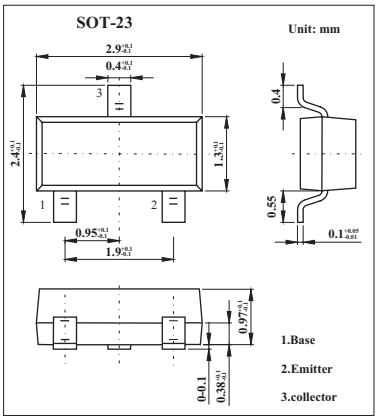
NPN Switching Transistor

BSV52



Features

- High current (max. 100 mA).
- Low voltage (max. 12 V).

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	20	V
Collector-emitter voltage	V_{CEO}	12	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Peak collector current	I_{CM}	200	mA
Peak base current	I_{BM}	100	mA
Total power dissipation	P_{tot}	250	mW
Storage temperature	T_{stg}	-65 to +150	℃
Junction temperature	T_j	150	℃
Operating ambient temperature	R_{amb}	-65 to +150	℃
Thermal resistance from junction to ambient *	$R_{th\ j\text{-}a}$	500	K/W

* Transistor mounted on an FR4 printed-circuit board.

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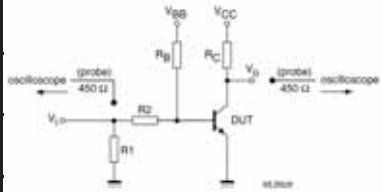
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	I_E = 0; V_{CB} = 20 V			400	nA
		I_E = 0; V_{CB} = 20 V; T_j = 125 ℃			30	μA
Emitter cutoff current	I_{EBO}	I_C = 0; V_{EB} = 4 V			100	nA
DC current gain	h_{FE}	V_{CE} = 1 V, I_C = 10 mA	40		120	
collector-emitter saturation voltage	V_{CEsat}	I_C = 10 mA; I_B = 300 μA			300	mV
		I_C = 10 mA; I_B = 1 mA			250	mV
		I_C = 50 mA; I_B = 5 mA			400	mV
base-emitter saturation voltage	V_{BEsat}	I_C = 10 mA; I_B = 1 mA	700		850	mV
		I_C = 50 mA; I_B = 5 mA			1.4	V
Collector capacitance	C_c	I_E = i_E = 0; V_{CB} = 5 V; f = 1 MHz			4	pF
Emitter capacitance	C_e	I_C = i_C = 0; V_{EB} = 1 V; f = 1 MHz			4.5	pF
Transition frequency	f_T	I_C = 10 mA; V_{CE} = 10 V; f = 100 MHz	400	500		MHz
Turn-on time	t_{on}	I_{Con} = 10 mA; I_{Bon} = 3 mA; I_{Boff} = -1.5 mA			10	ns
Delay time	t_d				4	ns
Rise time	t_r				6	ns
Turn-off time	t_{off}				20	ns
Storage time	t_s	V_i = 0.5 V to 4.2 V; T = 500 μs; t_p = 10 μs; t_r = t_p ≤ 3 ns. R1 = 56 Ω; R2 = 1 kΩ; R_B = 1 kΩ; R_C = 270 Ω. V_{BB} = 0.2 V; V_{CC} = 2.7 V. Oscilloscope: input impedance Z_i = 50 Ω.			10	ns
Fall time	t_f				10	ns

■ Marking

Marking	B2