



PESD22VV1BIFP

Very low capacitance high voltage bidirectional ESD protection diode

24 September 2025

Short data sheet

1. General description

Very low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode, designed to protect one signal line from the damage caused by ESD and other transients. The device is housed in a leadless ultra small DSN0603P-2 (SOD962DP) Surface-Mounted Device (SMD) package.

2. Features and benefits

- Bidirectional ESD protection of one line
- Ultra small leadless package with a height of 0.15 mm
- Insulating 6-sided protective coating
- IEC 61000-4-5 (surge): $I_{PP} = 7.2$ A peak pulse (average measured)
- High reverse standoff voltage: $V_{RWM} = 22$ V
- Low capacitance: $C_d = 10$ pF (typical)
- ESD protection up to 30 kV

3. Applications

ESD protection for Type C SBU and CC lines and other high voltage applications in Consumer, Mobile and Computer environment.

4. Quick reference data

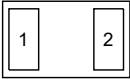
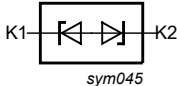
Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{RWM}	reverse standoff voltage	$T_{amb} = 25\text{ °C}$		-	-	22	V
I_{PPM}	rated peak pulse current	$t_p = 8/20\text{ }\mu\text{s}$	[1]	-	-	5.1	A
V_{CL}	clamping voltage	$I_{PPM} = 5.1\text{ A}$; $t_p = 8/20\text{ }\mu\text{s}$; $T_{amb} = 25\text{ °C}$	[1]	-	-	40	V

[1] Device stressed with 8/20 μs exponential decay waveform according to IEC 61000-4-5.

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K1	cathode (diode 1)	 <p>Transparent top view</p> <p>DSN0603P-2 (SOD962DP)</p>	 <p>sym045</p>
2	K2	cathode (diode 2)		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PESD22VV1BIFP	DSN0603P-2	silicon, leadless ultra small package; 2 terminals; 0.36 mm pitch; 0.6 mm x 0.3 mm x 0.15 mm body	SOD962DP

7. Application information

The device is designed for the protection of one bidirectional data line from surge pulses and ESD damage. The device is suitable on lines where the signal polarities are both positive and negative with respect to ground.

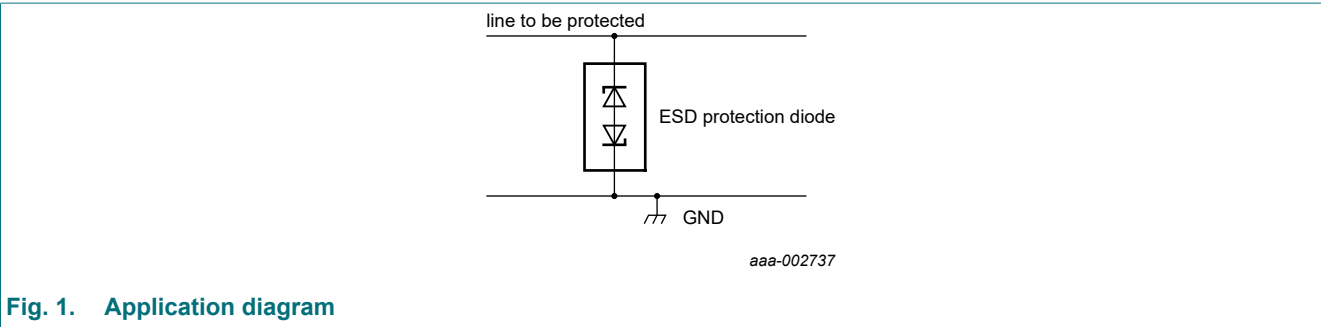


Fig. 1. Application diagram

Circuit board layout and protection device placement

Circuit board layout is critical for the suppression of ESD, Electrical Fast Transient (EFT) and surge transients. The following guidelines are recommended:

1. Place the device as close to the input terminal or connector as possible.
2. Minimize the path length between the device and the protected line.
3. Keep parallel signal paths to a minimum.
4. Avoid running protected conductors in parallel with unprotected conductors.
5. Minimize all Printed-Circuit Board (PCB) conductive loops including power and ground loops.
6. Minimize the length of the transient return path to ground.
7. Avoid using shared transient return paths to a common ground point.
8. Use ground planes whenever possible. For multilayer PCBs, use ground vias.

