Elektronische Bauelemente

SBESD05C-C

150W, 5V

Bi-Direction ESD Protection Diode

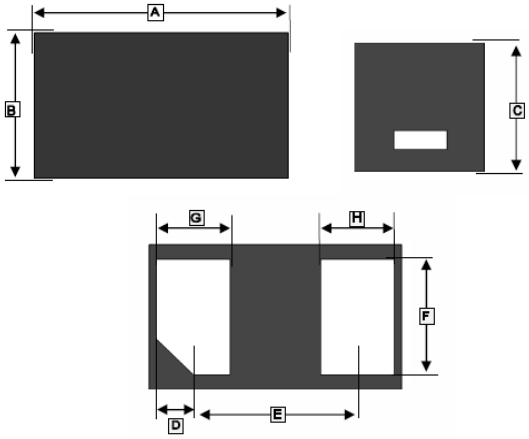
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

SBESD05C-C is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With typical capacitance of 10pF only, it 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, IEC 61000-4-4 (EFT), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

It uses ultra-small DFN1006 package. Each device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

DFN1006



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.90	1.10	E	0.65 BSC.	
B	0.50	0.70	F	0.25	0.60
C	0.32	0.55	G	0.15	0.40
D	0.10 TYP.		H	0.15	0.40

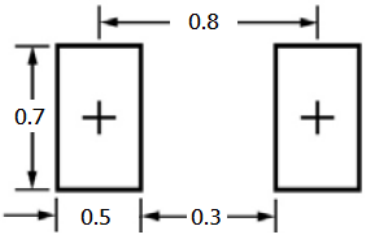
FEATURES

- Transient Protection for High-Speed Data Lines
- IEC61000-4-2 Level 4 ESD Protection
- Low Capacitance
- Low Clamping Voltage
- Low Leakage Current
- Flammability Rating: UL 94V-0
- MSL3

MARKING

FOC

Mounting Pad Layout



*Dimensions in millimeters

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN1006	10K	7 inch

ORDER INFORMATION

Part Number	Type
SBESD05C-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted.)

Parameter		Symbol	Ratings	Unit
IEC 61000-4-2 ESD Voltage	Air	V_{ESD}	±30	kV
	Contact		±30	
Peak Pulse Power		P_{PP}	150	W
Maximum Lead Solder Temperature (10 Second Duration)		T_L	260	℃
Operating Junction Temperature Range		T_J	-40~125	
Storage Temperature Range		T_{STG}	-40~150	

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted.)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	V_{RWM}	-	-	5	V	
Breakdown Voltage	$V_{(BR)}$	5.6	-	7.8	V	I_T=1mA
Clamping Voltage	V_C	-	-	11.6	V	I_{PP}=5A, tp=8/20μs
		-	-	16		$I_{PP(MAX)}$=9.4A, tp=8/20μs
Reverse Leakage Current	I_R	-	-	1	μA	V_{RWM}=5V
Junction Capacitance	C_J	-	10	-	pF	V_R=0V, f=1MHz

