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Electronic Components Sourcing Information

Product Reference Information

Part Number: PBSS5230T,215
Manufacturer: Nexperia USA Inc.
Package: TO-236-3, SC-59, SOT-23-3
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/nexperia-usa-inc/pbss5230t-215.html>

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Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



PBSS5230T

30 V, 2 A PNP low V_{CEsat} transistor

30 September 2025

Product data sheet

1. General description

PNP low V_{CEsat} transistor in a SOT23 small Surface-Mounted Device (SMD) plastic package.

NPN complement: PBSS4230T

2. Features and benefits

- Low collector-emitter saturation voltage V_{CEsat}
- High collector current capability: I_C and I_{CM}
- Higher efficiency leading to less heat generation

3. Applications

- DC-to-DC conversion
- Supply line switching
- Battery charger
- LCD backlighting
- Driver in low supply voltage applications (e.g. lamps and LEDs)
- Inductive load driver (e.g. relays, buzzers and motors)

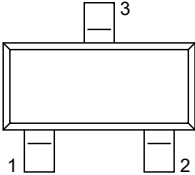
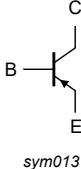
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CEO}	collector-emitter voltage	open base	-	-	-30	V
I_C	collector current		-	-	-2	A
I_{CM}	peak collector current	single pulse; $t_p \leq 1$ ms	-	-	-3	A
R_{CEsat}	collector-emitter saturation resistance	$I_C = -500$ mA; $I_B = -50$ mA; pulsed; $t_p \leq 300$ μ s; $\delta \leq 0.02$; $T_{amb} = 25$ °C	-	160	220	m Ω

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	B	base	 SOT23	 sym013
2	E	emitter		
3	C	collector		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PBSS5230T	SOT23	plastic, surface-mounted package; 3 terminals; 1.9 mm pitch; 2.9 mm x 1.3 mm x 1 mm body	SOT23

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
PBSS5230T	%3G

[1] % = placeholder for manufacturing site code

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		-	-30	V
V _{CEO}	collector-emitter voltage	open base		-	-30	V
V _{EBO}	emitter-base voltage	open collector		-	-5	V
I _C	collector current			-	-2	A
I _{CM}	peak collector current	single pulse; t _p ≤ 1 ms		-	-3	A
I _B	base current			-	-300	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1]	-	300	mW
			[2]	-	480	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 PCB, single-sided copper, tin-plated and standard footprint.
[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm².

9. Thermal characteristics

Table 6. Thermal characteristics

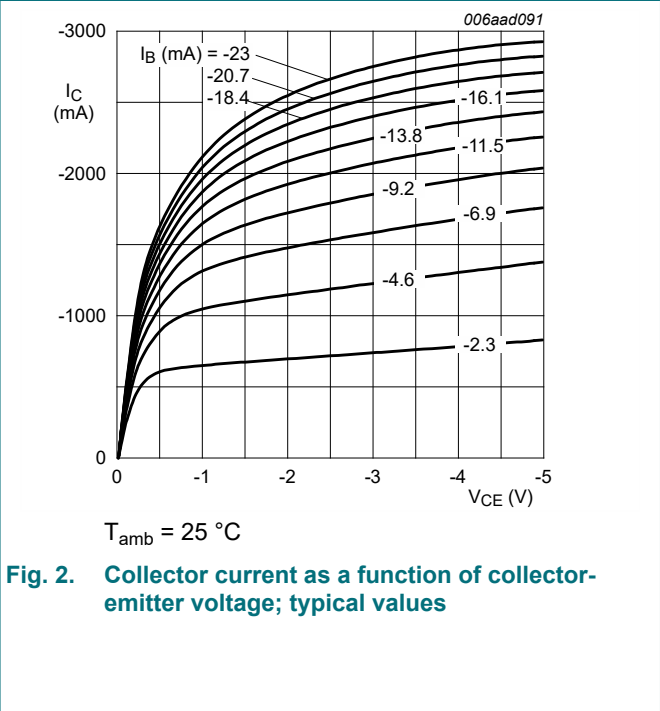
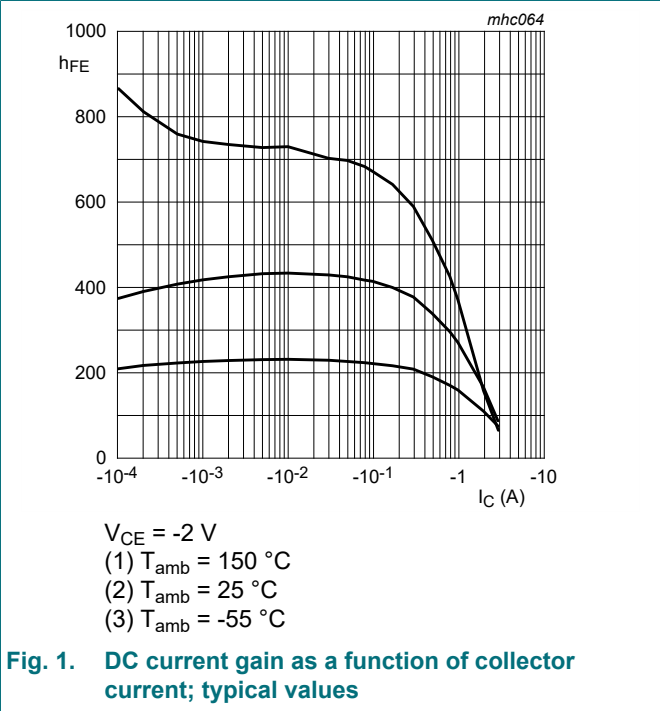
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1]	-	-	417	K/W
			[2]	-	-	260	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm².

