Elektronische Bauelemente

SBESD5411N

70W, 7V

Bi-directional Transient Voltage Suppressors

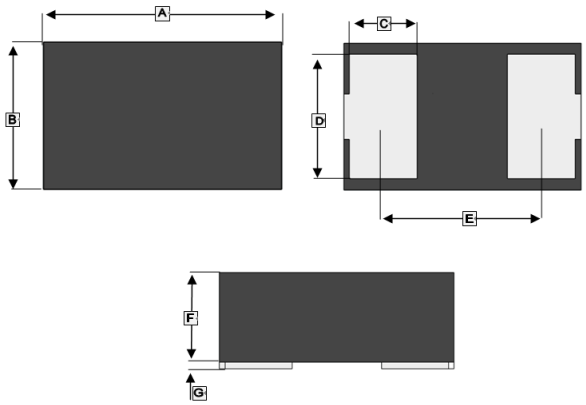
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

SBESD5411N is a bi-directional Transient Voltage Suppressor (TVS). It is specifically designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and lighting.

SBESD5411N may be used to provide ESD protection up to ±30kV (contact and air discharge) according to IEC 61000-4-2 and withstand peak pulse current up to 6A (8/20μs) according to IEC 61000-4-5.

DFN1006-2L



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.95	1.05	E	0.65 TYP.	
B	0.55	0.65	F	0.3	0.4
C	0.2	0.3	G	0.00	0.05
D	0.45	0.55			

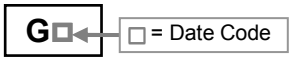
FEATURES

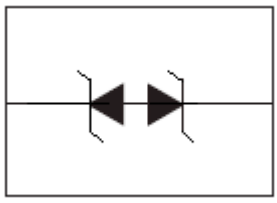
- Low clamping voltage
- Ultra-low leakage current
- Solid-state silicon technology

APPLICATIONS

- Tablets
- Laptops
- Other portable devices

MARKING





PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN1006-2L	10K	7 inch

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

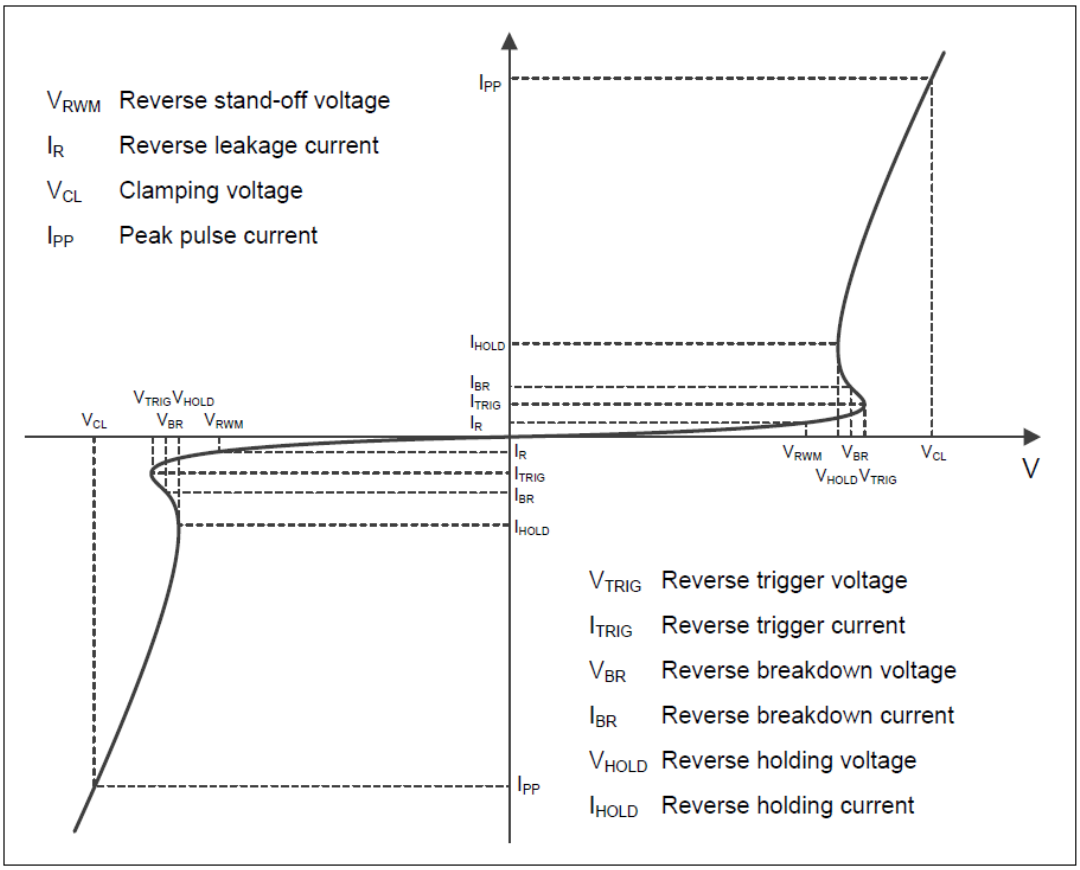
Rating		Symbol	Value	Unit
IEC 61000-4-2	Air discharge	V_{ESD}	±30	kV
	Contact discharge		±30	
Peak Pulse Power@ tp=8/20μs		P_{PK}	70	W
Peak Pulse Current@ tp=8/20μs		I_{PP}	6	A
Operating Temperature		T_{OP}	-40~85	°C
Lead Temperature		T_L	260	°C
Junction and Storage Temperature Range		T_J, T_{STG}	125, -55~150	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Maximum Reverse Working Voltage	V_{RWM}		-	-	7	V
Reverse Leakage Current	I_R	V_{RWM}=7V	-	5	100	nA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	7.2	-	10.5	V
Reverse Holding Voltage	V_{HOLD}	I_{HOLD}=50mA	7.2	-	10.5	V
Clamping Voltage [1]	V_C	I_{PP}=16A, tp=100ns	-	12	-	V
Clamping Voltage [2]	V_C	V_{ESD}=8kV	-	12	-	V
Clamping Voltage [3]	V_C	I_{PP}=1A, tp=8/20μs	-	-	10	V
		I_{PP}=6A, tp=8/20μs	-	-	12	V
Dynamic Resistance	R_{DYN}		-	0.24	-	Ω
Junction Capacitance	C_J	V_R=0, f=1MHz	-	17.5	22	pF
		V_R=7V, f=1MHz	-	11.5	16	

