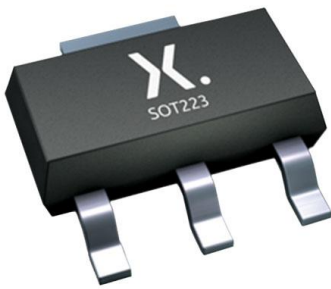


# PZTA42,115 Datasheet

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DiGi Electronics Part Number	PZTA42,115-DG
Manufacturer	<a href="#">Nexperia USA Inc.</a>
Manufacturer Product Number	PZTA42,115
Description	TRANS NPN 300V 0.1A SOT223
Detailed Description	Bipolar (BJT) Transistor NPN 300 V 100 mA 50MHz 1 .2 W Surface Mount SOT-223



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RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

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## Purchase and inquiry

**Manufacturer Product Number:**

PZTA42,115

**Series:**

-

**Transistor Type:**

NPN

**Voltage - Collector Emitter Breakdown (Max):**

300 V

**Current - Collector Cutoff (Max):**

20nA (ICBO)

**Power - Max:**

1.2 W

**Operating Temperature:**

150°C (TJ)

**Qualification:**

AEC-Q101

**Package / Case:**

TO-261-4, TO-261AA

**Base Product Number:**

PZTA42

**Manufacturer:**

Nexperia USA Inc.

**Product Status:**

Active

**Current - Collector (Ic) (Max):**

100 mA

**Vce Saturation (Max) @ Ib, Ic:**

500mV @ 2mA, 20mA

**DC Current Gain (hFE) (Min) @ Ic, Vce:**

40 @ 30mA, 10V

**Frequency - Transition:**

50MHz

**Grade:**

Automotive

**Mounting Type:**

Surface Mount

**Supplier Device Package:**

SOT-223

## Environmental & Export classification

**RoHS Status:**

ROHS3 Compliant

**REACH Status:**

REACH Unaffected

**HTSUS:**

8541.29.0075

**Moisture Sensitivity Level (MSL):**

1 (Unlimited)

**ECCN:**

EAR99



# PZTA42

## NPN high-voltage transistor

08 October 2024

Product data sheet

## 1. General description

NPN high-voltage transistor in a SOT223 Surface-Mounted Device (SMD) plastic package.

PNP complement: PZTA92

## 2. Features and benefits

- Low current (max. 100 mA)
- High voltage (max. 300 V)

## 3. Applications

- Telephony and professional communication equipment

## 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{CE0}$	collector-emitter voltage	open base	-	-	300	V
$I_C$	collector current		-	-	100	mA
$h_{FE}$	DC current gain	$V_{CE} = 10\text{ V}$ ; $I_C = 1\text{ mA}$ ; $T_{amb} = 25\text{ °C}$	25	-	-	

## 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	B	base	<p>SC-73 (SOT223)</p>	<p>sym123</p>
2	C	collector		
3	E	emitter		
4	C	collector		

## 6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
<a href="#">PZTA42</a>	SC-73	plastic, surface-mounted package with increased heatsink; 4 leads; 2.3 mm pitch; 6.5 mm x 3.5 mm x 1.65 mm body	<a href="#">SOT223</a>

## 7. Marking

Table 4. Marking codes

Type number	Marking code
PZTA42	ZTA42

## 8. 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		-	6	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]	-	1.2	W
$T_j$	junction temperature			-	150	°C
$T_{amb}$	ambient temperature			-65	150	°C
$T_{stg}$	storage temperature			-65	150	°C

[1] Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>.

## 9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient		[1]	-	-	104	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point			-	-	23	K/W

[1] Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>.