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{CBO}	collector-base cut-off current	$V_{CB} = -30\text{ V}$; $I_E = 0\text{ A}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-	-100	nA
		$V_{CB} = -30\text{ V}$; $I_E = 0\text{ A}$; $T_j = 150\text{ }^{\circ}\text{C}$	-	-	-50	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = -4\text{ V}$; $I_C = 0\text{ A}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-	-100	nA
h_{FE}	DC current gain	$V_{CE} = -2\text{ V}$; $I_C = -100\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	300	450	-	
		$V_{CE} = -2\text{ V}$; $I_C = -1\text{ A}$; pulsed; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	200	290	-	
		$V_{CE} = -2\text{ V}$; $I_C = -2\text{ A}$; pulsed; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	100	180	-	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -500\text{ mA}$; $I_B = -50\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-70	-110	mV
		$I_C = -1\text{ A}$; $I_B = -50\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-140	-225	mV
		$I_C = -2\text{ A}$; $I_B = -200\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-240	-350	mV
R_{CEsat}	collector-emitter saturation resistance	$I_C = -500\text{ mA}$; $I_B = -50\text{ mA}$; pulsed; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	160	220	$\text{m}\Omega$
V_{BEsat}	base-emitter saturation voltage	$I_C = -2\text{ A}$; $I_B = -50\text{ mA}$; pulsed; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-	-1.1	V
V_{BEon}	base-emitter turn-on voltage	$V_{CE} = -2\text{ V}$; $I_C = -100\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	-	-0.75	V
f_T	transition frequency	$V_{CE} = -10\text{ V}$; $I_C = -100\text{ mA}$; $f = 100\text{ MHz}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	100	200	-	MHz
C_c	collector capacitance	$V_{CB} = -10\text{ V}$; $I_E = 0\text{ A}$; $i_e = 0\text{ A}$; $f = 1\text{ MHz}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	23	28	pF