TYPICAL CHARACTERISTICS

Fig 1 8/20μs Waveform per IEC61000-4-5

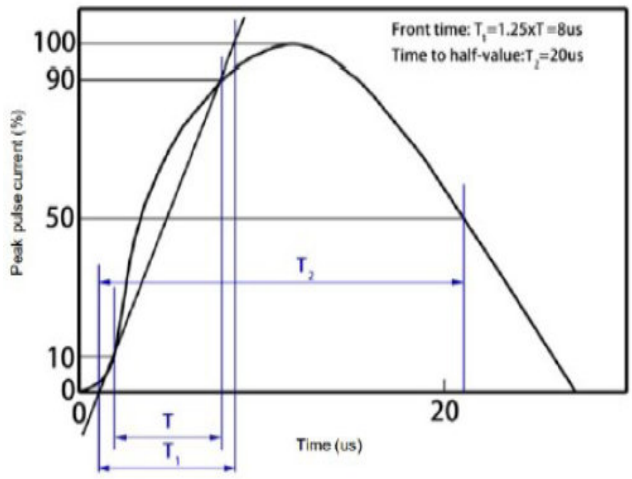


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

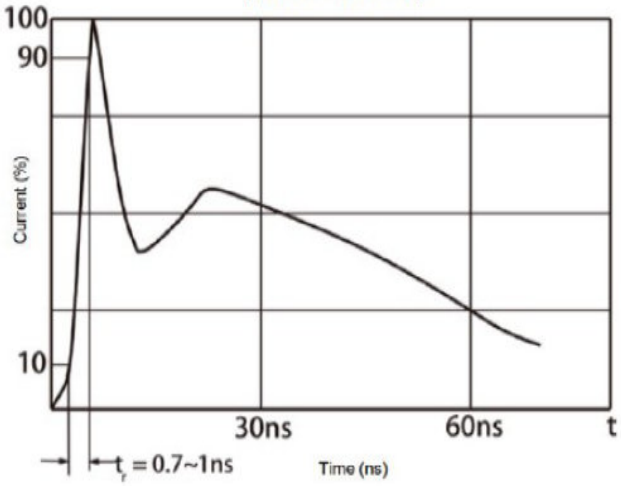


Fig 3 Power Derating Curve

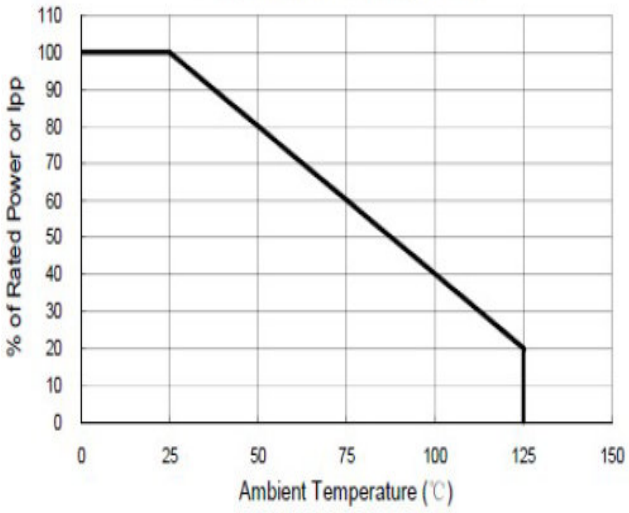


Fig 4 Voltage vs Capacitance

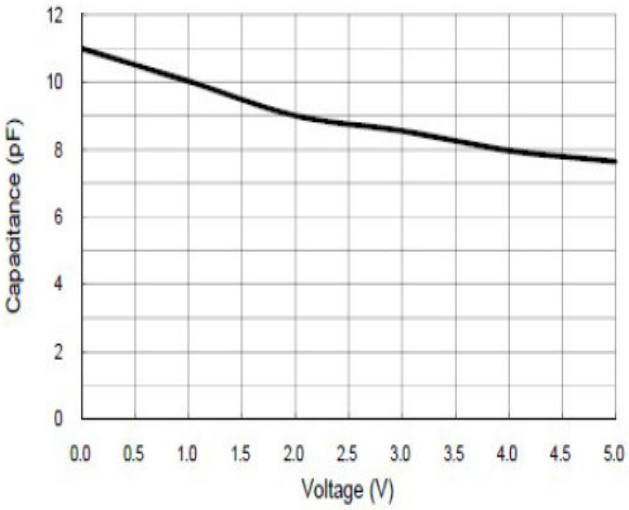


Fig 5 Voltage Sweeping

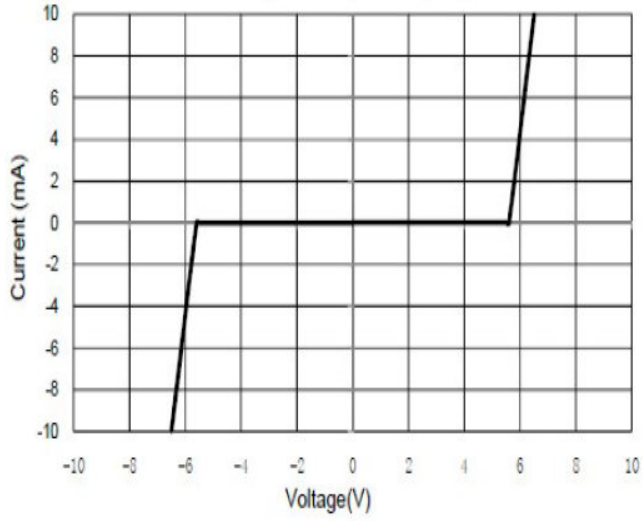


Fig 6 Clamping Voltage vs Peak Pulse Current