

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

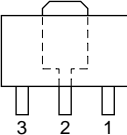
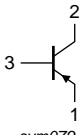
Table 1. Quick reference data

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	$V_{CE} = -10\text{ V};$ $I_C = -10\text{ mA}$	40	-	-	



2. Pinning information

Table 2. Pinning

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

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	$T_{amb} \leq 25\text{ °C}$	[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 cm².

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 cm².

7. Characteristics

Table 7. Characteristics

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

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

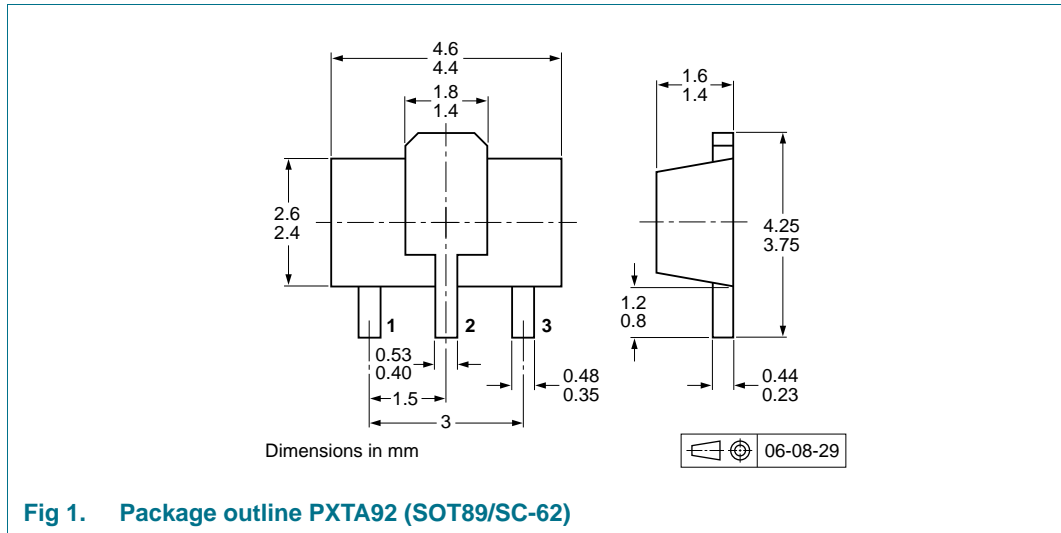


Fig 1. Package outline PXTA92 (SOT89/SC-62)