8. Package outline

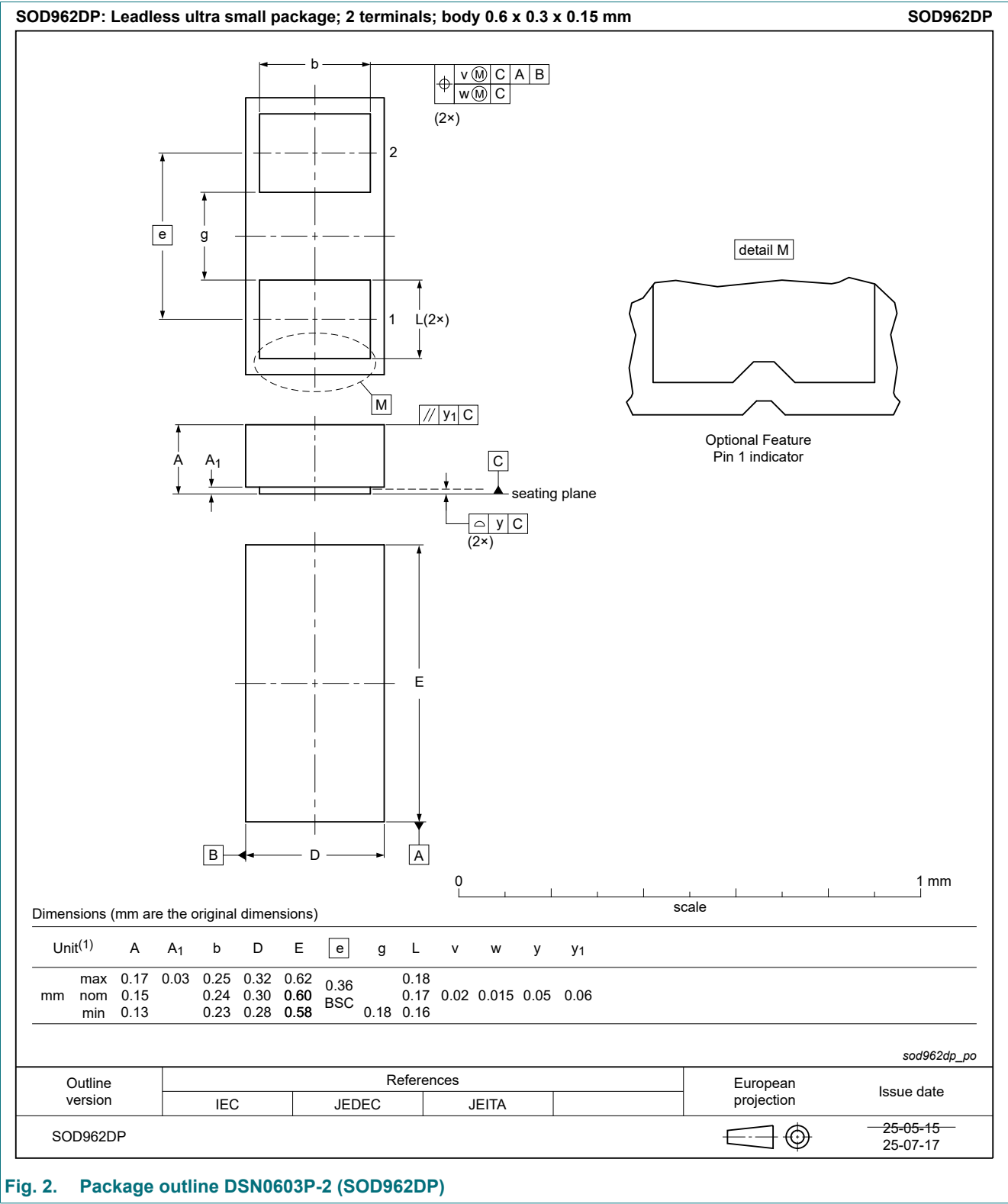


Fig. 2. Package outline DSN0603P-2 (SOD962DP)

