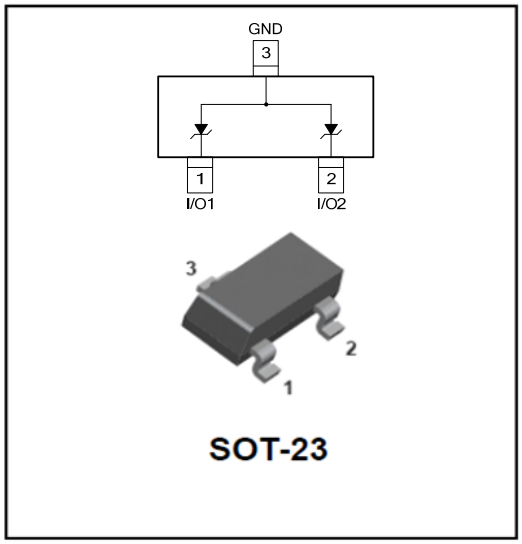
2-Line, Uni-directional, Transient Voltage Suppressor

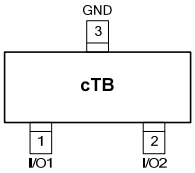


Features

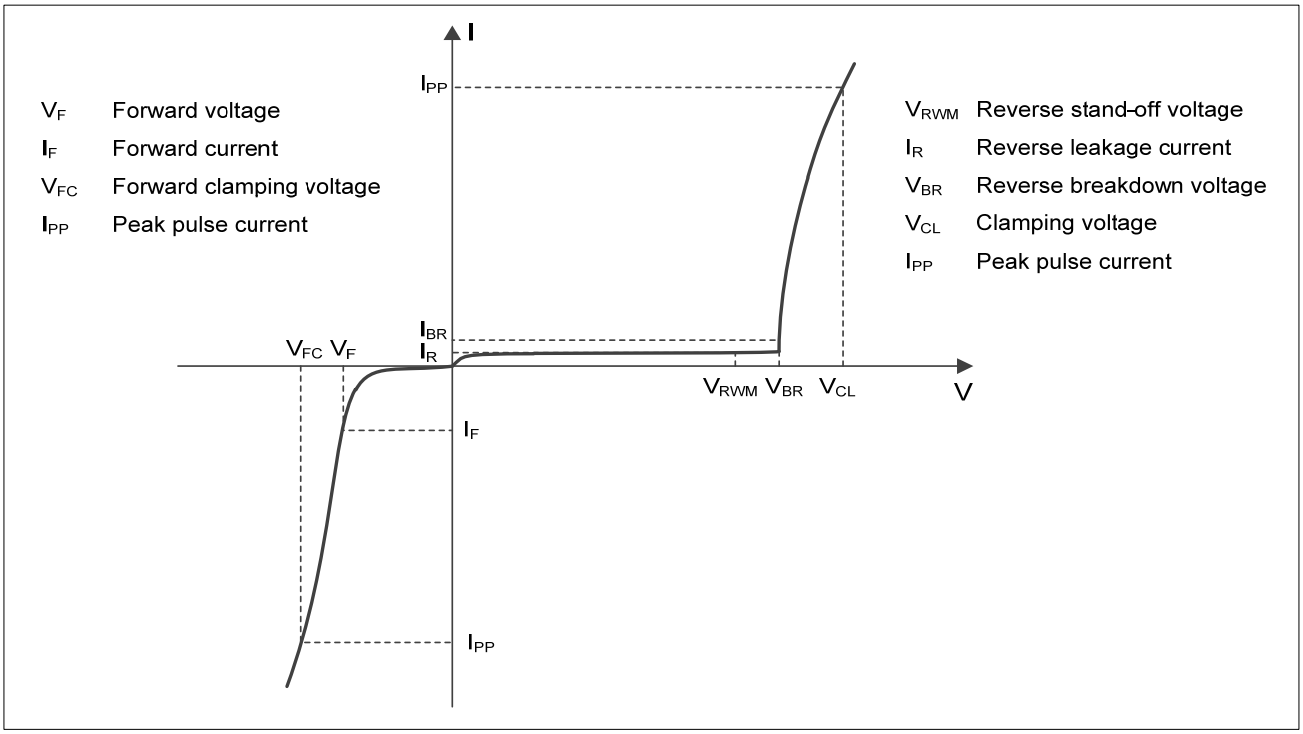
- Stand-off voltage: 12V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-4 (EFT): 80A (5/50ns)
  IEC61000-4-5(surge): 25A (8/20μs)
- Ultra-low capacitance: C_J =90pF typ.
- Low leakage current
- Low clamping voltage: V_{CL} = 1V typ. @ I_{PP} = 16A (TLP)
- Solid-state silicon technology

Mechanical Data

- **Package**: SOT-23
- **Terminals**: Tin plated leads, solderabl per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:**



■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	650	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	25	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T_J	125	℃
Operating temperature	T_{OP}	-40~85	℃
Storage temperature	T_{STG}	-55~150	℃

