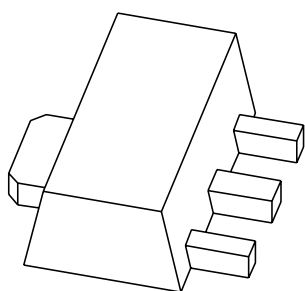


DATA SHEET



PXT2907A PNP switching transistor

Product specification
Supersedes data of 1999 Apr 14

2002 Mar 20

PNP switching transistor

PXT2907A

FEATURES

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

APPLICATIONS

- Switching and linear amplification.

DESCRIPTION

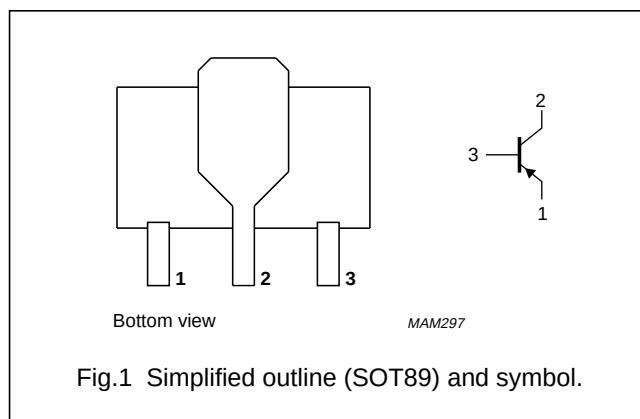
PNP switching transistor in a SOT89 plastic package.
NPN complement: PXT2222A.

MARKING

TYPE NUMBER	MARKING CODE
PXT2907A	p2F

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	—	–60	V
V_{CEO}	collector-emitter voltage	open base	—	–60	V
V_{EBO}	emitter-base voltage	open collector	—	–5	V
I_C	collector current (DC)		—	–600	mA
I_{CM}	peak collector current		—	–800	mA
I_{BM}	peak base current		—	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	—	1.3	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see “Thermal considerations for SOT89 in the General Part of associated Handbook”.

PNP switching transistor

PXT2907A

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	97	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		17	K/W

Note

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see "Thermal considerations for SOT89 in the General Part of associated Handbook".

CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

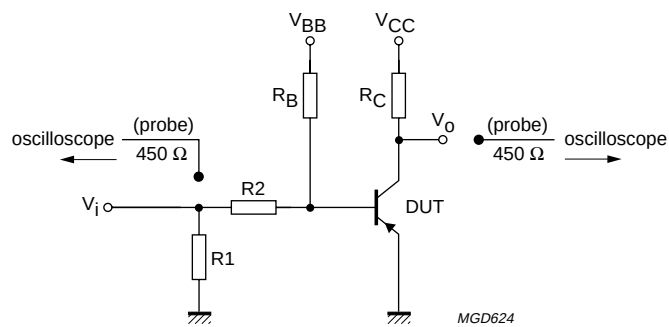
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -50\text{ V}$	—	–10	nA
		$I_E = 0; V_{CB} = -50\text{ V}; T_{amb} = 125\text{ }^{\circ}\text{C}$	—	–10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	—	–50	nA
h_{FE}	DC current gain	$I_C = -0.1\text{ mA}; V_{CE} = -1\text{ V}$	75	—	
		$I_C = -1\text{ mA}; V_{CE} = -1\text{ V}$	100	—	
		$I_C = -10\text{ mA}; V_{CE} = -1\text{ V}$	100	—	
		$I_C = -150\text{ mA}; V_{CE} = -2\text{ V}$	100	300	
		$I_C = -500\text{ mA}; V_{CE} = -10\text{ V}$	50	—	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$	—	–400	mV
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$	—	–1.6	V
V_{BEsat}	base-emitter saturation voltage	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$	—	–1.3	V
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$	—	–2.6	V
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	—	8	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = -500\text{ mV}; f = 1\text{ MHz}$	—	35	pF
f_T	transition frequency	$I_C = -20\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	200	—	MHz

