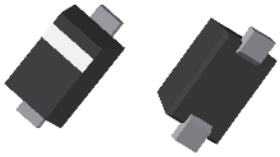
ESDHDxxUB Series

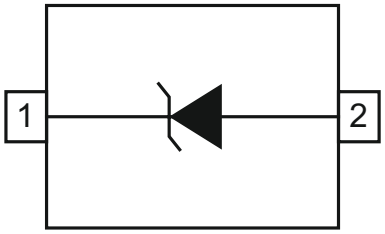
ESD Protection Diodes

Rev.03 - 13 September 2022 Product data sheet

1. General description

The ESDHDxxUB Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.





2. Features and benefits

- IEC 61000-4-2 (ESD) ±30 kV(air), ±30 kV(contact)
- Protects one directional I/O line
- Low leakage current
- Low clamping voltage
- Meet MSL level 1
- Halogen free and RoHS compliant

3. Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Serial and Parallel Ports Protection
- Portable Instrumentation
- Peripherals

4. Ordering information

Type number	Package name	Orderable part number	Packing method	Small packing quantity	Package version	Package issue date
ESDHDxxUB	SOD523	ESDHDxxUBX	Tape and reel	3000	SOD523X	12-Nov-2021
ESDHD03UB	SOD523	ESDHD03UBX	Tape and reel	3000	SOD523X	12-Nov-2021

5. Absolute maximum ratings

In accordance with the Absolute Maximum Rating System (IEC 60134).
T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Values	Unit
Absolute maximum rating				
V_{ESD}	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		±30 ±30	kV kV
T_{stg}	storage temperature range		-55 to 150	°C
T_j	operating temperature range		-55 to 150	°C

6. Characteristics

T_j = 25 °C unless otherwise specified.

Product type	Max. Reverse Working Voltage V_{RWM} (V)	Min. Breakdown Voltage V_{BR} @ I_T = 1 mA (V)	Max. Clamping Voltage V_C @ I_{pp} = 1 A (V)	Max. Clamping Voltage V_C @ Max I_{pp} (V)	Max. Peak Pulse current I_{pp} @ 8/20 µs (A)	Maximum Reverse Leakage I_R @ V_R (µA)	Typ. C_j (pF) @ 0 V, 1 MHz	Marking
ESDHD03UB	3.3	4	8	12	25	1	180	ZD
ESDHD05UB	5.0	5.9	9	15	16	1	160	N2
ESDHD12UB	12	13.3	20	30	7	1	80	N3
ESDHD15UB	15	16.5	25	35	6	1	40	N4
ESDHD24UB	24	25.9	40	48	4	1	30	N5
ESDHD36UB	36	38	50	70	3	1	20	KT

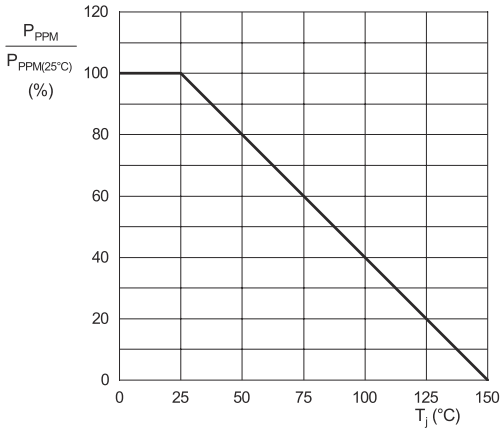


Fig. 1. Peak pulse power derating curve

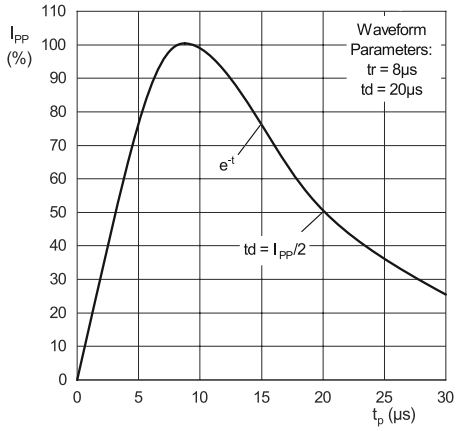


Fig. 2. Pulse waveform

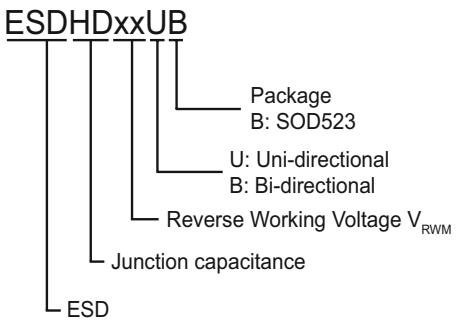
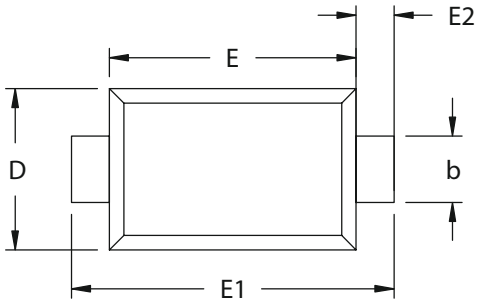
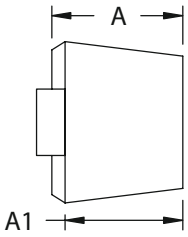


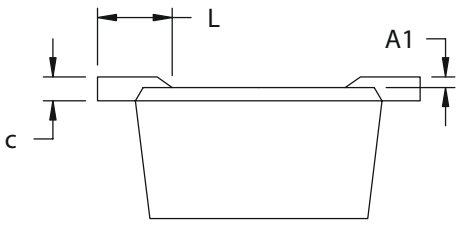
Fig. 3. Part numbering

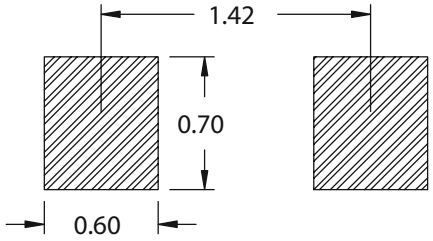
7. Package outline

SOD523









Recommended Footprint

Note:
1. All dimensions do not include mold flash and gate remain.

Unit		A	A1	A2	b	c	D	E	E1	E2	L
MM	MIN	0.51	0.50	0.01	0.25	0.08	0.75	1.10	1.50	(0.20)	0.30
	MAX	0.77	0.70	0.07	0.35	0.15	0.85	1.30	1.70		0.50

8. 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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