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				12
Reverse leakage current	I_R	nA	V_{RWM} = 12V			100
Reverse breakdown voltage	$V_{(BR)}$	V	I_T = 1mA	13.2	13.6	17
Forward voltage	V_F	V	I_T = 20mA	0.45		1.25
Clamping voltage [1]	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		17	
Dynamic resistance [1]	R_{DYN}	Ω			0.35	
Clamping voltage [2]	V_{CL}	V	V_{ESD} = 8kV		17	
Clamping voltage [3]	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs			16
		V	I_{PP} =25A, t_p = 8/20μs			26
Junction capacitance	CJ	pF	V_R = 0V, f = 1MHz		90	110
			V_R = 2.5V, f = 1MHz		80	100

Notes:

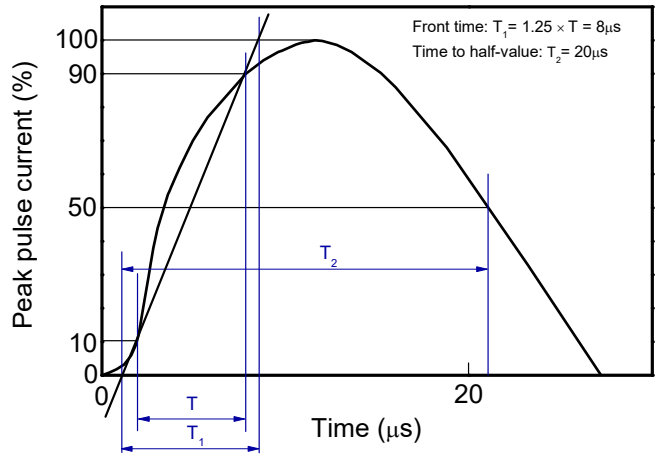
1) TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
2) Contact discharge mode, according to IEC61000-4-2.
3) Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

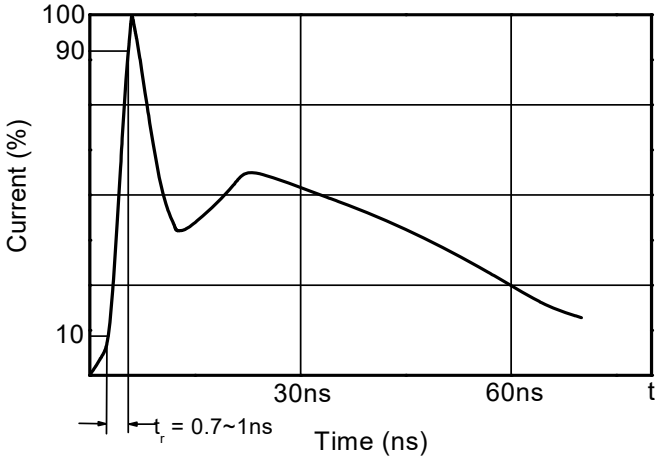
PREFERED P/N	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD12VE	3000	30000	120000	7 reel

■ Characteristics (Typical)

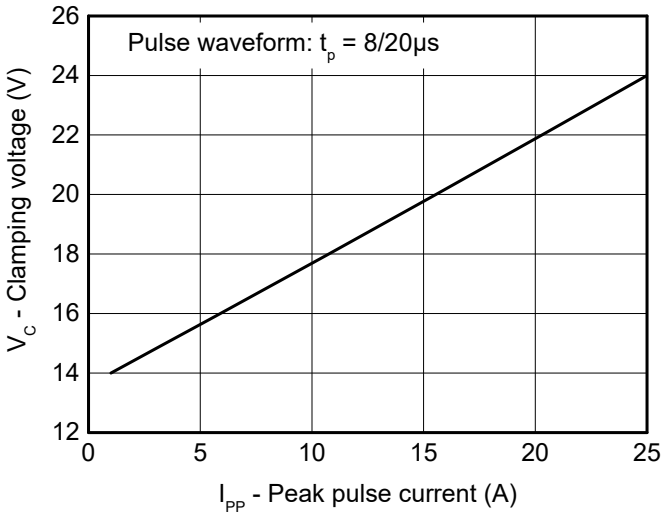
8/20μs waveform per IEC61000-4-5



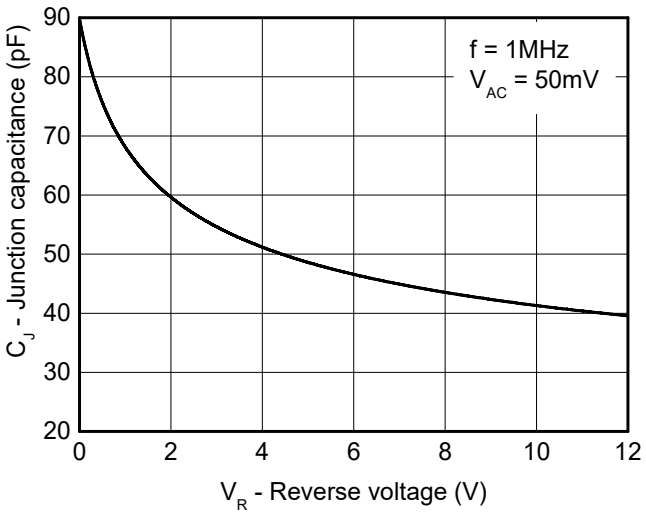
Contact discharge current waveform per IEC61000-4-2