Switching times (between 10% and 90% levels); (see Fig.2)

t_{on}	turn-on time	$I_{Con} = -150\text{ mA}; I_{Bon} = -15\text{ mA};$ $I_{Boff} = 15\text{ mA}$	—	40	ns
t_d	delay time		—	12	ns
t_r	rise time		—	30	ns
t_{off}	turn-off time		—	365	ns
t_s	storage time		—	300	ns
t_f	fall time		—	65	ns

PNP switching transistor

PXT2907A



$V_i = -9.5 \text{ V}$; $T = 500 \text{ } \mu\text{s}$; $t_p = 10 \text{ } \mu\text{s}$; $t_r = t_f \leq 3 \text{ ns}$.
 $R_1 = 68 \text{ } \Omega$; $R_2 = 325 \text{ } \Omega$; $R_B = 325 \text{ } \Omega$; $R_C = 160 \text{ } \Omega$.
 $V_{BB} = 3.5 \text{ V}$; $V_{CC} = -29.5 \text{ V}$.
 Oscilloscope input impedance $Z_i = 50 \text{ } \Omega$.

Fig.2 Test circuit for switching times.

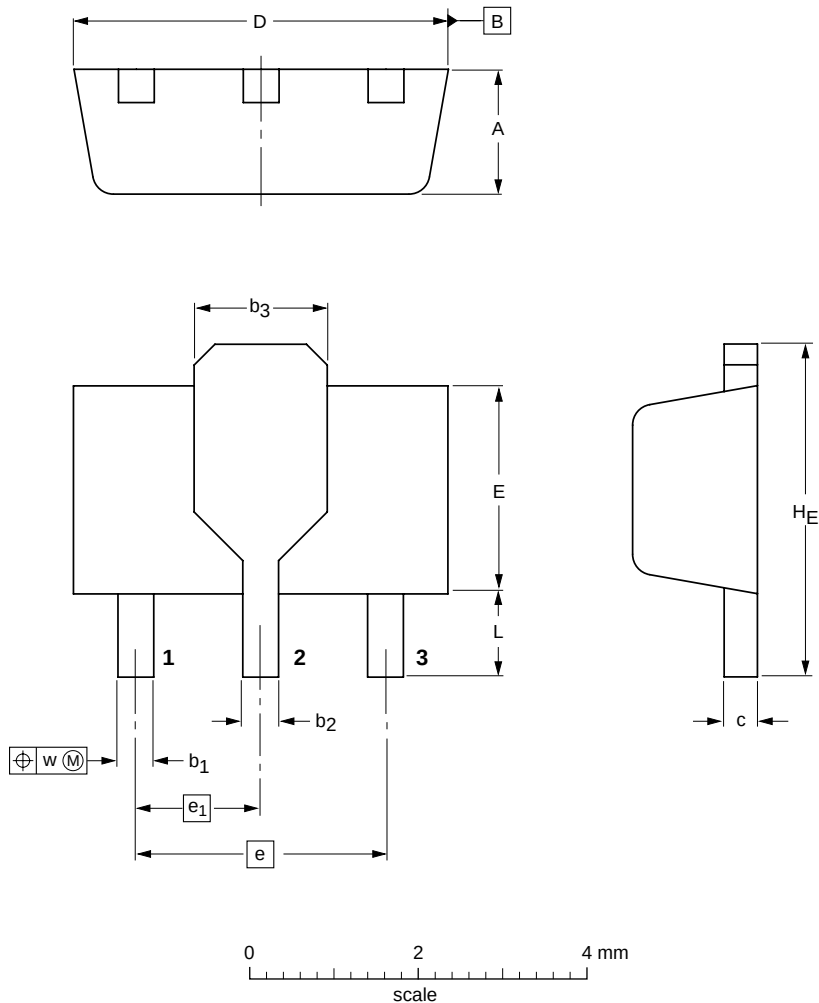
PNP switching transistor

PXT2907A

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b ₁	b ₂	b ₃	c	D	E	e	e ₁	H _E	L min.	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.37	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	0.8	0.13

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT89		TO-243	SC-62			97-02-28 99-09-13

PNP switching transistor

PXT2907A

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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PNP switching transistor

PXT2907A

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