



PUMZ1

NPN/PNP general purpose transistor

16 July 2026

Product data sheet

1. General description

Two independently operating NPN/PNP general-purpose double transistors in a very small SOT363-3 (SC-88) Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Low current (max. 100 mA)
- Low voltage (max. 40 V)
- Reduces number of components and boardspace.
- AEC-Q101 qualified

3. Applications

- General purpose switching and amplification

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per transistor; for the PNP transistor with negative polarity						
V_{CE0}	collector-emitter voltage	open base	-	-	40	V
I_C	collector current		-	-	100	mA
h_{FE}	DC current gain	$V_{CE} = 6\text{ V}$; $I_C = 1\text{ mA}$; $T_{amb} = 25\text{ °C}$	120	-	-	

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	E1	emitter TR1	Transparent top view TSSOP6 (SOT363-3)	sym019
2	B1	base TR1		
3	C2	collector TR2		
4	E2	emitter TR2		
5	B2	base TR2		
6	C1	collector TR1		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PUMZ1	TSSOP6	Plastic surface-mounted package; 6 leads	SOT363-3

7. Marking

Table 4. Marking codes

Type number	Marking code ^[1]
PUMZ1	F%Z

[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
Per transistor; for the PNP transistor with negative polarity						
V_{CBO}	collector-base voltage	open emitter		-	50	V
V_{CEO}	collector-emitter voltage	open base		-	40	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			-	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$		-	200	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-65	150	°C
T_{stg}	storage temperature			-65	150	°C
Per device						
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$	[1]	-	300	mW

[1] Device mounted on an FR4 Printed-Circuit Board (PCB).

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per device							
$R_{th(j-a)}$	thermal resistance from junction to ambient		[1]	-	-	416	K/W

[1] Device mounted on an FR4 printed-circuit board.

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per transistor; for the PNP transistor with negative polarity						
I _{CBO}	collector-base cut-off current	V _{CB} = 30 V; I _E = 0 A; T _{amb} = 25 °C	-	-	100	nA
		V _{CB} = 30 V; I _E = 0 A; T _j = 150 °C	-	-	10	μA
I _{EBO}	emitter-base cut-off current	V _{EB} = 4 V; I _C = 0 A; T _{amb} = 25 °C	-	-	100	nA
h _{FE}	DC current gain	V _{CE} = 6 V; I _C = 1 mA; T _{amb} = 25 °C	120	-	-	
V _{CEsat}	collector-emitter saturation voltage	I _C = 50 mA; I _B = 5 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	-	200	mV
C _c	collector capacitance	V _{CB} = 12 V; I _E = 0 A; i _e = 0 A; f = 1 MHz; T _{amb} = 25 °C; TR1	-	-	1.5	pF
		V _{CB} = 12 V; I _E = 0 A; i _e = 0 A; f = 1 MHz; T _{amb} = 25 °C; TR2	-	-	2.2	pF
f _T	transition frequency	V _{CE} = 12 V; I _C = 2 mA; f = 100 MHz; T _{amb} = 25 °C	100	-	-	MHz

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

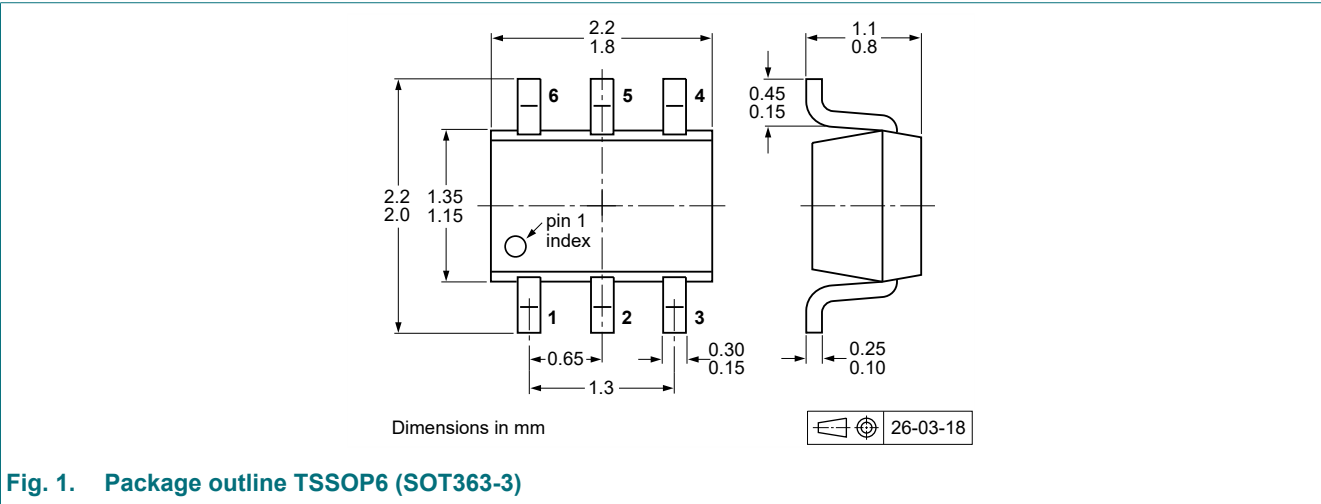


Fig. 1. Package outline TSSOP6 (SOT363-3)

