

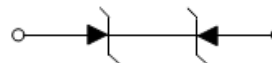
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

SBESD0501CL-C is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.25pF, SBESD0501CL-C 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 ($\pm 20\text{kV}$ air, $\pm 20\text{kV}$ contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

Each SBESD0501CL-C device can protect one high-speed data line. It offers system designers flexibility to protect single data line where space is a premium concern. The combined features of low capacitance, ultra-small size and high ESD robustness make SBESD0501CL-C ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.

DFN1006



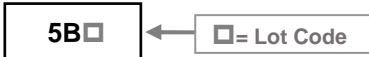
FEATURES

- Low Capacitance
- Low Leakage Current
- Low Clamping Voltage

APPLICATIONS

- Serial ATA
- Desktops, Servers and Notebooks
- Cellular Phones
- MDDI Ports
- USB Data Line Protection
- Display Ports
- Digital Visual Interfaces (DVI)

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN1006	10K	7 inch

ORDER INFORMATION

Part Number	Type
SBESD0501CL-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
IEC 61000-4-2	Air Discharge	V _{ESD}	±20	kV
	Contact Discharge			
Peak Pulse Power @tp=8/20µs		P _{PP}	100	W
Operating Temperature		T _{OPT}	-55~125	°C
Storage Temperature		T _{STG}	-55~150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Working Voltage	V _{RWM}	-	-	5	V	
Reverse Breakdown Voltage	V _{BR}	6	-	-	V	I _T =1mA
Reverse Leakage Current	I _R	-	-	100	nA	V _{RWM} =5V
Clamping Voltage	V _C	-	-	13	V	I _{PP} =1A, tp=8/20µs
		-	18	25		I _{PP} =4A, tp=8/20µs
TLP Clamping Voltage	V _{CTL}	-	26	-	V	I _{PP} =8A, IEC 61000-4-2(±4 kV Contact, ±8 kV Air)
		-	38	-		I _{PP} =16A, IEC 61000-4-2(±8kV Contact, ±16kV Air)
Junction Capacitance	C _J	-	0.25	0.4	pF	V _R =0, f=1MHz

TYPICAL CHARACTERISTICS

Fig 1 Power Derating Curve

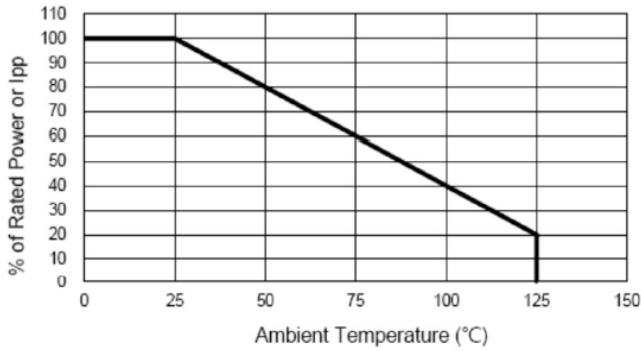


Fig 2 Clamping Voltage vs Peak Pulse Current

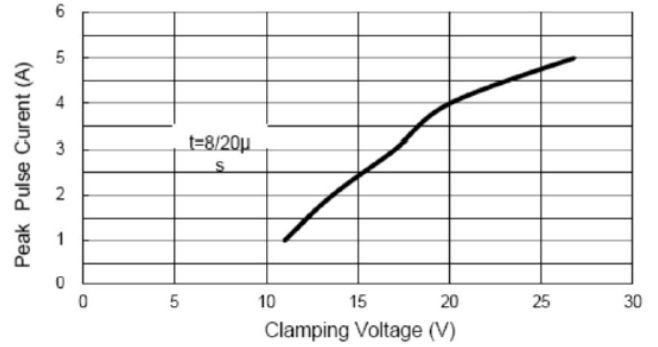


Fig 3 Voltage Sweeping

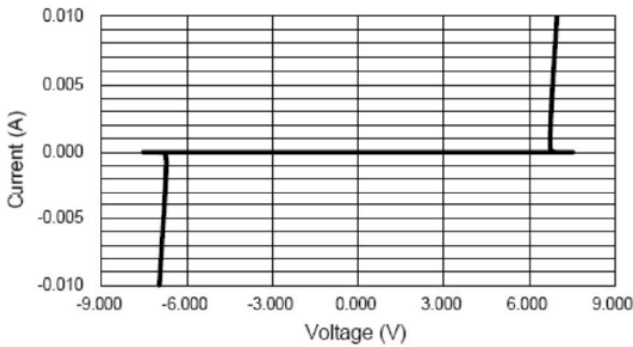


Fig 4 Voltage vs Capacitance

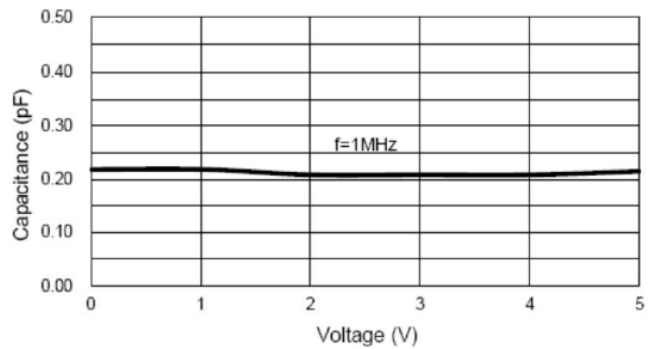


Fig 5 ESD Clamping (+8kV Contact per IEC 61000-4-2)

