

PXTA92

300 V, 100 mA PNP high-voltage transistor

Rev. 6 — 27 September 2011 Product data sheet

1. Product profile

1.1 General description

PNP high-voltage transistor in a medium power and flat lead SOT89 (SC-62) Surface-Mounted Device (SMD) plastic package.

NPN complement: PXTA42.

1.2 Features and benefits

- High breakdown voltage
- AEC-Q101 qualified
- Medium power and flat lead SMD plastic package

1.3 Applications

- Electronic ballast for fluorescent lighting
- LED driver for LED chain module
- High Intensity Discharge (HID) front lighting
- Automotive motor management
- Hook switch for wired telecom
- Switch Mode Power Supply (SMPS)

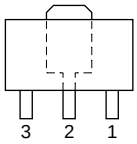
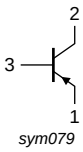
1.4 Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CEO}	collector-emitter voltage	open base	-	-	–300	V
I_C	collector current		-	-	–100	mA
I_{CM}	peak collector current		-	-	–200	mA
h_{FE}	DC current gain	V_{CE} = –10 V; I_C = –10 mA	40	-	-	

2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	emitter		
2	collector		
3	base		

sym079

3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PXTA92	SC-62	plastic surface-mounted package; exposed die pad for good heat transfer; 3 leads	SOT89

4. Marking

Table 4. Marking codes

Type number	Marking code[1]
PXTA92	*2D

[1] * = placeholder for manufacturing site code

5. Limiting values

Table 5. 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		-	–300	V
V_{CEO}	collector-emitter voltage	open base		-	–300	V
V_{EBO}	emitter-base voltage	open collector		-	–5	V
I_C	collector current			-	–100	mA
I_{CM}	peak collector current			-	–200	mA
I_{BM}	peak base current			-	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[1]	-	1300	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			–65	+150	°C
T_{stg}	storage temperature			–65	+150	°C

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for collector 6 cm^2.

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6. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	96	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point			-	-	16	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm^2.

7. Characteristics

Table 7. Characteristics

T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{CBO}	collector-base cut-off current	V_{CB} = –200 V; I_E = 0 A	-	-	–250	nA
I_{EBO}	emitter-base cut-off current	V_{EB} = –3 V; I_C = 0 A	-	-	–100	nA
h_{FE}	DC current gain	V_{CE} = –10 V; I_C = –1 mA	25	-	-	
		V_{CE} = –10 V; I_C = –10 mA	40	-	-	
		V_{CE} = –10 V; I_C = –30 mA	25	-	-	
V_{CEsat}	collector-emitter saturation voltage	I_C = –20 mA; I_B = –2 mA	-	-	–500	mV
V_{BEsat}	base-emitter saturation voltage	I_C = –20 mA; I_B = –2 mA	-	-	–900	mV
f_T	transition frequency	V_{CE} = –20 V; I_C = –10 mA; f = 100 MHz	50	-	-	MHz
C_c	collector capacitance	V_{CB} = –20 V; $I_E = i_e$ = 0 A; f = 1 MHz	-	-	6	pF

8. Test information

8.1 Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard *Q101 - Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

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9. Package outline

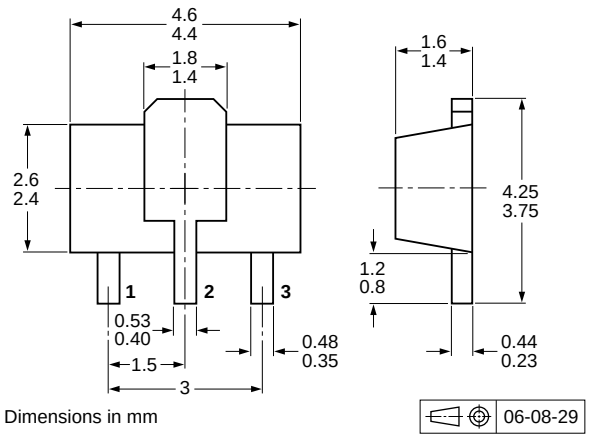


Fig 1. Package outline PXTA92 (SOT89/SC-62)

10. Packing information

Table 8. Packing methods

The indicated -xxx are the last three digits of the 12NC ordering code.[1]

Type number	Package	Description	Packing quantity	
			1000	4000
PXTA92	SOT89	8 mm pitch, 12 mm tape and reel; T1 [2]	-115	-135
		8 mm pitch, 12 mm tape and reel; T3 [3]	-120	-

[1] For further information and the availability of packing methods, see Section 14.

