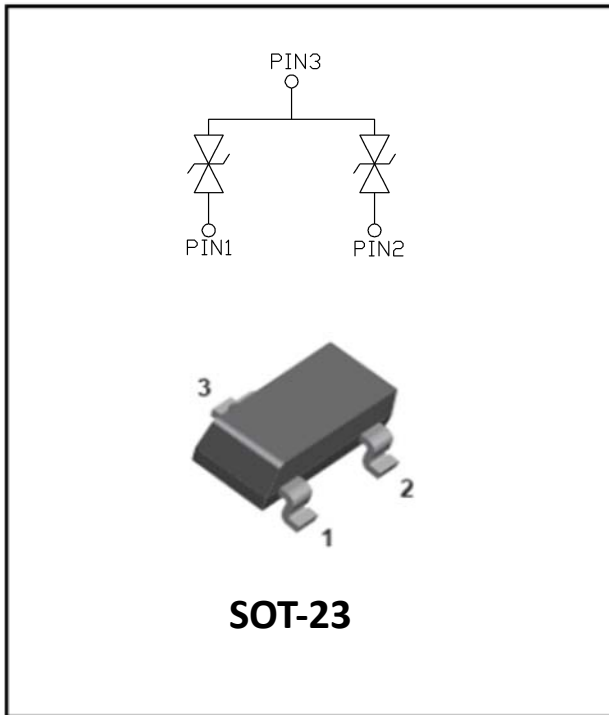


## 2-Line, Bi-directional, Transient Voltage Suppressor



### Features

- Stand-off voltage:  $\pm 24V$  Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 30kV$  (contact)  
IEC61000-4-5(surge): 8A (8/20 $\mu s$ )
- Low leakage current:
- Ultra low clamping voltage
- RoHS Compliant

### Applications

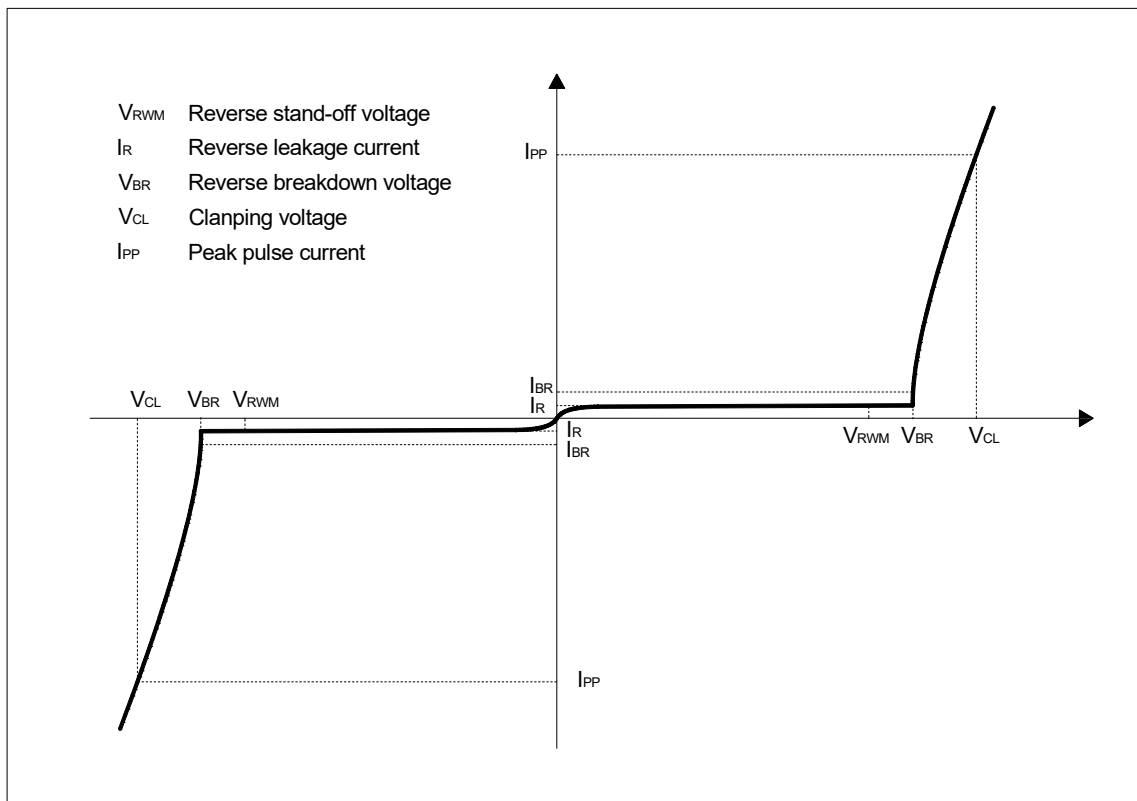
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