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

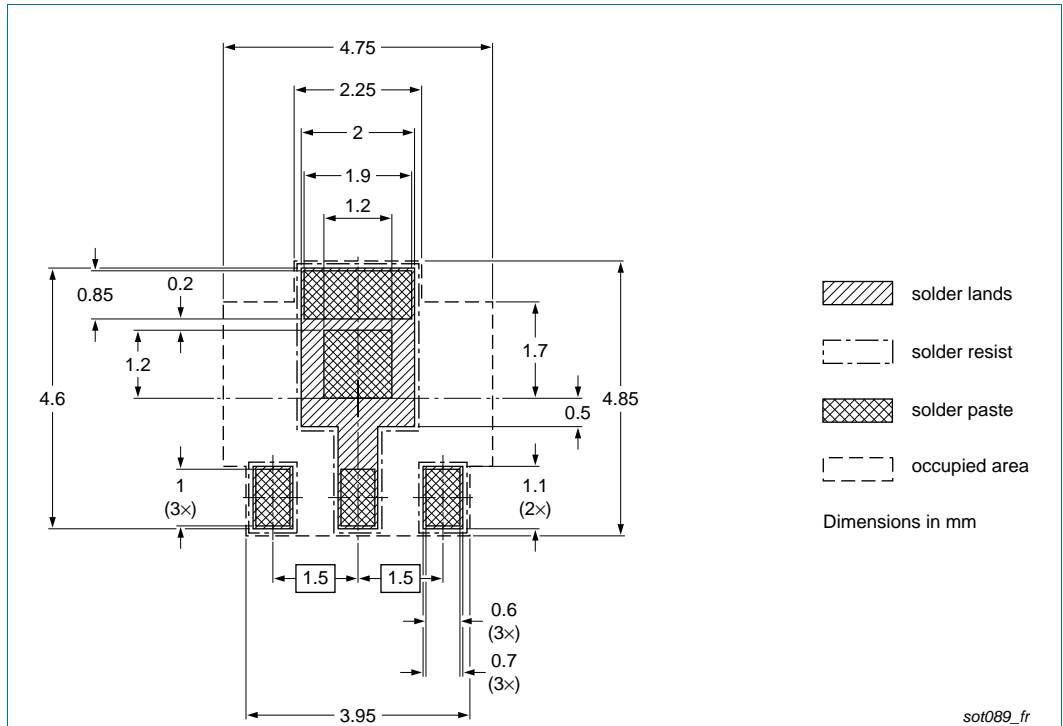


Fig 2. Reflow soldering footprint PXTA92 (SOT89/SC-62)

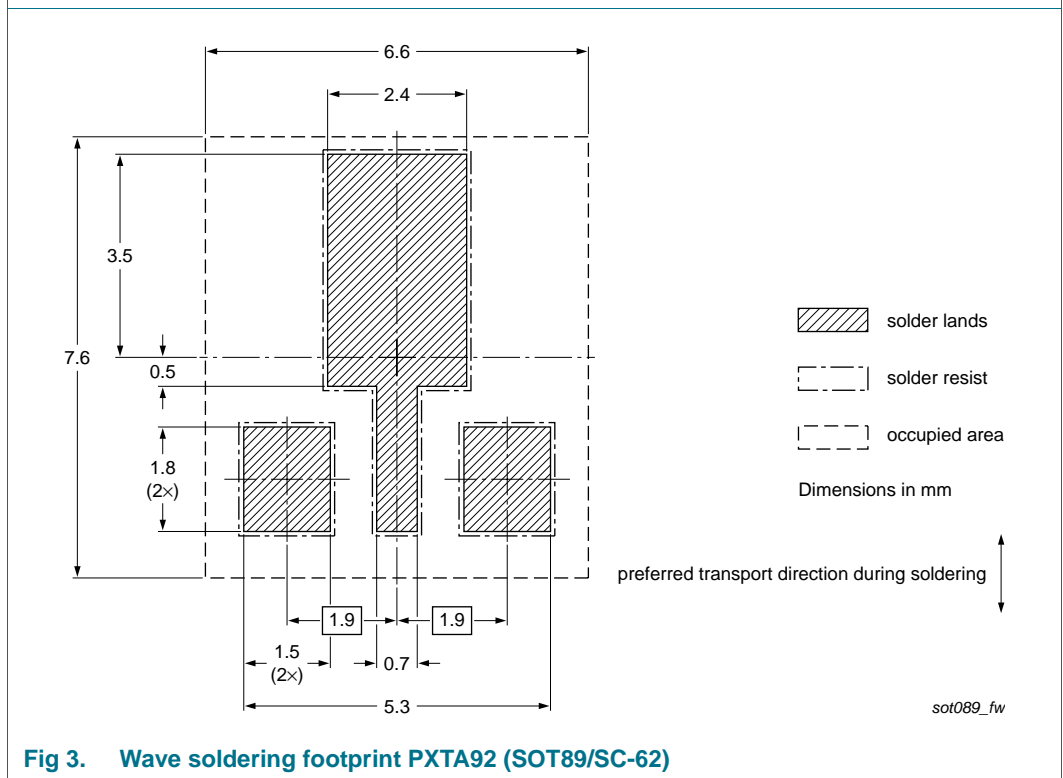


Fig 3. Wave soldering footprint PXTA92 (SOT89/SC-62)

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".

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