



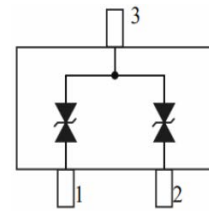
## Discription

XBP1008-G is an ultra-low capacitance Transient voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 1.5pF (IO to I/O) only, XBP1008-G is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2(ESD), Level 4(+15kV air, +8kV contact discharge), IEC 61000-4-4(electrical fast transient- EFT) (40A, 5/50ns), very fast charged device model(CDM)ESD and cable discharge event (CDE), etc.

XBP1008-G uses small SOT-23 package. Each XBP1008-G device can protect two high-speed data lines. The combined features of low capacitance, small size and high ESD robustness make XBP1008-G ideal for high-speed data port and high-frequency line applications. The low clamping voltage of the XBP1008-G guarantees a minimum stress on the protected IC.



SOT-23



Circuit Diagram

## Features

- ★ Transient protection for high-speed data lines  
IEC 61000-4-2(ESD)  $\pm 15\text{kV}$  (Contact)  
 $\pm 8\text{kV}$  (Air)  
IEC 61000-4-4(EFT) 40A (5/50 ns)  
Cable Discharge Event (CDE)
- ★ Protects two data lines
- ★ Low capacitance: 1.5pF Typical (I/O-I/O)
- ★ Low clamping voltage
- ★ Low leakage current

## Applications

- ★ Serial ATA
- ★ Desktops, Servers and Notebooks
- ★ PCI Express
- ★ MDDI Ports
- ★ USB Data Line Protection
- ★ Digital Visual Interfaces



## Ordering information

Product ID	Pack	Qty(PCS)
XBP1008-G	SOT-23	3000

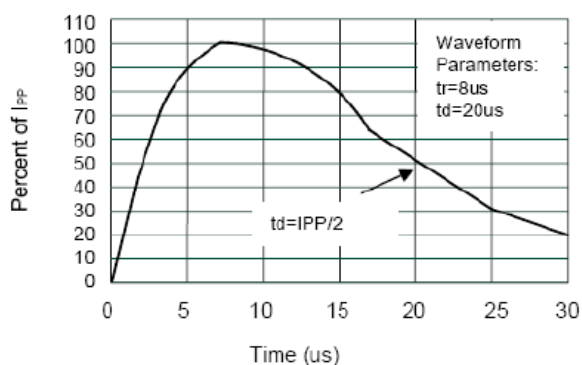
## Absolute Ratings( $T_{amb} = 25^{\circ}\text{C}$ )

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power ( $t_p = 8/20 \mu s$ )	28	W
$T_{stg}$	Storage Temperature Range	-55 to +155	$^{\circ}\text{C}$
	IEC61000-4-2 (ESD) air discharge contact discharge	$\pm 15$ $\pm 8$	KV

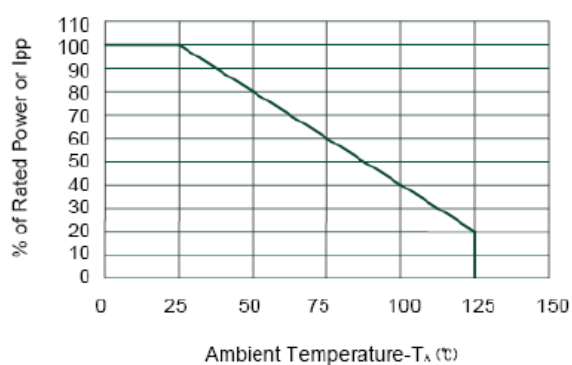
## Electrical Characteristics

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage	Any I/O pin to GND			5.0	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$ Any I/O pin to GND	5.6		9.4	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5.0\text{V}$ Any I/O pin to GND			1.0	$\mu\text{A}$
$V_C$	Clamping Voltage	$I_{RWM} = 1\text{A}$ , $t_p = 8/20\mu s$ Any I/O pin to GND			10.5	V
		$I_{RWM} = 2\text{A}$ , $t_p = 8/20\mu s$ Any I/O pin to GND			14	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ Any I/O pin to GND		3.0	4.0	pF
$C_J$	Junction Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ Any I/O pin to I/O		1.5	2.5	pF

## Typical Characteristics



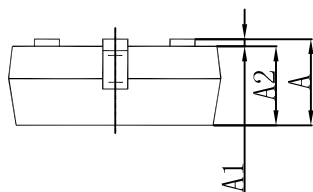
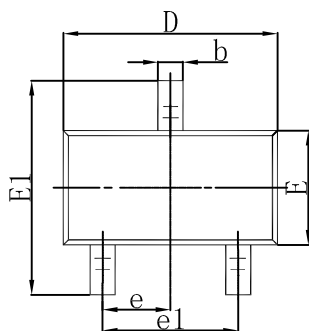
Pulse Waveform



Power Derating Curve



## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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