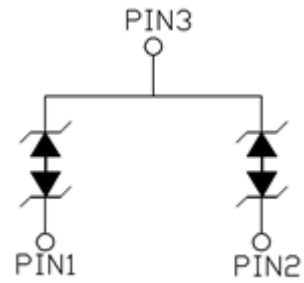
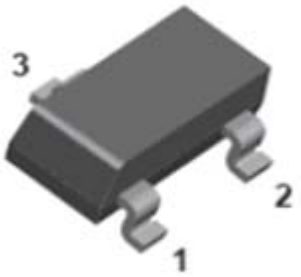
2-Line, Bi-directional, Transient Voltage Suppressor





SOT-23

Features

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-5(surge): 8A (8/20μs)
- Low leakage current
- Low clamping voltage
- Low clamping voltage:

V_{CL} = 9V typ. @ IPP = 16A (TLP)

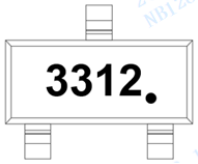
- RoHS Compliant

Applications

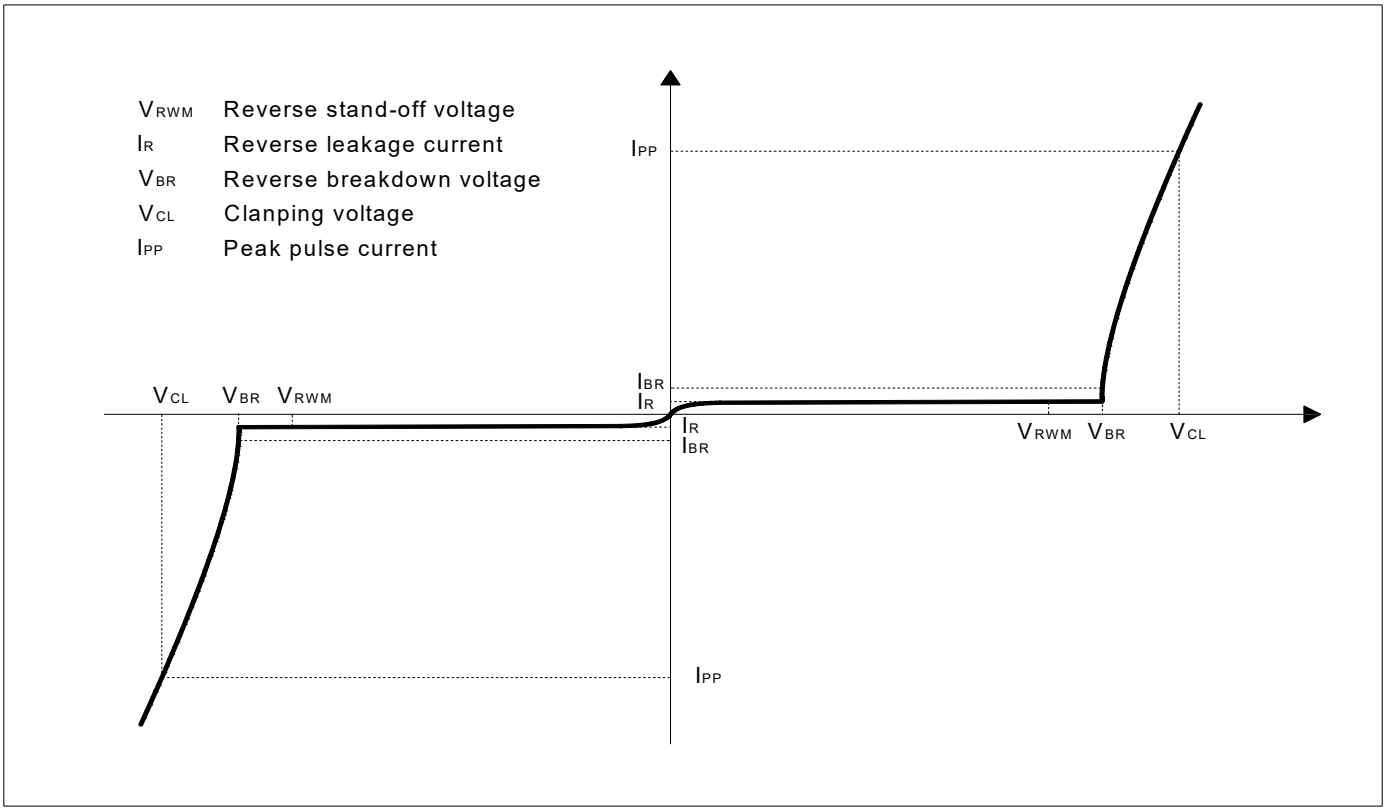
- Cellular handsets
- Tablets
- Laptops
- Network communication devices
- Other portable devices

