



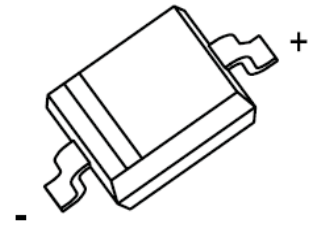
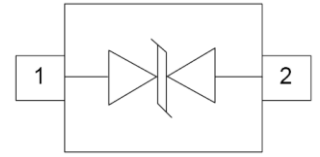
## SD03C Bi-directional ESD Protection Diode

### Features

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD):  $\pm 30$  kV (air),  $\pm 30$  kV (contact)
- 500 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Low clamping voltage
- Working voltage:  $V_{RWM} = 3.3V$
- Low reverse clamping voltage

### Mechanical Data

- Case: SOD-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOD-323

### Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	$V_{ESD-A}$	$\pm 30$	kV
IEC 61000-4-2; ESD (Contact)	$V_{ESD-C}$	$\pm 30$	kV
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	500	W
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	40	A

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-to-Air <sup>**1</sup>	$R_{\theta JA}$	420	$^\circ C/W$
Thermal Resistance Junction-to-Case <sup>**1</sup>	$R_{\theta JC}$	259	$^\circ C/W$
Thermal Resistance Junction-to-Lead <sup>**1</sup>	$R_{\theta JL}$	279	$^\circ C/W$
Junction Temperature Range	$T_J$	-55 ~ +125	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55 ~ +150	$^\circ C$

Note 1: The data tested by surface mounted on a 15mm \* 15mm \* 1mm FR4-epoxy P.C.B



### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	$V_{RWM}$		-	-	3.3	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	3.8	-	5.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 3.3\text{V}$	-	-	1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$	-	-	6	V
		$I_{PP} = 40\text{A}$ , $t_p = 8/20\mu\text{s}$	-	-	12.5	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$	-	50	75	pF

### Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

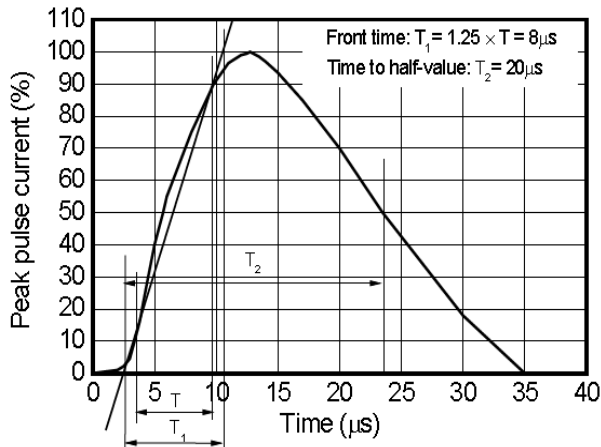


Fig 1 8/20  $\mu\text{s}$  waveform per IEC61000-4-5

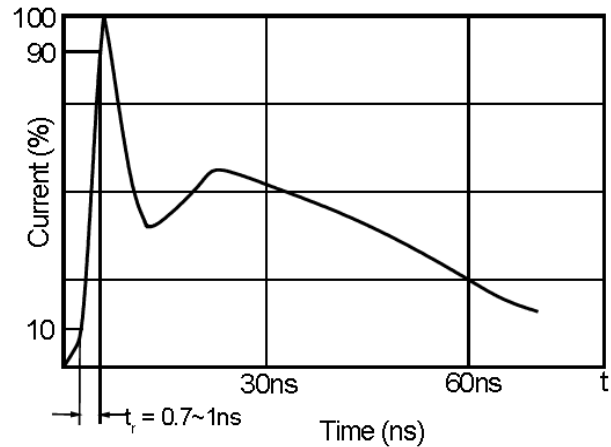


Fig 2 ESD pulse waveform according to IEC61000-4-2

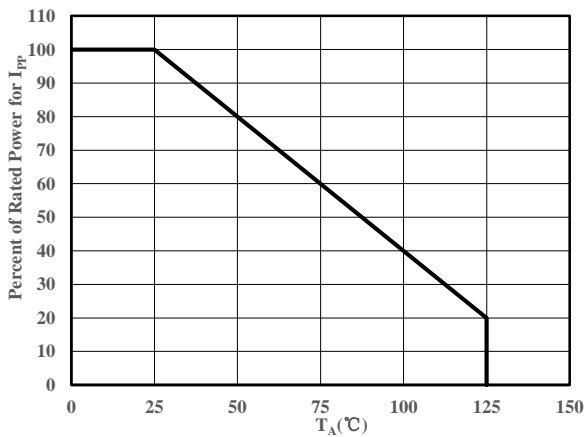


Fig 3 Power Derating Curve



## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-323