### Mechanical Data

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below



### ■Definitions of electrical characteristics





# ESD2402EB

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	350	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	8	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Junction temperature	$T_J$	150	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

## ■Electrical Characteristics ( $T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	$V_{RWM}$	V				$\pm 24$
Reverse leakage current	$I_R$	$\mu A$	$V_{RWM} = 24V$			0.5
Reverse breakdown voltage	$V_{BR}$	V	$I_T = 1mA$	26.3		31
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 1A, t_p = 8/20\mu s$		31	34
		V	$I_{PP} = 5A, t_p = 8/20\mu s$		36	40
		V	$I_{PP} = 8A, t_p = 8/20\mu s$		41	44
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		20	30

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5.

## ■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD2402EB	F2	Approximate 8	3000	30000	120000	7" reel



## ■ Characteristics (Typical)

Fig.1 8/20 $\mu$ s waveform per IEC61000-4-5

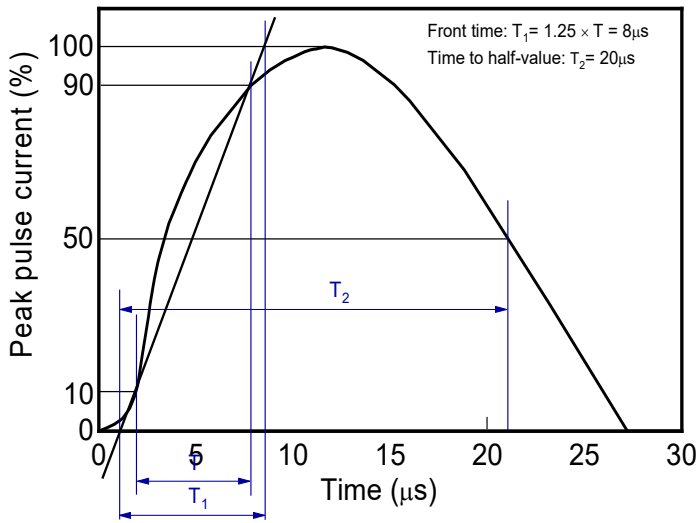


Fig.2 Contact discharge current waveform per IEC61000-4-2

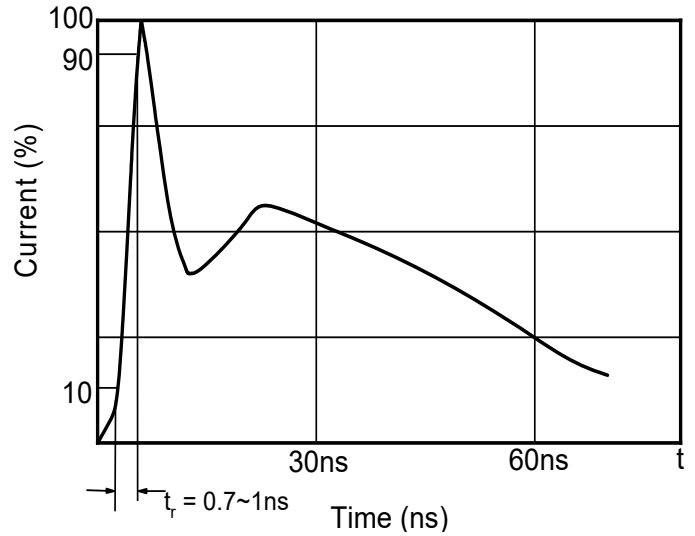


Fig.3 Clamping voltage vs. Peak pulse current

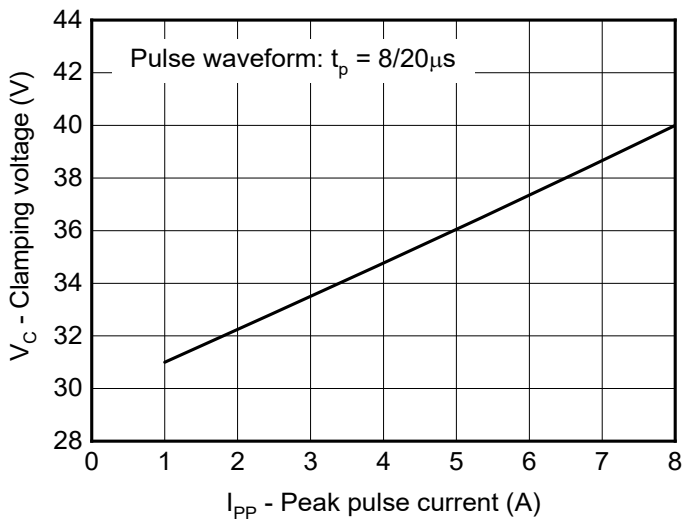


Fig.4 Capacitance vs. Reverse voltage

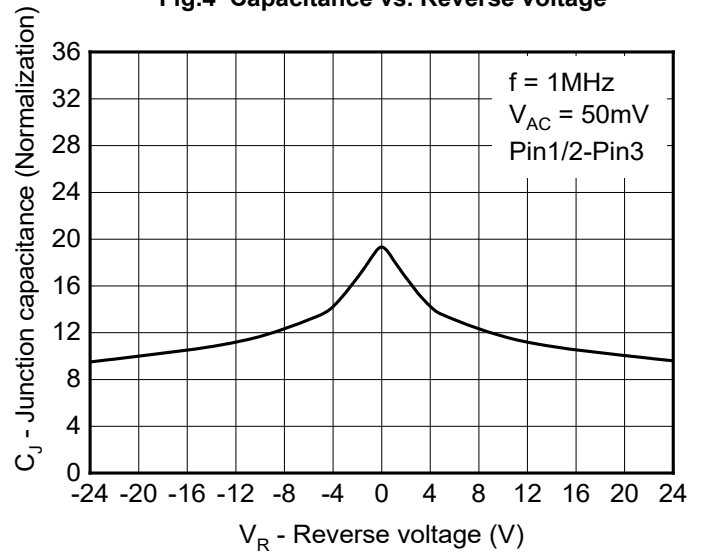