Mechanical Data

- Package: SOT-23
- Case Material: “Green” Molding Compound
- Marking Information: See Below



■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	80	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	10	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±8	
Junction temperature	T_J	125	℃
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				3.3
Reverse leakage current	I_R	uA	V_{RWM} = 3.3V,			1
Reverse breakdown voltage	$V_{(BR)}$	V	I_T = 1mA,	3.5		
Clamping voltage	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs			6
		V	I_{PP} = 8A, t_p = 8/20μs			10
Junction capacitance	CJ	pF	V_R = 0V, f = 1MHz			20

Notes:

(1). TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

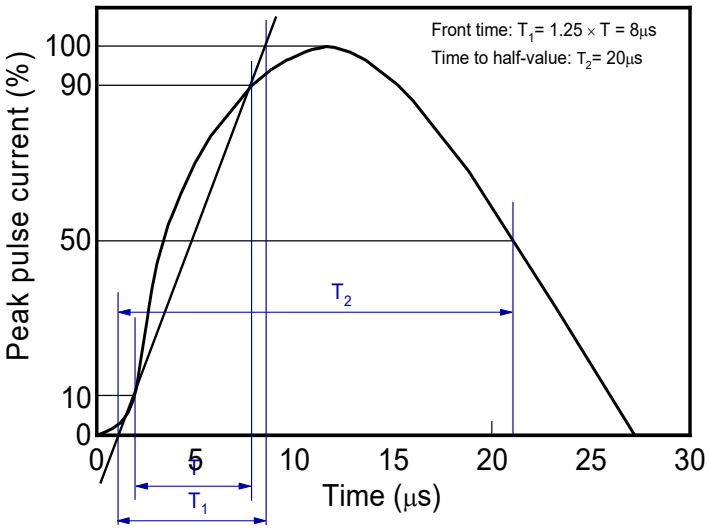
(3). Non-repetitive current pulse, according to IEC61000-4-5

■Ordering Information (Example)

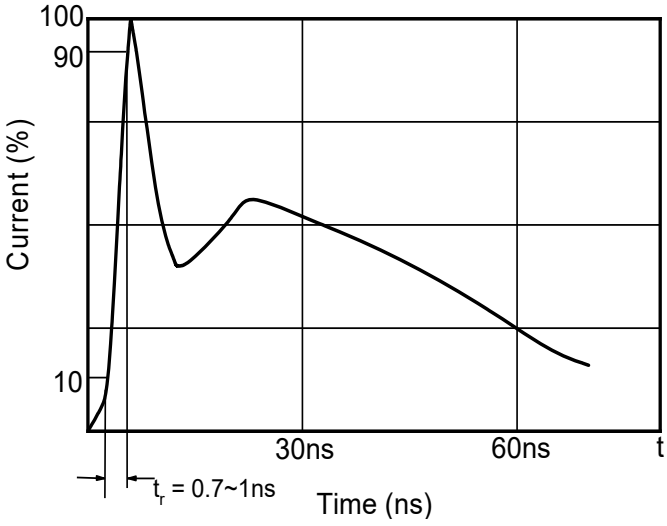
PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD3312EB	F2	Approximate 8	3000	30000	120000	7 reel

■ Characteristics (Typical)

