

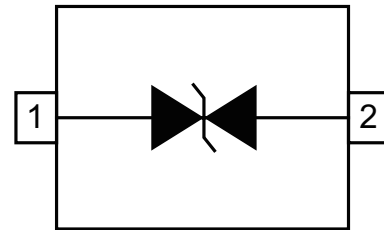
## 1. General description

The ESDHDxxBC series are designed to protect voltage sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients). Excellent clamping capability, this series offers a low leakage current in a miniature SOD323 package.



## 2. Features and benefits

- Peak pulse power 350W @ 8/20 $\mu$ s waveform
- IEC 61000-4-2 (ESD)  $\pm$ 30kV(air),  $\pm$ 30kV(contact)
- Protects Bi-directional I/O line
- Low clamping voltage
- Low leakage current
- Meet MSL level1
- Halogen free and RoHS compliant



## 3. Applications

- Computer Interfaces Protection
- Microprocessors Protection
- Serial and Parallel Ports Protection
- Control Signal Lines Protection
- Power lines on PCB Protection
- Portable instrumentation
- Peripherals



## 4. Ordering information

Type number	Package name	Orderable part number	Packing method	Small packing quantity	Package version	Package issue date
ESDHDxxBC	SOD323	ESDHDxxBCX	Tape and reel	3000	SOD323X	13-Oct-2020
ESDHD03BC	SOD323	ESDHD03BCX	Tape and reel	3000	SOD323X	13-Oct-2020

## 5. Absolute maximum ratings

In accordance with the Absolute Maximum Rating System (IEC 60134).

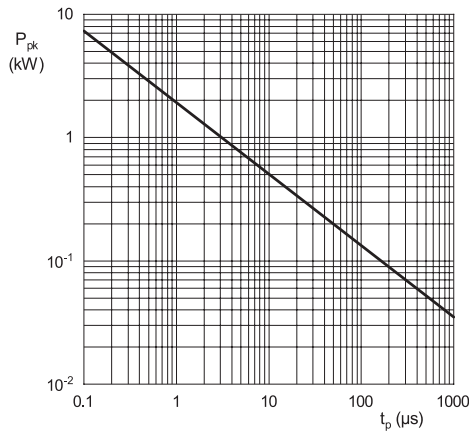
$T_j = 25^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Values	Unit
<b>Absolute maximum rating</b>				
$P_{PPM}$	peak pulse power	$t_p = 8/20 \mu\text{s}$	350	W
$V_{ESD}$	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		$\pm$ 30 $\pm$ 30	kV kV
$T_{stg}$	storage temperature range		-55 to 150	$^\circ\text{C}$
$T_j$	operating temperature range		-55 to 150	$^\circ\text{C}$

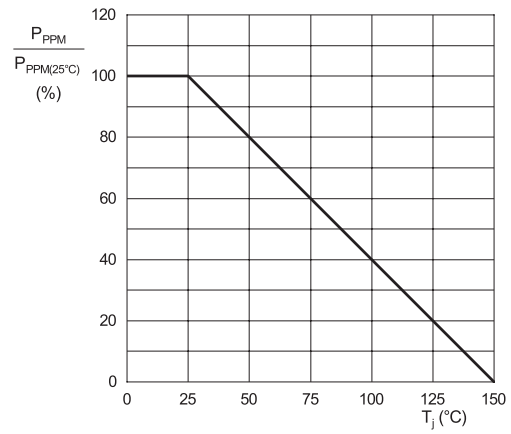
## 6. Characteristics

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

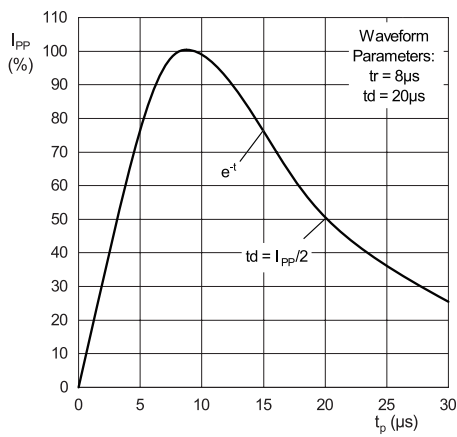
Product type	Max. Reverse Working Voltage $V_{RWM}$ (V)	Min. Breakdown Voltage $V_{BR}$ @ $I_T = 1\text{ mA}$ (V)	Max. Clamping Voltage $V_C$ @ $I_{pp} = 1\text{ A}$ (V)	Max. Clamping Voltage $V_C$ @ Max $I_{pp}$ (V)	Max. Peak Pulse current $I_{pp}$ @ 8/20 $\mu\text{s}$ (A)	Maximum Reverse Leakage $I_R$ @ $V_R$ ( $\mu\text{A}$ )	Typ. $C_j$ (pF) @ 0 V, 1 MHz	Marking
ESDHD03BC	3.3	3.6	7.5	16	25	1	150	2A
ESDHD05BC	5	6	9.8	18	24	1	120	2B
ESDHD08BC	8	8.5	13.4	24	18	1	110	2C
ESDHD12BC	12	13.3	19	32	13	1	70	2D
ESDHD15BC	15	16.5	24	38	10	1	40	2J
ESDHD18BC	18	20	29	45	8	1	35	2K
ESDHD24BC	24	26.7	43	52	7	1	30	2H



