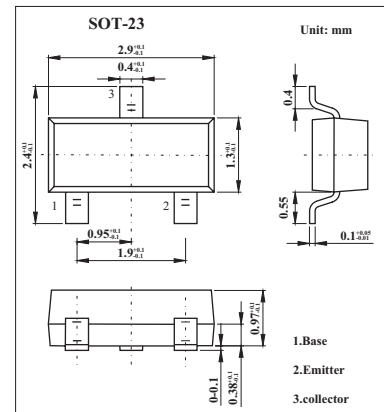


NPN Switching Transistors

BSR17A

■ Features

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

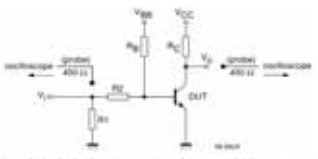
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CE0}	40	V
Emitter-base voltage	V_{EB0}	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	$^\circ\text{C}$
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.

BSR17A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	ICBO	IE = 0 A; VCB = 30 V			50	nA
		IE = 0 A; VCB = 30 V; Tj = 150 °C			5	μA
Emitter cutoff current	IEBO	IC = 0 A; VEB = 6 V			50	nA
DC current gain *	hFE	IC = 10 mA VCE = 1 V;	100		300	
collector-emitter saturation voltage *	VCEsat	IC = 10 mA; IB = 1 mA;			200	mV
		IC = 50 mA; IB = 5 mA;			200	mV
base-emitter saturation voltage *	VBEsat	IC = 10 mA; IB = 1 mA;	650		850	mV
		IC = 50 mA; IB = 5 mA;			950	mV
Collector capacitance	Cc	IE = ie = 0 A; VCB = 5 V; f = 1 MHz			4	pF
Emitter capacitance	Ce	IC = ic = 0 A; VEB = 500 mV; f = 1 MHz			8	pF
Transition frequency	fT	IC = 10 mA; VCE = 20 V; f = 100 MHz	300			MHz
Noise figure	NF	IC = 100 μA; VCE = 5 V; RS = 1 kΩ; f = 10 Hz to 15.7 kHz			5	dB
Turn-on time	ton	 $V_1 = 5\text{ V}$; $T = 500\text{ }\mu\text{s}$; $t_p = 10\text{ }\mu\text{s}$; $t_r = t_f \leq 3\text{ ns}$; $R_1 = 56\text{ }\Omega$; $R_2 = 2.5\text{ k}\Omega$; $R_E = 3.9\text{ k}\Omega$; $R_C = 270\text{ }\Omega$; $V_{BE} = -1.9\text{ V}$; $V_{CE} = 3\text{ V}$; Oscilloscope input impedance $Z_i = 50\text{ }\Omega$.			65	ns
Delay time	td				35	ns
Rise time	tr				35	ns
Turn-off time	toff				240	ns
Storage time	ts				200	ns
Fall time	tf				50	ns

* Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $d \leq 0.02$.

■ Marking

Marking	U92 OR 54
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