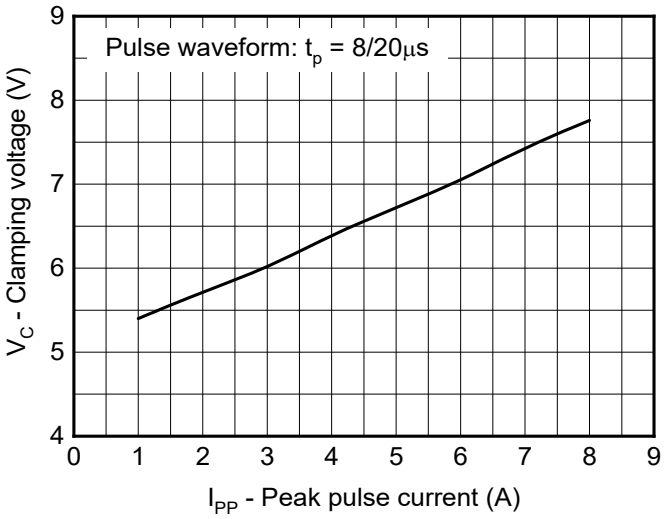
8/20μs waveform per IEC61000-4-5



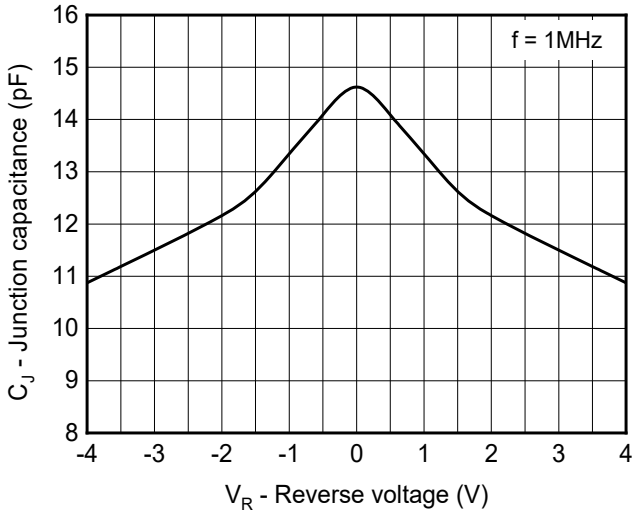
Contact discharge current waveform per IEC61000-4-2



