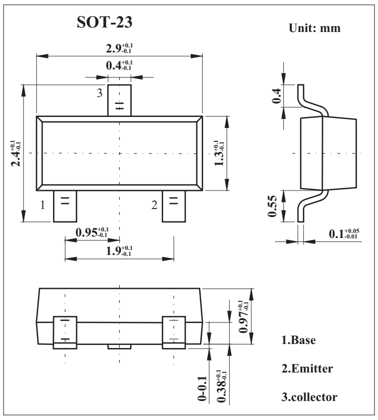
PNP Switching Transistors

BSR15



■ Features

- High current (max. 600 mA).
- Low voltage (max. 60 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}	-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	℃
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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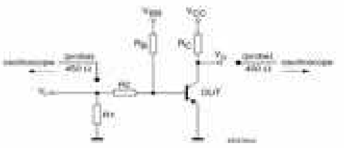
Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$I_E = 0$; $V_{CB} = -50$ V			-20	nA
		$I_E = 0$; $V_{CB} = -50$ V; $T_j = 150$ ℃			-20	µA
Emitter cutoff current	I_{EBO}	$I_C = 0$; $V_{EB} = -5$ V			-50	nA
DC current gain	h_{FE}	$I_C = -0.1$ mA; $V_{CE} = -10$ V	35			
		$I_C = -1$ mA; $V_{CE} = -10$ V	50			
		$I_C = -10$ mA; $V_{CE} = -10$ V	75			
		$I_C = -150$ mA; $V_{CE} = -10$ V*	100		300	
		$I_C = -500$ mA; $V_{CE} = -10$ V; *	30			
collector-emitter saturation voltage	V_{CEsat}	$I_C = -150$ mA; $I_B = -15$ mA			-400	mV
		$I_C = -500$ mA; $I_B = -50$ mA			-1.6	V
base-emitter saturation voltage	V_{BEsat}	$I_C = -150$ mA; $I_B = -15$ mA			-1.3	V
		$I_C = -500$ mA; $I_B = -50$ mA			-2.6	V
Collector capacitance	C_c	$I_E = i_e = 0$; $V_{CB} = -10$ V; f = 1 MHz			8	pF
Emitter capacitance	C_e	$I_C = i_c = 0$; $V_{EB} = -2$ V; f = 1 MHz			30	
Transition frequency	f_T	$I_C = -50$ mA; $V_{CE} = -20$ V; f = 100 MHz	200			MHz
Turn-on time	t_{on}	$I_{Con} = -150$ mA; $I_{Bon} = -15$ mA; $I_{Boff} = 15$ mA (see Fig)			40	ns
Delay time	t_d	 $V_i = -9.5$ V; T = 500 µs; $t_p = 10$ µs; $t_r = t_f \leq 3$ ns. R1 = 68 Ω; R2 = 325 Ω; $R_B = 325$ Ω; $R_C = 160$ Ω. $V_{BB} = 3.5$ V; $V_{CC} = -29.5$ V. Oscilloscope: input impedance $Z_i = 50$ Ω.			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: tp ≤ 300 µs; d ≤ 0.02.

Marking

Marking	T7