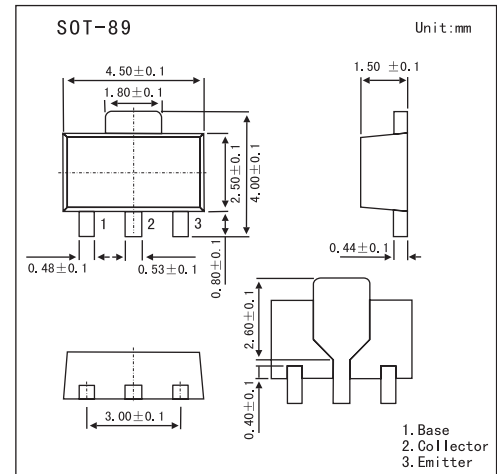


NPN Switching Transistor

PXT3904

■ 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_{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}		
	* 1	0.45	W
	* 2	0.65	
	* 3	0.8	
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	$R_{th(j-a)}$		
	* 1	278	K/W
	* 2	192	
	* 3	156	
Thermal resistance from junction to soldering point	$R_{th(j-s)}$	80	K/W

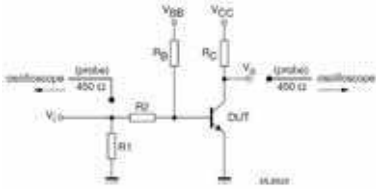
*1 Device mounted on a printed-circuit board, single-sided copper, tin-plated and standard - footprint.

*2 Device mounted on a printed-circuit board, single-sided copper, tin-plated and mounting pad for collector 1 cm^2 .

*3 Device mounted on a printed-circuit board, single-sided copper, tin-plated and mounting - pad for collector 6 cm^2 .

PXT3904

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	IE = 0; VCB = 30 V			50	nA	
Emitter cutoff current	IEBO	IC = 0; VEB = 6 V			50	nA	
DC current gain	hFE	VCE = 1 V; IC = 0.1 mA	60				
		VCE = 1 V; IC = 1 mA	80				
		VCE = 1 V; IC = 10 mA	100		300		
		VCE = 1 V; IC = 50 mA	60				
		VCE = 1 V; IC = 100 mA	30				
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; VCB = 5 V; f = 1 MHz			4	pF	
Emitter capacitance	Ce	IC = ic = 0; VEB = 500 mV; f = 1 MHz			8	pF	
Transition frequency	fT	IC = 10 mA; VCE = 20 V; f = 100 MHz	300			MHz	
Noise figure	F	IC = 100 μA; VCE = 5 V; Rs = 1 kΩ; f = 10 Hz to 15.7 kHz			5	dB	
Turn-on time	ton	ICon = 10 mA; IBon = 1 mA; IBoff = -1 mA			65	ns	
Delay time	td				35	ns	
Rise time	tr					35	ns
Turn-off time	toff					240	ns
Storage time	ts		VI = 5 V; T = 500 μs; tp = 10 μs; tr = tr ≤ 3 ns. R1 = 56 Ω; R2 = 2.5 kΩ; RB = 3.9 kΩ; RC = 270 Ω.			200	ns
Fall time	tf		VBB = 1.9 V; VCC = -3 V. Oscilloscope: input impedance Zi = 50 Ω.			50	ns

■ Marking

Marking	1A
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