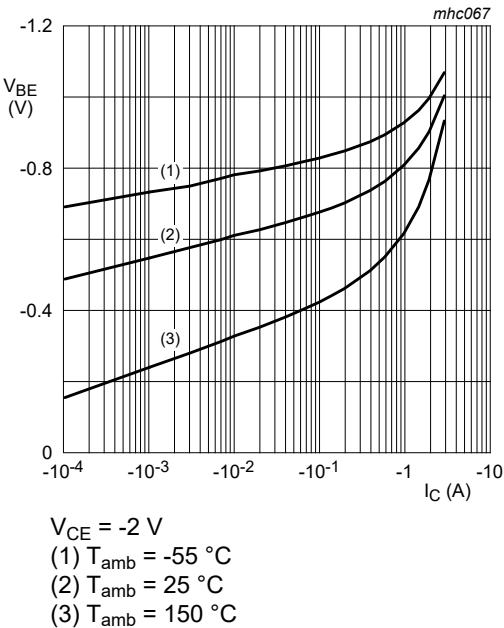


Fig. 3. Base-emitter voltage as a function of collector current; typical values

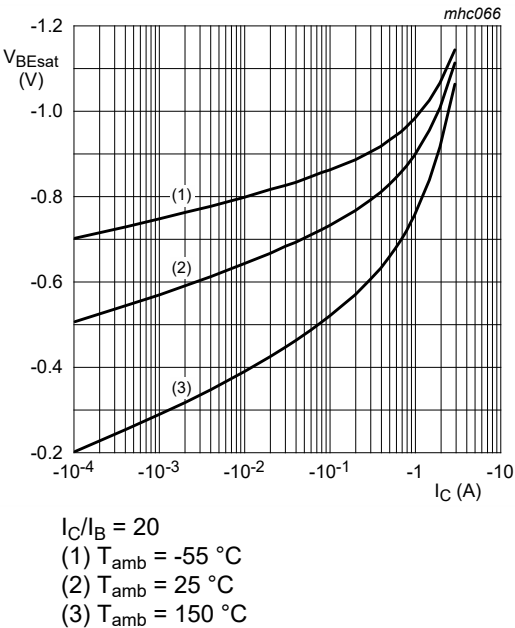


Fig. 4. Base-emitter saturation voltage as a function of collector current; typical values

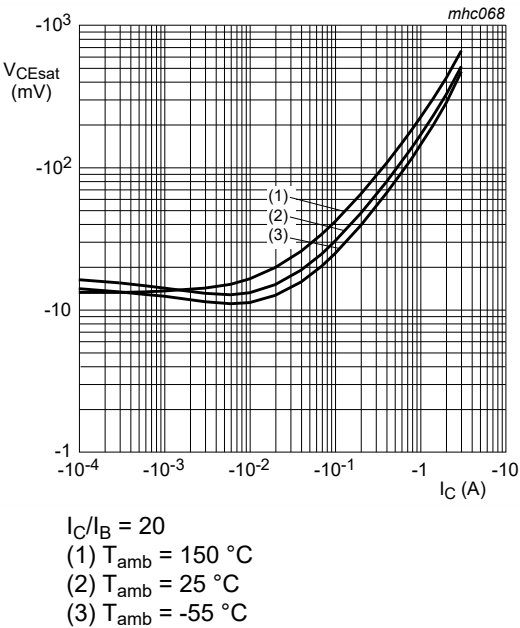


Fig. 5. Collector-emitter saturation voltage as a function of collector current; typical values