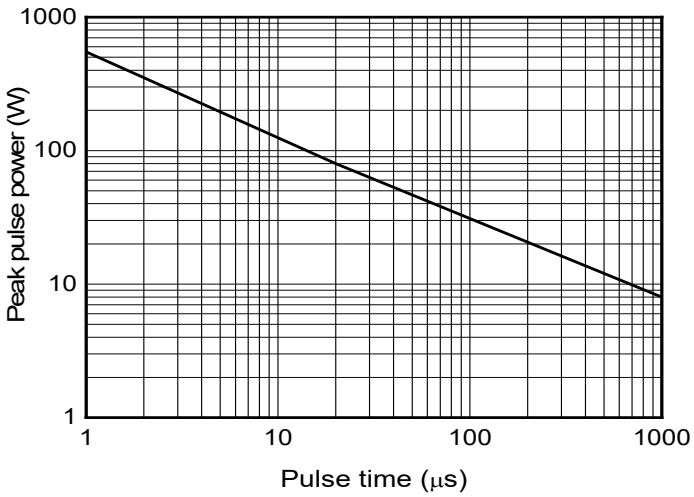
Clamping voltage vs. Peak pulse current



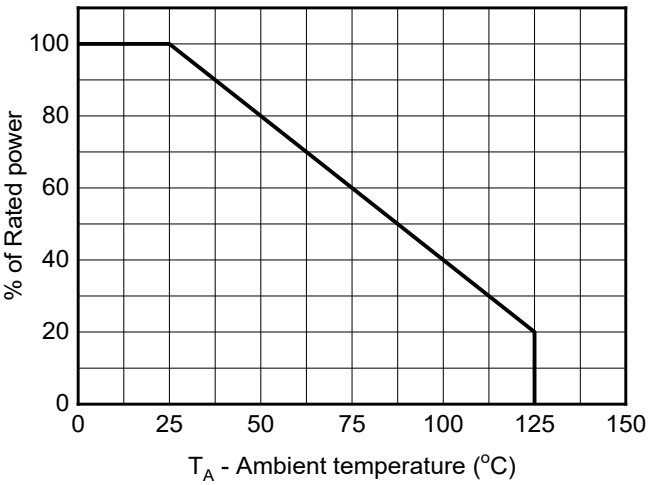
Capacitance vs. Reverse voltage



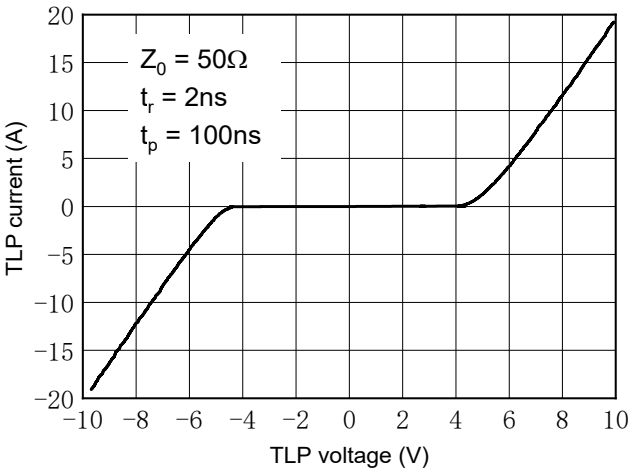
Non-repetitive peak pulse power vs. Pulse time



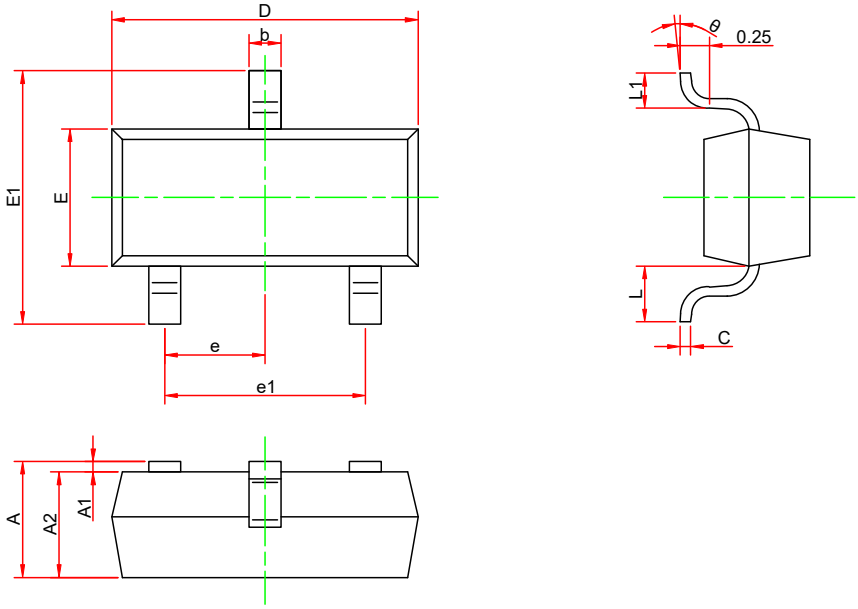
Power derating vs. Ambient temperature



TLP Measurement

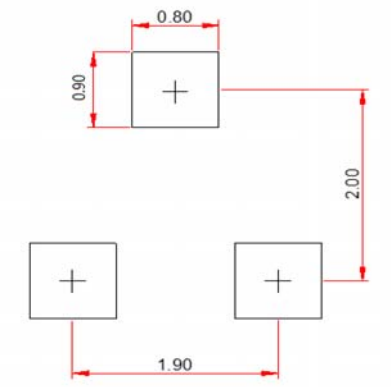


■ Outline Dimensions



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
θ	0°	-	8°

■ Soldering Footprint



Unit:mm

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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