[2] T1: normal taping

[3] T3: 90° taping

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11. Soldering

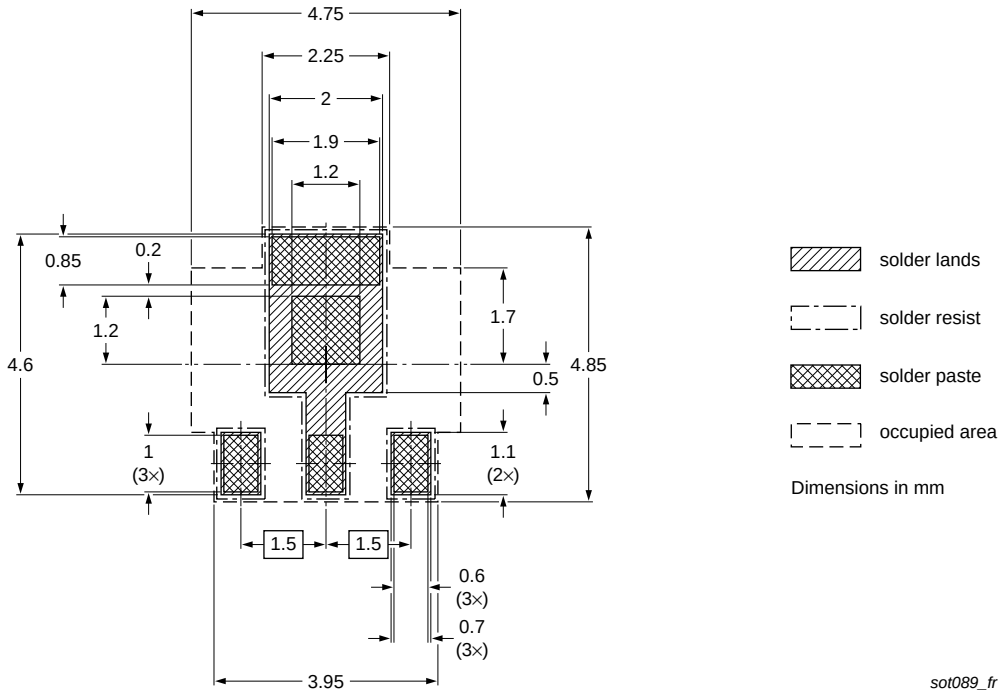


Fig 2. Reflow soldering footprint PXTA92 (SOT89/SC-62)

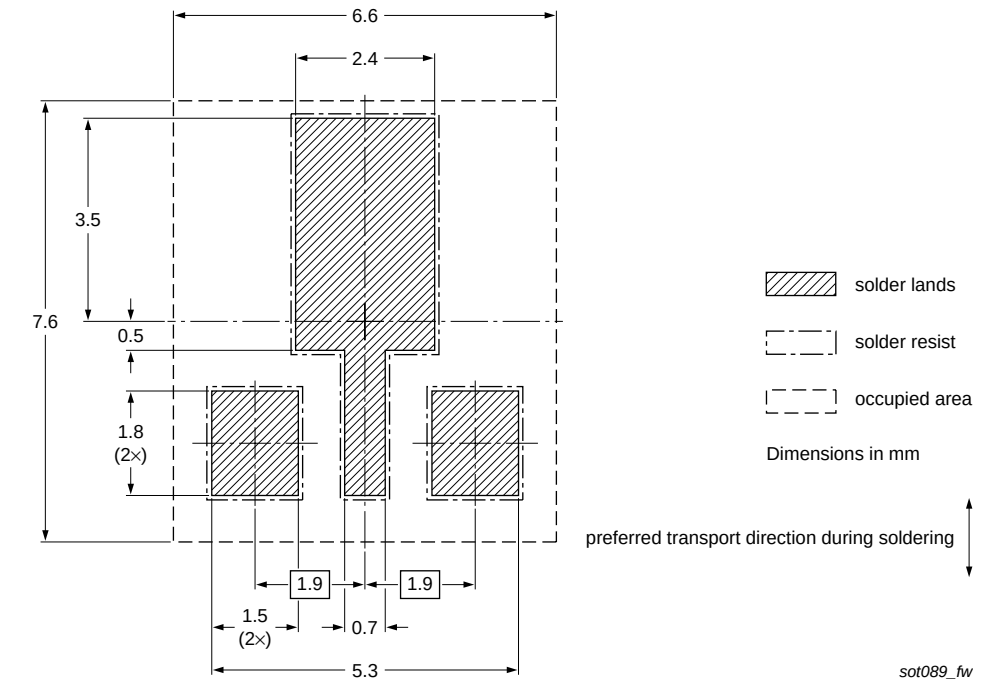


Fig 3. Wave soldering footprint PXTA92 (SOT89/SC-62)

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12. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
PXTA92 v.6	20110927	Product data sheet	-	PXTA92 v.5
Modifications:	• Descriptive title corrected			
PXTA92 v.5	20110711	Product data sheet	-	PXTA92 v.4
PXTA92 v.4	20041209	Product specification	-	PXTA92 v.3
PXTA92 v.3	19990429	Product specification	-	PXTA92_93_CNV v.2
PXTA92_93_CNV v.2	19970620	Product specification	-	-

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13. Legal information

13.1 Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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