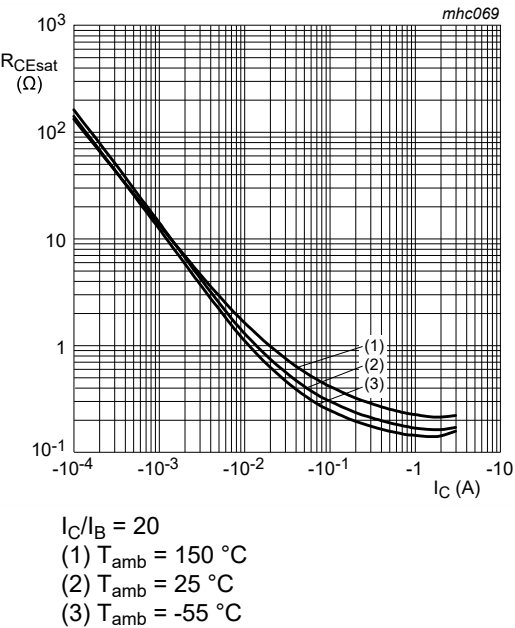
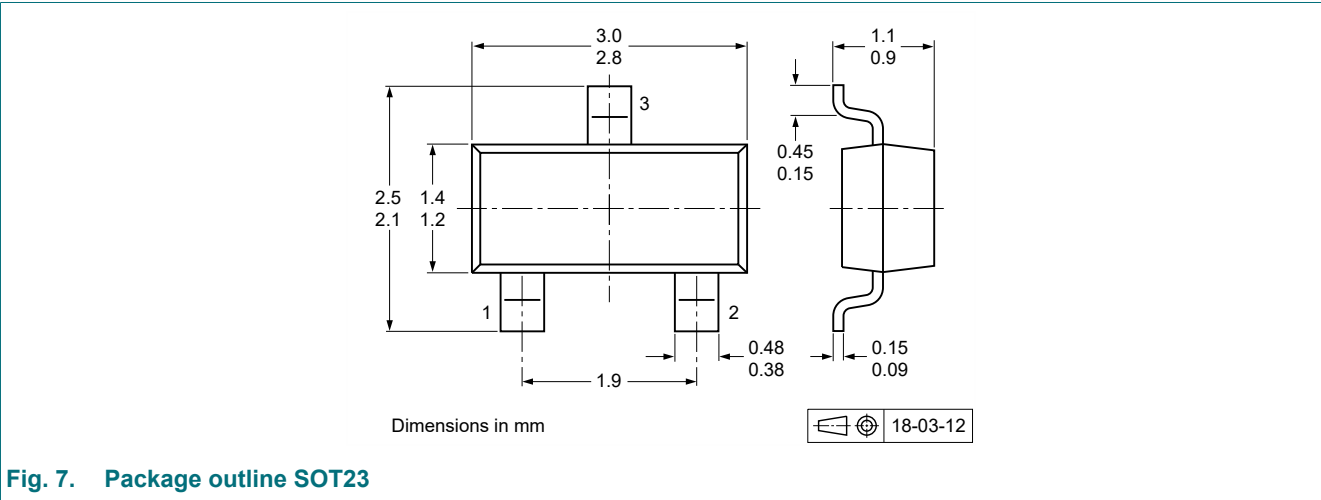
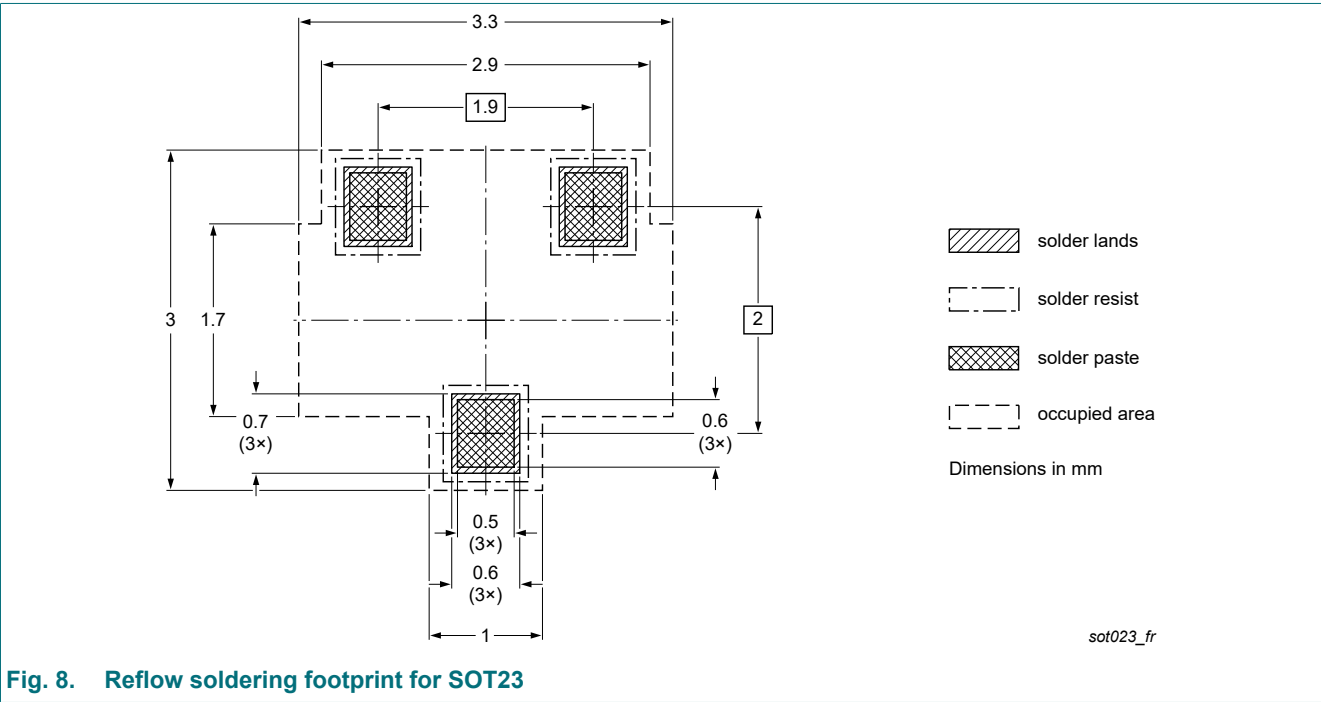