## 10. Characteristics

Table 7. Characteristics

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

## 11. Package outline

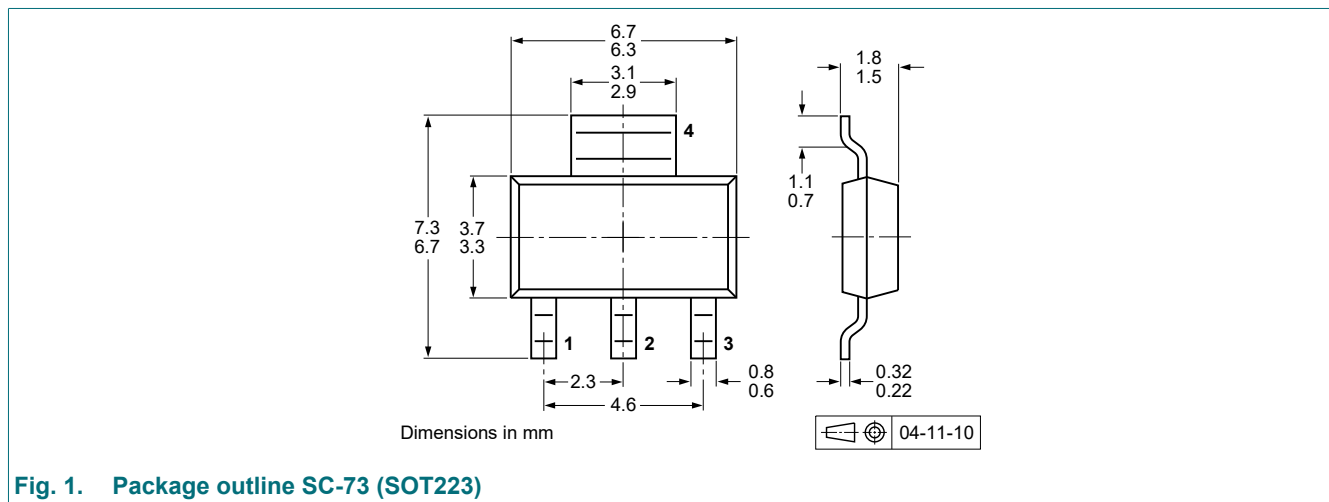


Fig. 1. Package outline SC-73 (SOT223)

## 12. Soldering

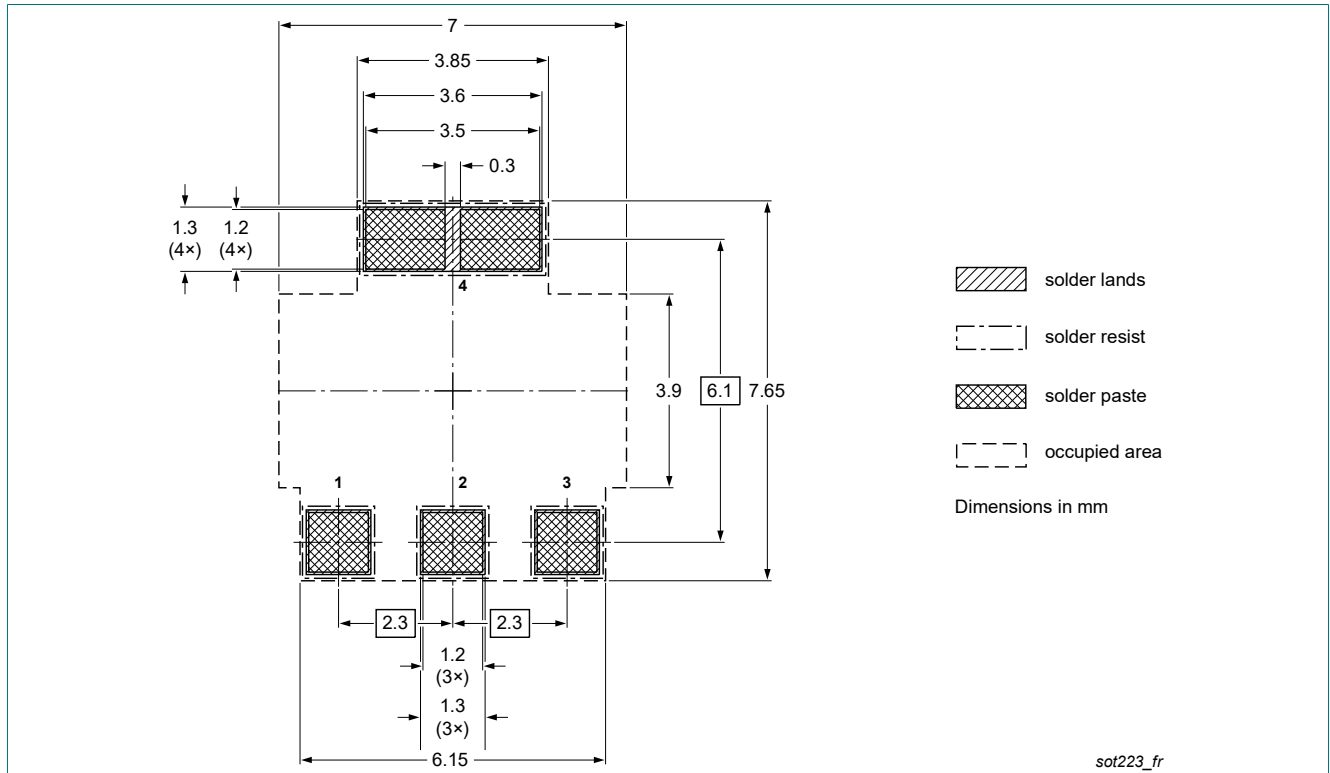


Fig. 2. Reflow soldering footprint for SC-73 (SOT223)