13. Soldering

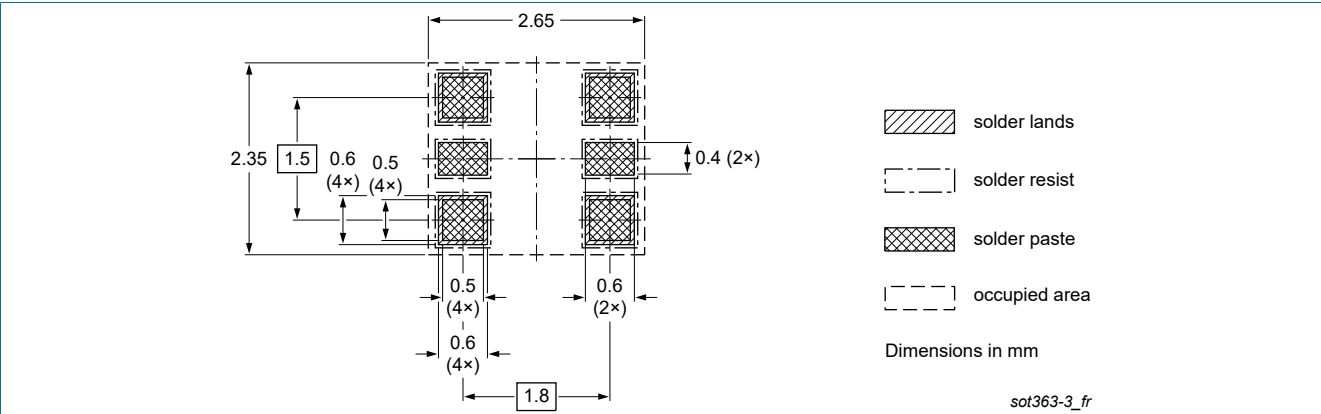


Fig. 2. Reflow soldering footprint for TSSOP6 (SOT363-3)

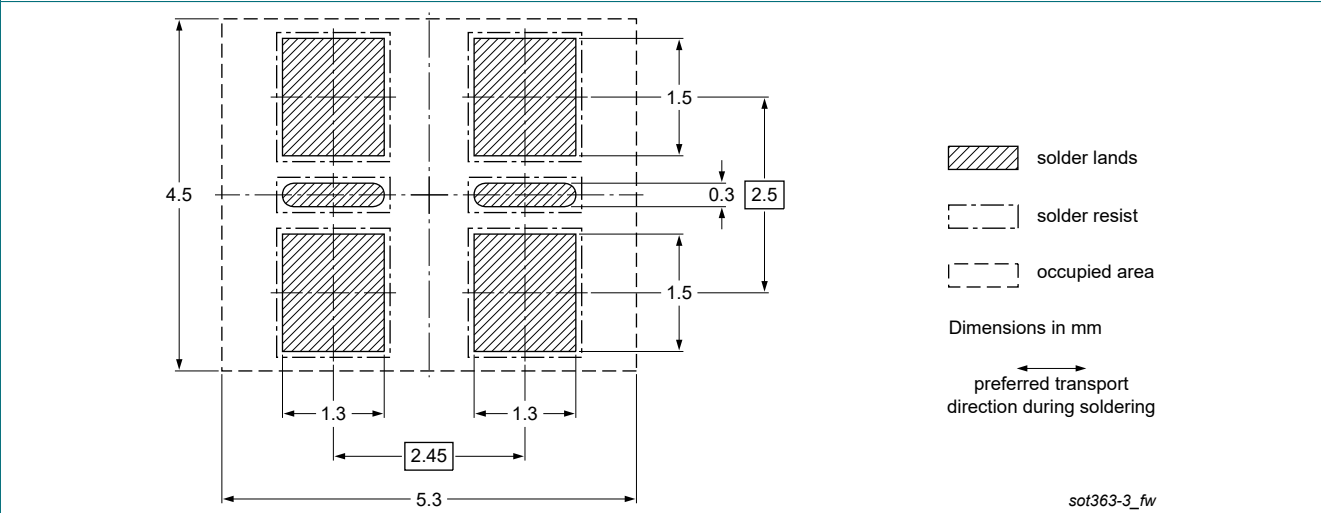


Fig. 3. Wave soldering footprint for TSSOP6 (SOT363-3)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PUMZ1 v.4	20260716	Product data sheet	-	PUMZ1 v.3
Modification:	• Package changed from SOT363 to SOT363-3			
PUMZ1 v.3	20241121	Product data sheet	-	PUMZ1 v.2
PUMZ1 v.2	20041015	Product data sheet	-	PUMZ1 v.1
PUMZ1 v.1	20020506	Product specification	-	-

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.

- [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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