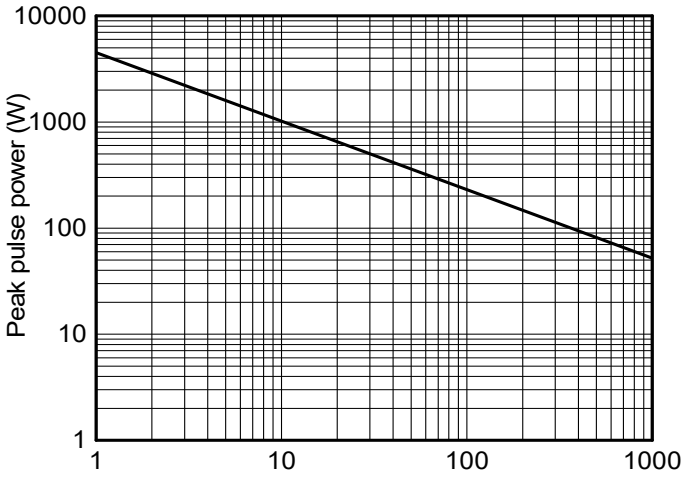
Clamping voltage vs. Peak pulse current



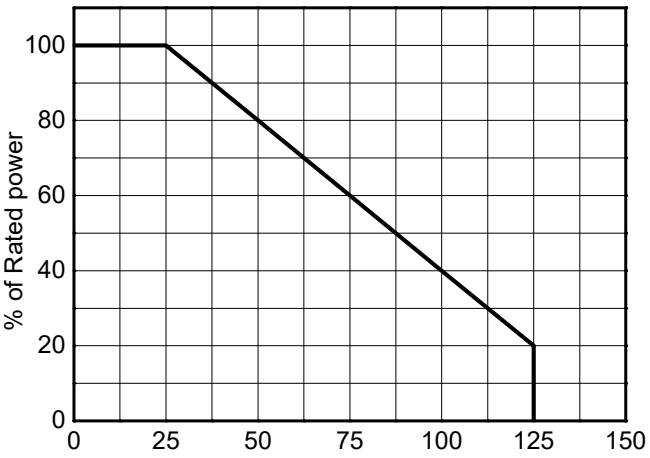
Capacitance vs. Reverse voltage



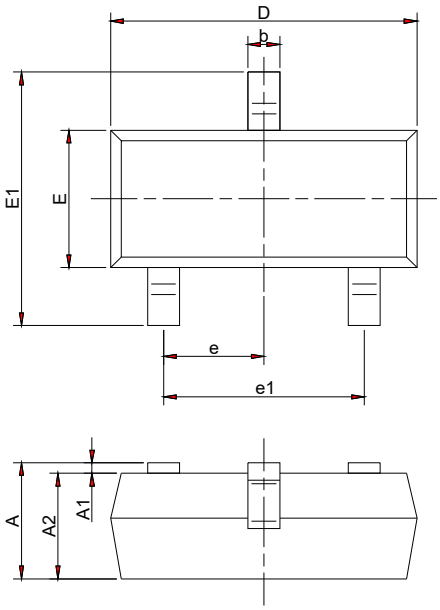
Non-repetitive peak pulse power vs. Pulse time

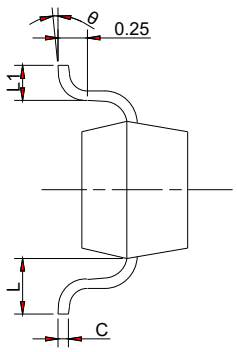


Power derating vs. Ambient temperature



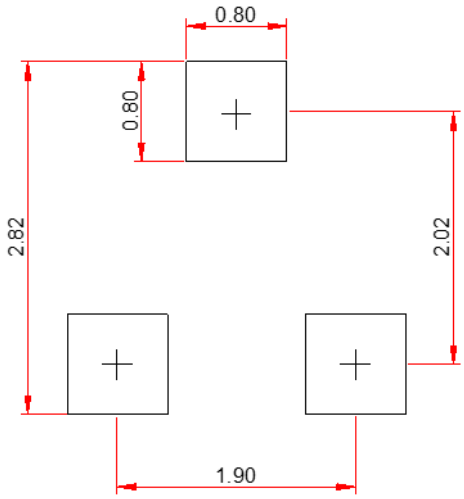
■ Outline Dimensions





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	0.080	-	0.150
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
θ	0°	-	8°

■ Soldering Footprint



Notes:
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

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