



Discription

The BV03C protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



SOD-323

Features

- ★ Ultra Low Capacitance 1 pF(Typ)
- ★ 300W peak pulse power (8/20uS)
- ★ Working Voltage 3.3V
- ★ Low leakage current nA Level
- ★ Complies with following standards
 - IEC 61000-4-2(ESD) immunity test :
 - Air discharge : $\pm 10\text{KV}$
 - Contact discharge : $\pm 15\text{KV}$
 - IEC61000-4-5 (Lightning) 20A (8/20uS)
- ★ RoHS compliant



Circuit Diagram

Ordering information

Product ID	Pack	Qty(PCS)
BV03C	SOD-323	3000

Absolute Ratings ($T_{\text{amb}}=25^{\circ}\text{C}$)

Absolute Ratings (T _{amb} = 25 °C)			
Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (t _p = 8/20 μ s)	400	W
T _L	Maximum lead temperature for soldering during 10s	260	°C
T _{stg}	Storage Temperature Range	-55 to +155	°C
T _{op}	Operating Temperature Range	-40 to +125	°C
T _j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	± 10 ± 15	KV

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0*0.75*0.62 in.



Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	C (pF)	V_C (V) @ $I_{PP} = 20$ A (Note 3)	V_C
Device	Max	Max	Min	mA	Typ	Max	Per IEC61000-4-2 (Note 4)
BV03C	3.3	1.0	5.4	1.0	1	20	Figures 1 and 2 See Below

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

3. Surge current waveform per Figure 5.

4. For test procedure see Figures 3 and 4.

Typical Performance Characteristics

($T_A=25^\circ\text{C}$ unless otherwise Specified)

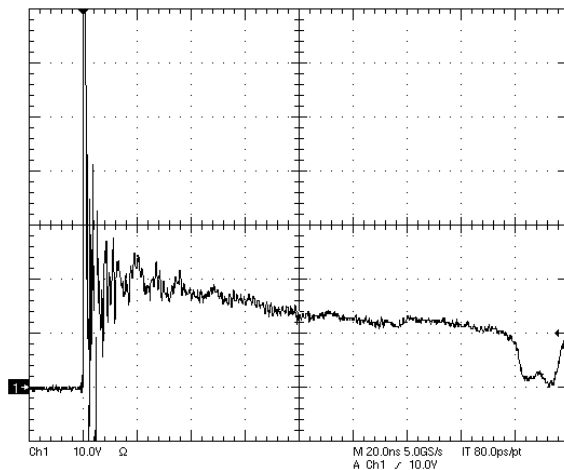


Figure 1. ESD Clamping Voltage Screenshot
Positive 8 kV Contact per IEC61000-4-2

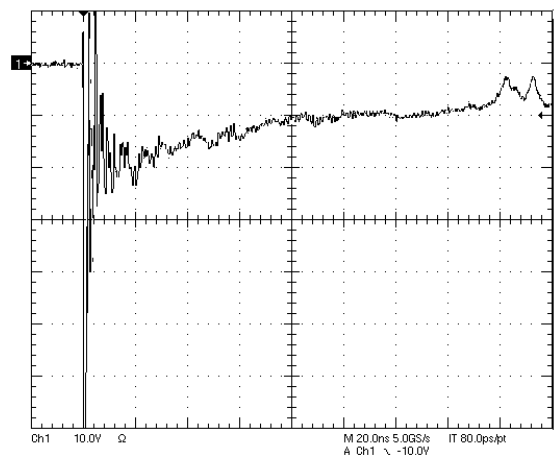


Figure 2. ESD Clamping Voltage Screenshot
Negative 8 kV Contact per IEC61000-4-2

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

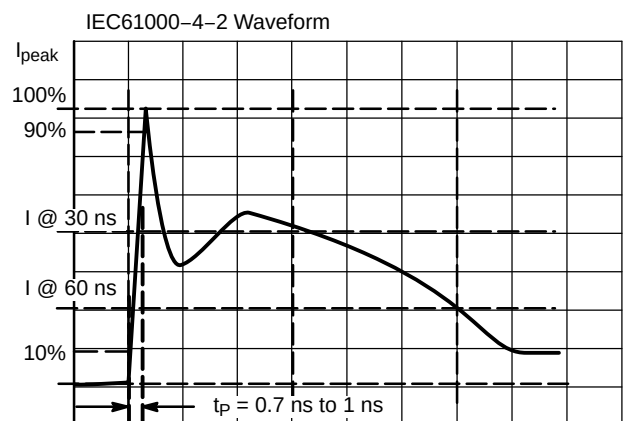
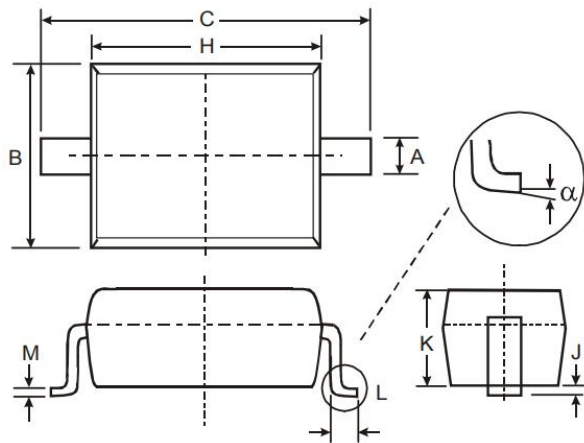


Figure 3. IEC61000-4-2 Spec



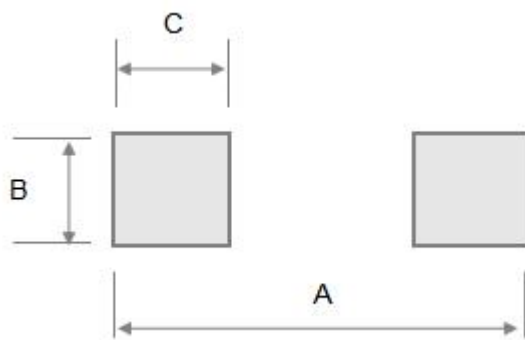
Package Outline Dimensions

SOD-323



Symbol	Dimensions	
	Min	Max
A	0.25	0.40
B	1.20	1.40
C	2.35	2.75
H	1.50	1.80
J	0.01	0.15
K	0.75	1.05
L	0.20	0.40
M	0.08	0.25
α	0°	8°

Soldering Footprint (mm)



Symbol	Dimensions
A	3.20
B	0.80
C	0.80



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