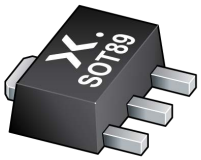


PXTA92

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)

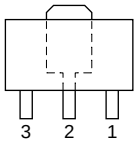
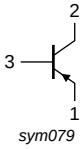
1.4 Quick reference data

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.

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.

9. Package outline

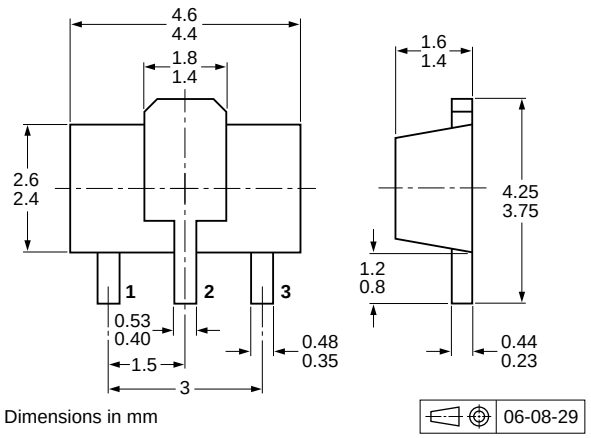


Fig 1. Package outline PXTA92 (SOT89/SC-62)

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

11. Soldering

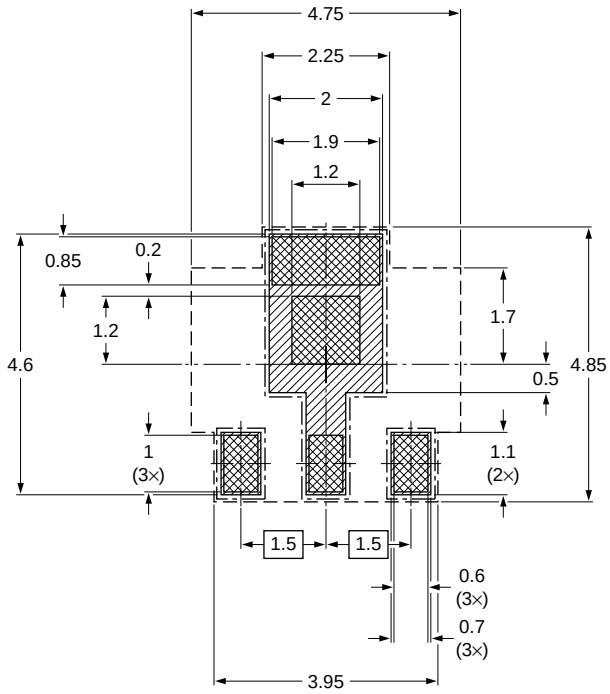


Fig 2. Reflow soldering footprint PXTA92 (SOT89/SC-62)

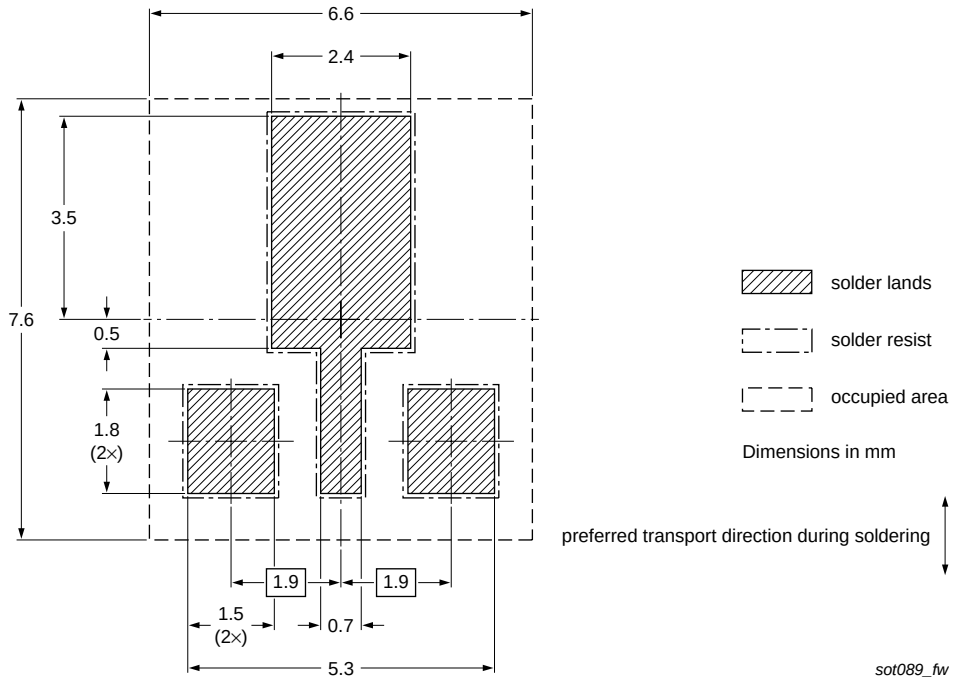


Fig 3. Wave soldering footprint PXTA92 (SOT89/SC-62)

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	-	-

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".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nexperia.com.

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15. Contents

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Date of release: 27 September 2011