Product data sheet

1. General description

PNP high-voltage transistor in a SOT23 (TO-236AB) Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Low current (max. 100 mA)
- High voltage (max. 100 V)
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- High-voltage general purpose
- Switching applications

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
V _{CEO}	collector-emitter voltage	open base	-	-	-100	V
I _C	collector current		-	-	-100	mA
h _{FE}	DC current gain	V _{CE} = -1 V; I _C = -10 mA; T _{amb} = 25 °C	30	-	-	

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	В	base	3	_
2	Е	emitter		C
3	С	collector		В
			12	
			SOT23	



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6. Ordering information

Table 3. Ordering information

Type number			
	Name	Description	Version
BSS63-Q		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]
BSS63-Q	BM%

^{[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		-	-110	V
V _{CEO}	collector-emitter voltage	open base		-	-100	V
V _{EBO}	emitter-base voltage	open collector		-	-6	V
Ic	collector current			-	-100	mA
I _{CM}	peak collector current			-	-100	mA
I _{BM}	peak base current			-	-100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1]	-	250	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.

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Тур	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

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10. Characteristics

Table 7. Characteristics

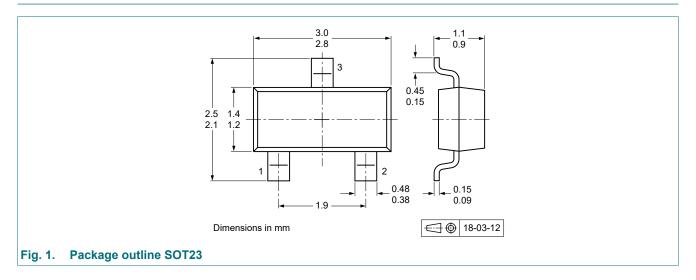
Symbol	Parameter	Conditions	N	/lin	Тур	Max	Unit
I _{CBO}	collector-base cut-off	V _{CB} = -90 V; I _E = 0 A; T _{amb} = 25 °C	-		-	-100	nA
	current	V _{CB} = -90 V; I _E = 0 A; T _j = 150 °C	-		-	-50	μΑ
I _{EBO}	emitter-base cut-off current	V _{EB} = -6 V; I _C = 0 A; T _{amb} = 25 °C	-		-	-100	nA
h _{FE}	DC current gain	V _{CE} = -1 V; I _C = -10 mA; T _{amb} = 25 °C	3	0	-	-	
		V _{CE} = -1 V; I _C = -25 mA; T _{amb} = 25 °C	3	0	-	-	
V _{CEsat}	collector-emitter saturation voltage	I_C = -25 mA; I_B = -2.5 mA; T_{amb} = 25 °C	-		-	-250	mV
V _{BEsat}	base-emitter saturation voltage		-		-	-900	mV
f _T	transition frequency	V_{CE} = -5 V; I_{C} = -25 mA; f = 100 MHz; T_{amb} = 25 °C	5	60	85	-	MHz
C _c	collector capacitance	V _{CB} = -10 V; I _E = 0 A; i _e = 0 A; f = 1 MHz; T _{amb} = 25 °C	-		3	-	pF

11. Test information

Quality information

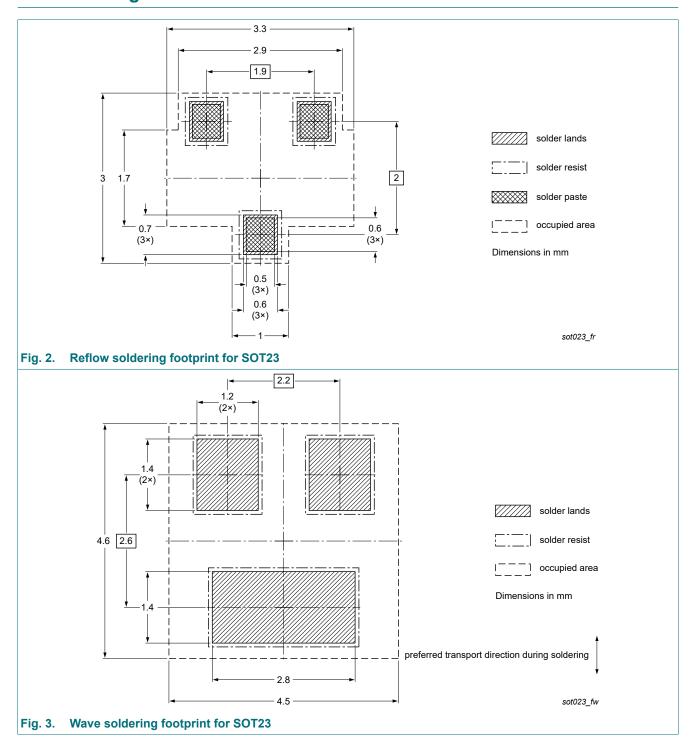
This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline



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13. Soldering



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14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BSS63-Q v.1	20220610	Product data sheet	-	-

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15. 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.

- 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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