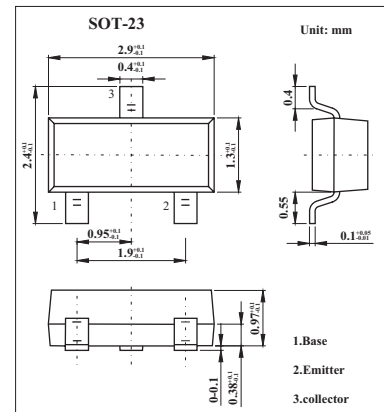


PNP Switching Transistors

BSR15

■ Features

- High current (max. 600 mA).
- Low voltage (max. 60 V).

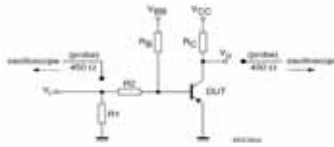
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	-60	V
Collector-emitter voltage	V_{CE0}	-40	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current	I_C	-600	mA
Peak collector current	I_{CM}	-800	mA
Peak base current	I_{BM}	-200	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.

BSR15

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$I_E = 0; V_{CB} = -50\text{ V}$			-20	nA
		$I_E = 0; V_{CB} = -50\text{ V}; T_j = 150^\circ\text{C}$			-20	μA
Emitter cutoff current	I_{EBO}	$I_C = 0; V_{EB} = -5\text{ V}$			-50	nA
DC current gain	h_{FE}	$I_C = -0.1\text{ mA}; V_{CE} = -10\text{ V}$	35			
		$I_C = -1\text{ mA}; V_{CE} = -10\text{ V}$	50			
		$I_C = -10\text{ mA}; V_{CE} = -10\text{ V}$	75			
		$I_C = -150\text{ mA}; V_{CE} = -10\text{ V}^*$	100		300	
		$I_C = -500\text{ mA}; V_{CE} = -10\text{ V}; ^*$	30			
collector-emitter saturation voltage	V_{CEsat}	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$			-400	mV
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$			-1.6	V
base-emitter saturation voltage	V_{BEsat}	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$			-1.3	V
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$			-2.6	V
Collector capacitance	C_c	$I_E = I_C = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$			8	pF
Emitter capacitance	C_e	$I_C = I_E = 0; V_{EB} = -2\text{ V}; f = 1\text{ MHz}$			30	
Transition frequency	f_T	$I_C = -50\text{ mA}; V_{CE} = -20\text{ V}; f = 100\text{ MHz}$	200			MHz
Turn-on time	t_{on}	 $I_{Con} = -150\text{ mA}; I_{Bon} = -15\text{ mA};$ $I_{Boff} = 15\text{ mA}$ (see Fig)			40	ns
Delay time	t_d				12	ns
Rise time	t_r				30	ns
Turn-off time	t_{off}				365	ns
Storage time	t_s				300	ns
Fall time	t_f				65	ns

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

■ Marking

Marking	T7
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