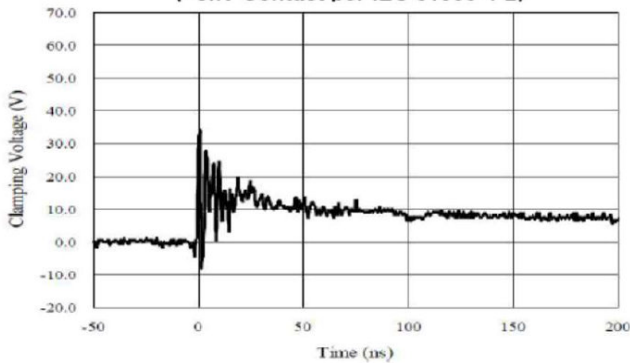


Fig 6 ESD Clamping (-8kV Contact per IEC 61000-4-2)

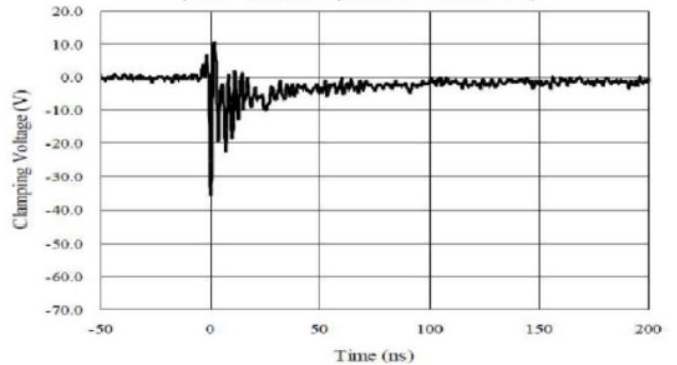
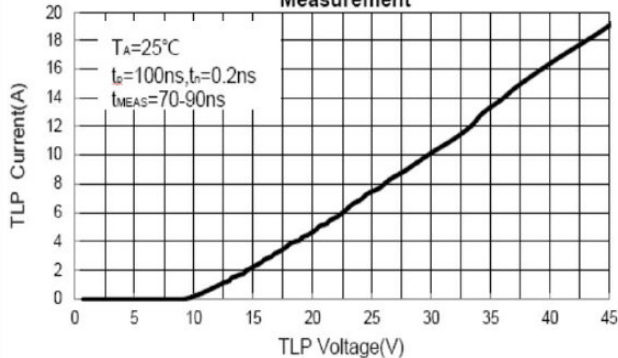
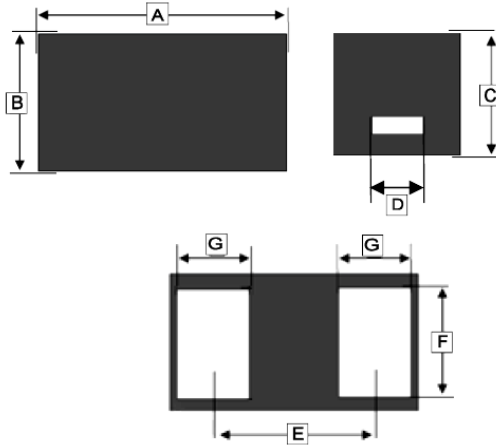


Fig7 Transmission Line Pulsing (TLP) Measurement



PACKAGE OUTLINE DIMENSIONS

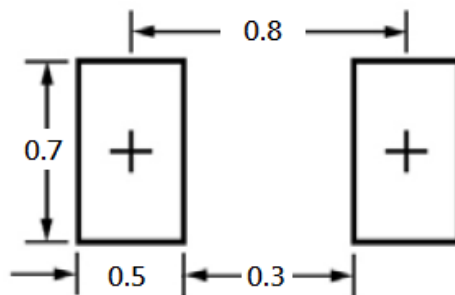
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REF.	Millimeter	
	Min.	Max.
A	0.95	1.075
B	0.55	0.675
C	0.40	0.55
D	0.20 TYP.	
E	0.64 BSC.	
F	0.45	0.55
G	0.20	0.30

MOUNTING PAD LAYOUT

DFN1006



*Dimensions in millimeters