Fig.5 Non-repetitive peak pulse power vs. Pulse time

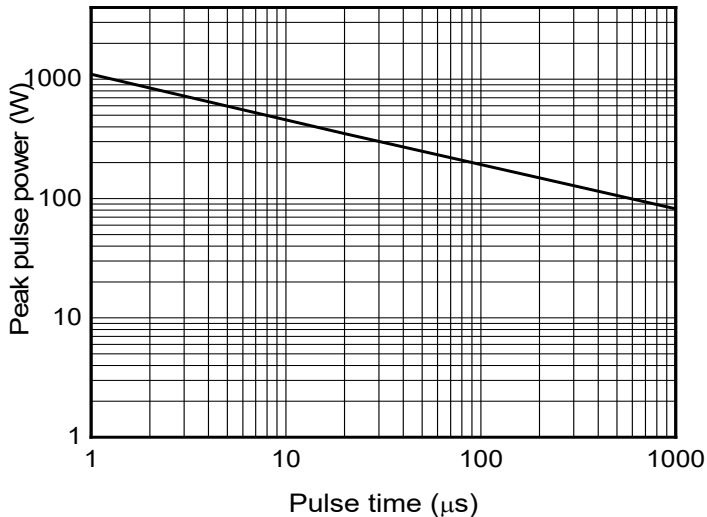
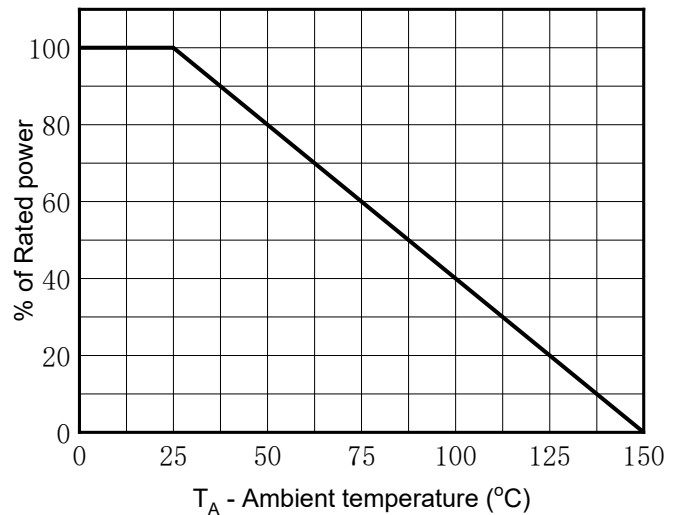


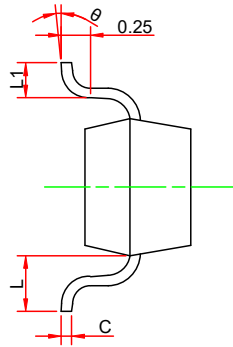
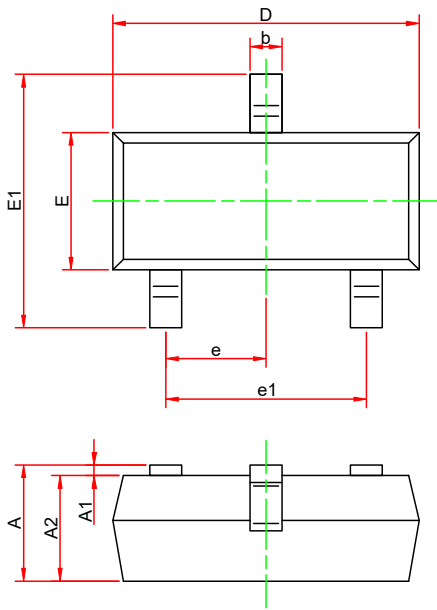
Fig.6. Power derating vs. Ambient temperature





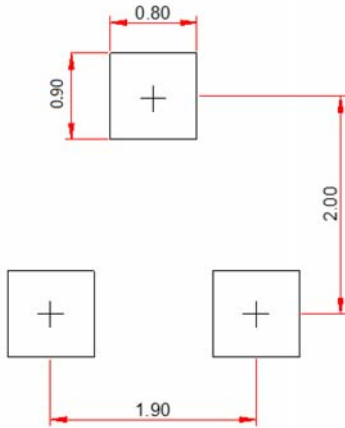
# ESD2402EB

## ■ Outline Dimensions



Symbol	Dimensions in millimeters		
	Min.	Typ.	Max.
A	0.900	-	1.150
A1	0.000	-	0.100
A2	0.900	-	1.050
b	0.300	-	0.500
c	0.100	-	0.200
D	2.800	-	3.000
E	1.200	-	1.400
E1	2.250	-	2.550
e	0.950TYP		
e1	1.800	-	2.000
L	0.550REF		
L1	0.300	-	0.500
theta	0°	-	8°

## ■ Soldering Footprint





## ESD2402EB

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