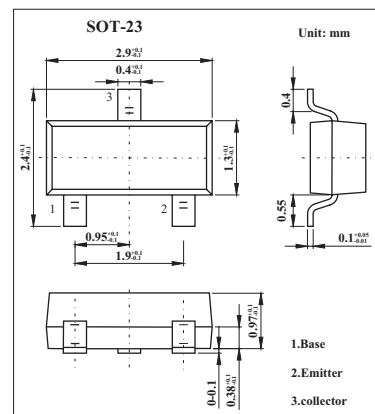


NPN Silicon Switching Transistors

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_{CEO}	40	35	V
Collector-base voltage	V_{CBO}	75		V
Emitter-base voltage	V_{EBO}	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}	≤ 220		K/W

BSS79,BSS81

■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	BSS79	$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	40			V
	BSS81			35			
Collector-base breakdown voltage		$V_{(BR)CBO}$	$I_C = 10\text{ }\mu\text{A}, I_E = 0$	75			V
Emitter-base breakdown voltage		$V_{(BR)EBO}$	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	6			V
Collector cutoff current		I_{CBO}	$V_{CB} = 60\text{ V}, I_E = 0$			10	nA
			$V_{CB} = 60\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$			10	μA
Emitter cutoff current		I_{EBO}	$V_{EB} = 3\text{ V}, I_C = 0$			10	nA
DC current gain *	BSS79/81B	h_{FE}	$I_C = 100\text{ }\mu\text{A}, V_{CE} = 10\text{ V}$	20			
	BSS79/81C			35			
	BSS79/81B		$I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	25			
	BSS79/81C			50			
	BSS79/81B		$I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$	35			
	BSS79/81C			75			
	BSS79/81B		$I_C = 150\text{ mA}, V_{CE} = 10\text{ V}$	40		120	
	BSS79/81C			100		300	
	BSS79/81B		$I_C = 500\text{ mA}, V_{CE} = 10\text{ V}$	25			
	BSS79/82C			40			
Collector-emitter saturation voltage *		$V_{CE(sat)}$	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			0.3	V
			$I_C = 500\text{ mA}, I_B = 50\text{ mA}$			1.3	
Base-emitter saturation voltage *		$V_{BE(sat)}$	$I_C = 150\text{ mA}, I_B = 15\text{ mA}$			1.2	
			$I_C = 500\text{ mA}, I_B = 50\text{ mA}$			2.0	
Transition frequency		f_T	$I_C = 20\text{ mA}, V_{CE} = 20\text{ V}, f = 100\text{ MHz}$		250		MHz
Collector-base capacitance		C_{cb}	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$		6		pF
Delay time		t_d	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = 15\text{ mA}, V_{BE(off)} = 0.5\text{ V}$			10	ns
Rise time		t_r	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = 15\text{ mA}, V_{BE(off)} = 0.5\text{ V}$			25	ns
Storage time		t_{stg}	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1}=I_{B2} = 15\text{ mA}$			250	ns
Fall time		t_f	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1}=I_{B2} = 15\text{ mA}$			60	ns

* Pulse test: $t \leq 300\text{ }\mu\text{s}$, $D = 2\%$.

■ hFE Classification

TYPE	BSS79	
Rank	B	C
Marking	CEs	CFs

TYPE	BSS81	
Rank	B	C
Marking	CDs	CGs