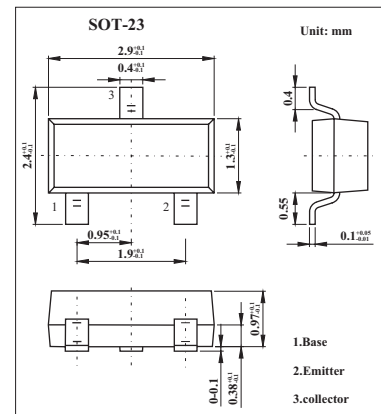


NPN Switching Transistor

BSV52

■ Features

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

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	20	V
Collector-emitter voltage	V_{CE0}	12	V
Emitter-base voltage	V_{EB0}	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	$^\circ\text{C}$
Junction temperature	T_j	150	$^\circ\text{C}$
Operating ambient temperature	R_{amb}	-65 to +150	$^\circ\text{C}$
Thermal resistance from junction to ambient *	$R_{th\ j-a}$	500	K/W

* Transistor mounted on an FR4 printed-circuit board.

BSV52

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	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 °C			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 _C = 0; V _{CB} = 5 V; f = 1 MHz			4	pF	
Emitter capacitance	C _e	I _C = I _E = 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 ₁ = 0.5 V to 4.2 V; T = 500 μs; t _p = 10 μs; t _r = t _f ≤ 3 ns. R ₁ = 56 Ω; R ₂ = 1 kΩ; R _B = 1 kΩ; R _C = 270 Ω.			10	ns
Fall time	t _f		V _{BE} = 0.2 V; V _{CC} = 2.7 V. Oscilloscope: input impedance Z _i = 50 Ω.			10	ns

■ Marking

Marking	B2
---------	----