

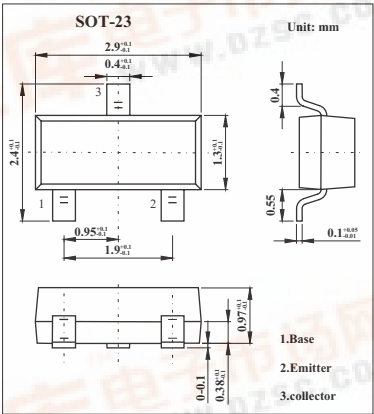
SMD Type

Transistors

NPN Switching Transistor
BSV52

■ Features

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



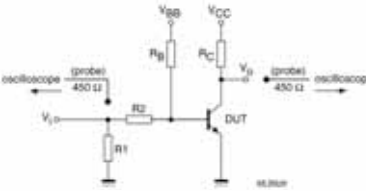
■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	VCBO	20	V
Collector-emitter voltage	VCEO	12	V
Emitter-base voltage	VEBO	5	V
Collector current	IC	100	mA
Peak collector current	ICM	200	mA
Peak base current	IBM	100	mA
Total power dissipation	Ptot	250	mW
Storage temperature	Tstg	-65 to +150	°C
Junction temperature	Tj	150	°C
Operating ambient temperature	Ramb	-65 to +150	°C
Thermal resistance from junction to ambient *	Rth j-a	500	K/W

* Transistor mounted on an FR4 printed-circuit board.

BSV52

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$I_E = 0; V_{CB} = 20\text{ V}$			400	nA
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 125^\circ\text{C}$			30	μA
Emitter cutoff current	I_{EBO}	$I_C = 0; V_{EB} = 4\text{ V}$			100	nA
DC current gain	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$	40		120	
collector-emitter saturation voltage	V_{CEsat}	$I_C = 10\text{ mA}; I_B = 300\text{ }\mu\text{A}$			300	mV
		$I_C = 10\text{ mA}; I_B = 1\text{ mA}$			250	mV
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}$			400	mV
base-emitter saturation voltage	V_{BEsat}	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	700		850	mV
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}$			1.4	V
Collector capacitance	C_c	$I_E = i_E = 0; V_{CB} = 5\text{ V}; f = 1\text{ MHz}$			4	pF
Emitter capacitance	C_e	$I_C = i_C = 0; V_{EB} = 1\text{ V}; f = 1\text{ MHz}$			4.5	pF
Transition frequency	f_T	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	400	500		MHz
Turn-on time	t_{on}	$I_{Con} = 10\text{ mA}; I_{Bon} = 3\text{ mA}; I_{Boff} = -1.5\text{ mA}$			10	ns
Delay time	t_d	 $V_1 = 0.5\text{ V to } 4.2\text{ V}; T = 500\text{ }\mu\text{s}; t_p = 10\text{ }\mu\text{s}; t_r = t_f \leq 3\text{ ns};$ $R_1 = 56\text{ }\Omega; R_2 = 1\text{ k}\Omega; R_B = 1\text{ k}\Omega; R_C = 270\text{ }\Omega;$ $V_{BB} = 0.2\text{ V}; V_{CC} = 2.7\text{ V}.$ Oscilloscope: input impedance $Z_i = 50\text{ }\Omega$.			4	ns
Rise time	t_r				6	ns
Turn-off time	t_{off}				20	ns
Storage time	t_s				10	ns
Fall time	t_f				10	ns

■ Marking

Marking	B2
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