Fig. 6. Collector-emitter saturation resistance as a function of collector current; typical values

11. Package outline



12. Soldering



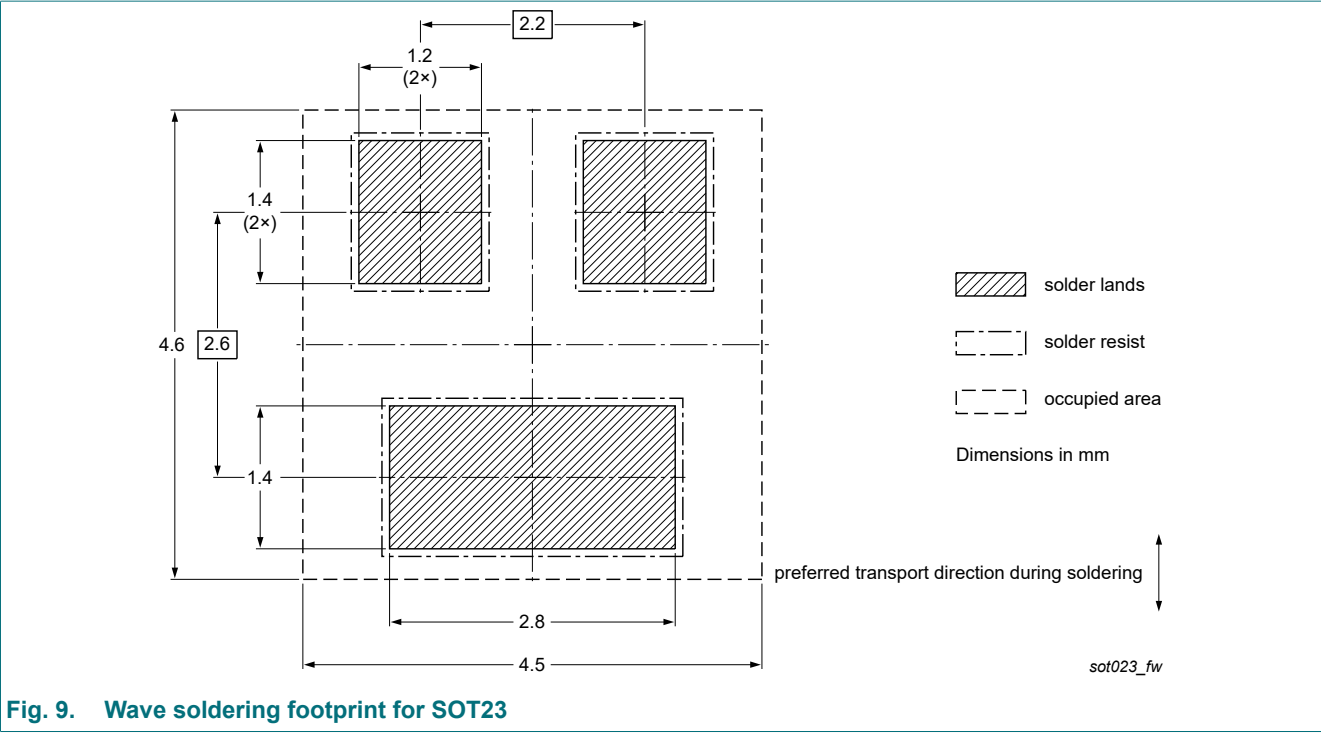


Fig. 9. Wave soldering footprint for SOT23

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PBSS5230T v.4	20250930	Product data sheet	-	PBSS5230T v.3
Modifications:	Product(s) changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).			
PBSS5230T v.3	20230926	Product data sheet	-	PBSS5230T v.2
PBSS5230T v.2	20120604	Product data sheet	-	PBSS5230T v.1
PBSS5230T v.1	20031218	Product data sheet	-	-

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".
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