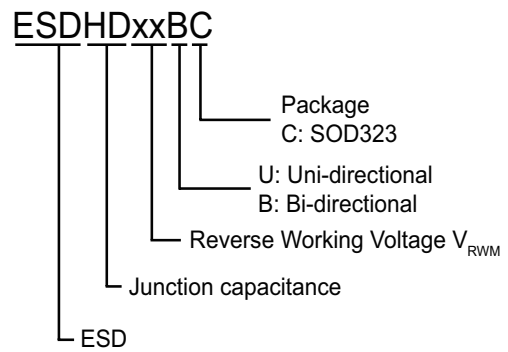
**Fig. 1. Pulse rating curve**



**Fig. 2. Peak pulse power derating curve**



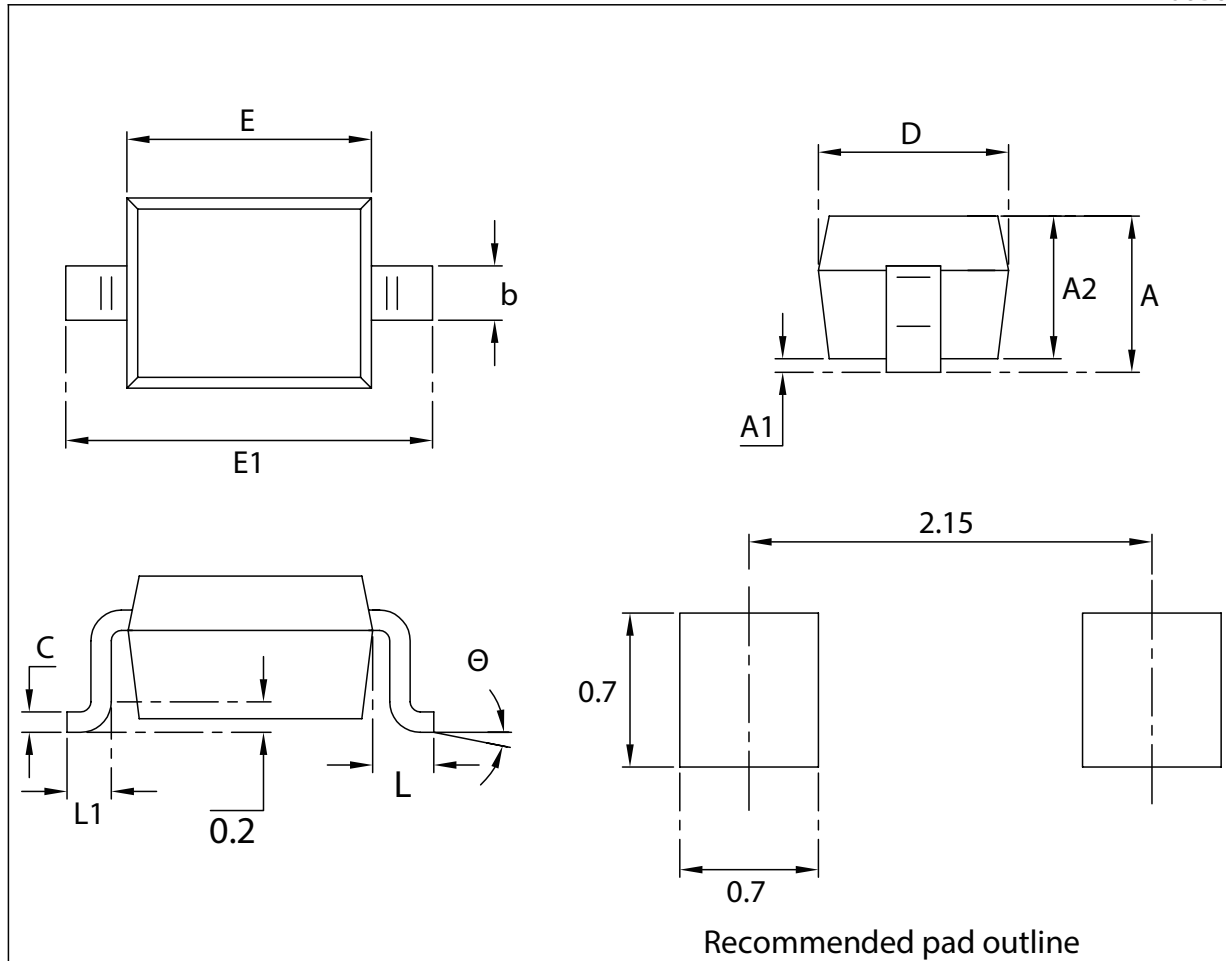
**Fig. 3. Pulse waveform**



**Fig. 4. Part numbering**

### 7. Package outline

SOD323



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.036
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.500	2.700	0.100	0.108
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
Θ	0°	8°	0°	8°

**Note:**

1. Controlling dimension : in millimeters.
2. General tolerance: +/-0.05mm.
3. The pad layout is for reference purposes only.

## 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.

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