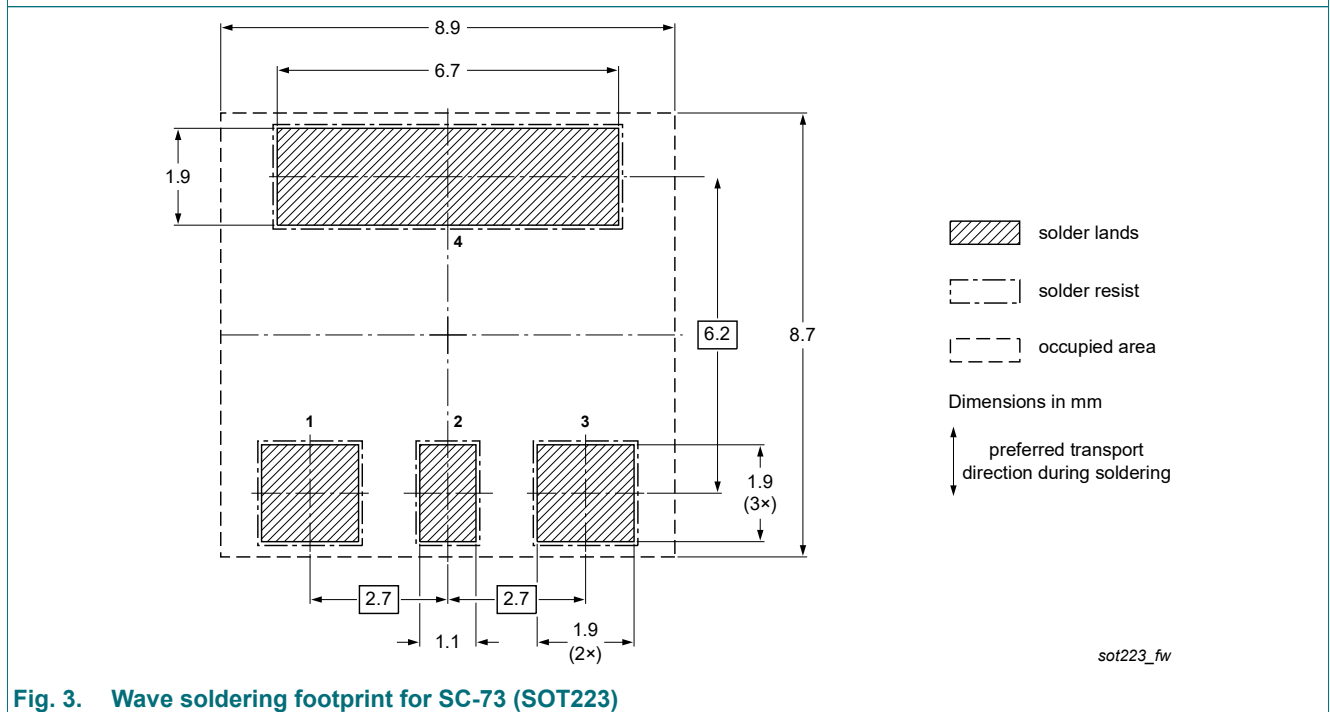


Fig. 3. Wave soldering footprint for SC-73 (SOT223)

## 13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PZTA42 v.3	20241008	Product data sheet	-	PZTA42 v.2
Modifications:	<ul style="list-style-type: none"> <li>The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.</li> <li>Legal texts have been adapted to the new company name where appropriate.</li> <li>Product changed to non automotive. Please refer to the automotive product(s) with -Q.</li> </ul>			
PZTA42 v.2	19990521	Product data sheet	-	PZTA42 v.1
PZTA42 v.1	19970616	Product specification	-	-

## 14. Legal information

### 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 <https://www.nexperia.com>.

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Date of release: 08 October 2024

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