9. Soldering

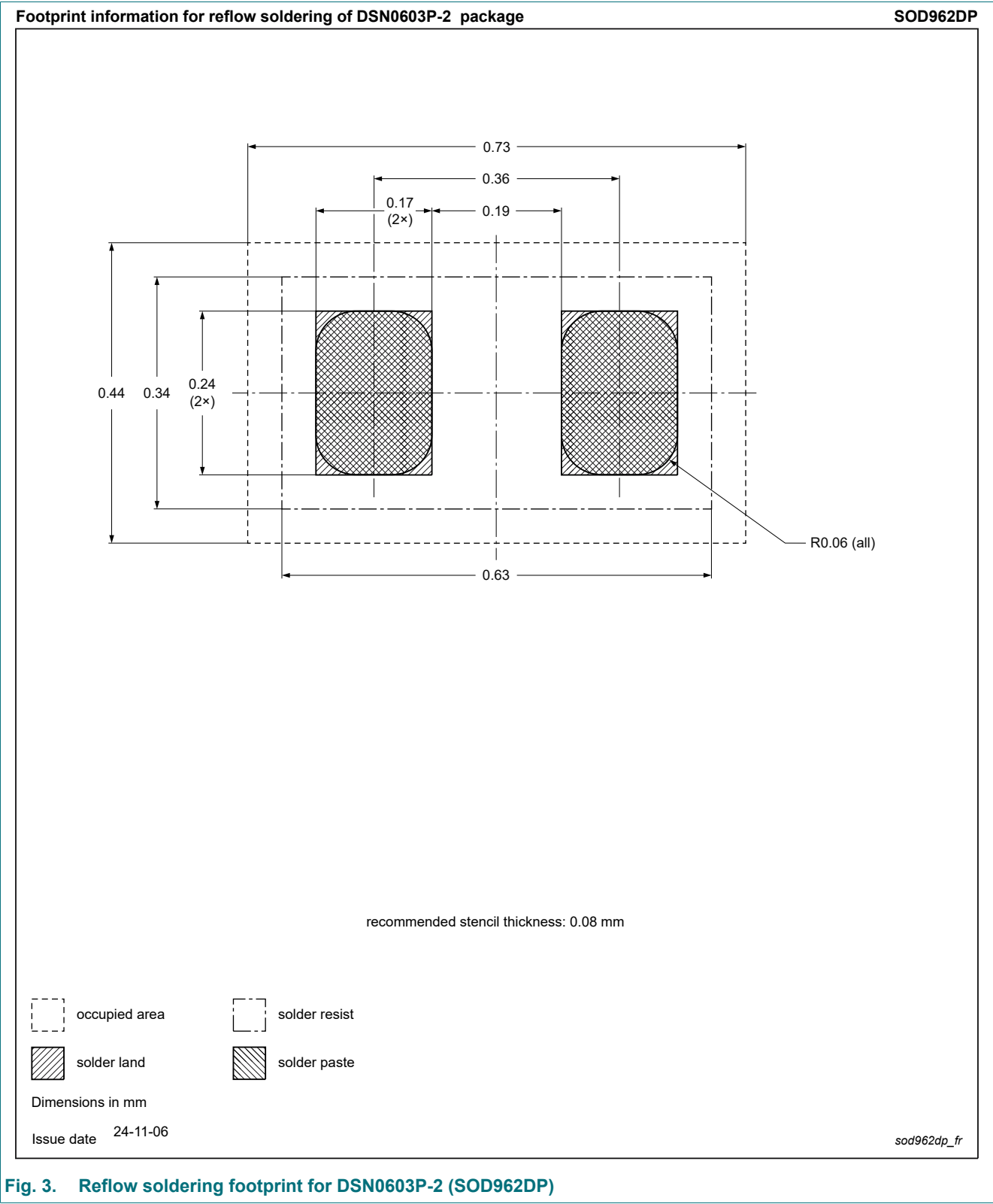


Fig. 3. Reflow soldering footprint for DSN0603P-2 (SOD962DP)

10. Revision history

Table 4. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PESD22VV1BIFP_SDS v.1	20250924	Short data sheet	-	-

11. 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.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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