rank	B	C
Marking	CDs	CGs