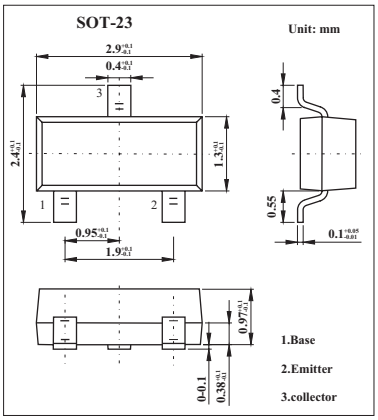
NPN Silicon Switching Transistors

BSS79,BSS81



■ Features

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

■ Absolute Maximum Ratings Ta = 25℃

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℃	P_{tot}	330		mW
Junction temperature	T_j	150		℃
Storage temperature	T_{stg}	-65 to +150		℃
Junction - soldering point	R_{thJS}	≤220		K/W

BSS79,BSS81

■ Electrical Characteristics Ta = 25℃

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

* Pulse test: t ⩽ 300μs, D = 2%.

■ h_{FE} Classification

TYPE	BSS79	
Rank	B	C
Marking	CEs	CFs

TYPE	BSS81	
Rank	B	C
Marking	CDs	CGs