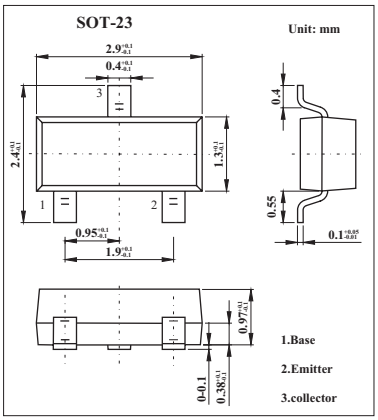
NPN Switching Transistors

BSR17A



■ Features

- High current (max. 100 mA).
- Low voltage (max. 40 V).

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	6	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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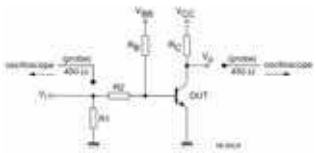
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	I_E = 0 A; V_{CB} = 30 V			50	nA
		I_E = 0 A; V_{CB} = 30 V; T_j = 150 ℃			5	μA
Emitter cutoff current	I_{EBO}	I_C = 0 A; V_{EB} = 6 V			50	nA
DC current gain *	h_{FE}	I_C = 10 mA V_{CE} = 1 V;	100		300	
collector-emitter saturation voltage *	V_{CEsat}	I_C = 10 mA; I_B = 1 mA;			200	mV
		I_C = 50 mA; I_B = 5 mA;			200	mV
base-emitter saturation voltage *	V_{BEsat}	I_C = 10 mA; I_B = 1 mA;	650		850	mV
		I_C = 50 mA; I_B = 5 mA;			950	mV
Collector capacitance	C_c	I_E = ie = 0 A; V_{CB} = 5 V; f = 1 MHz			4	pF
Emitter capacitance	C_e	I_C = ic = 0 A; V_{EB} = 500 mV; f = 1 MHz			8	pF
Transition frequency	f_T	I_C = 10 mA; V_{CE} = 20 V; f = 100 MHz	300			MHz
Noise figure	NF	I_C = 100 μA; V_{CE} = 5 V; R_S = 1 kΩ;f = 10 Hz to 15.7 kHz			5	dB
Turn-on time	t_{on}	I_{Con} = 10 mA; I_{Bon} = 1 mA; I_{Boff} = -1 mA			65	ns
Delay time	t_d				35	ns
Rise time	t_r				35	ns
Turn-off time	t_{off}				240	ns
Storage time	t_s	V_i = 5 V; T = 500 μs; t_p = 10 μs; t_r = t_f ≤ 3 ns; R1 = 56 Ω; R2 = 2.5 kΩ; R_B = 3.9 kΩ; R_C = 270 Ω; V_{BB} = −1.9 V; V_{CC} = 3 V; Oscilloscope input impedance Z_i = 50 Ω.			200	ns
Fall time	t_f				50	ns

* Pulse test: tp ⩽ 300 μs; d ⩽ 0.02.

■ Marking

Marking	U92 OR 54