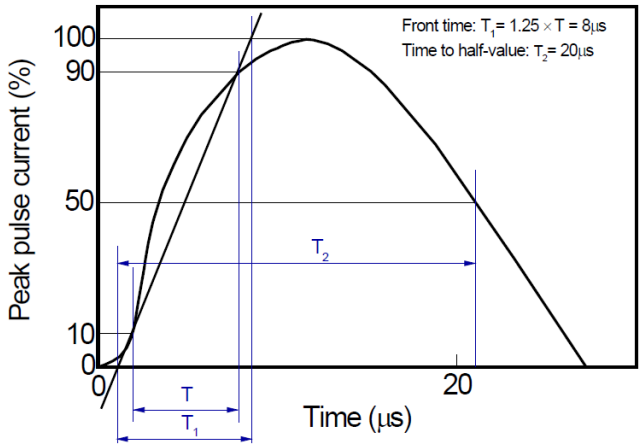
Notes:
1. TLP parameters: Z_0=50Ω, t_p=100ns, t_r=2ns, average window moves from 60ns to 80ns. R_{DYN} is calculated from 10A to 30A.
2. According to IEC61000-4-2, contact discharge mode.
3. According to IEC61000-4-5, non-repetitive pulse current.

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

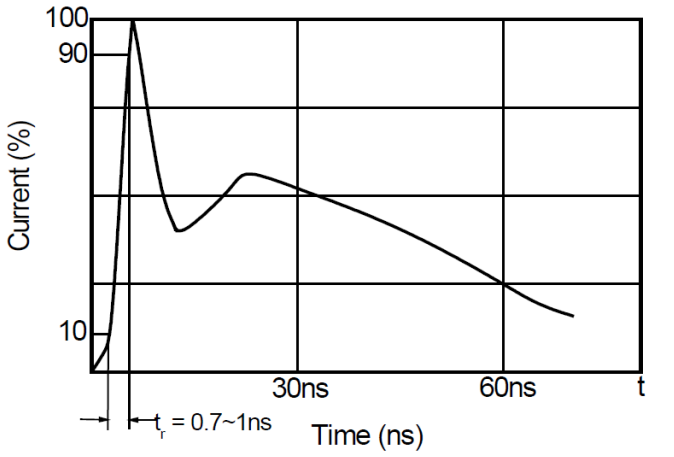


Definitions of electrical characteristics

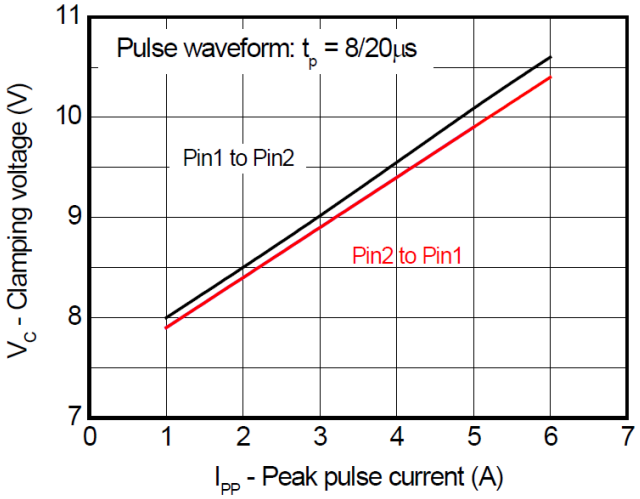
CHARACTERISTICS CURVES



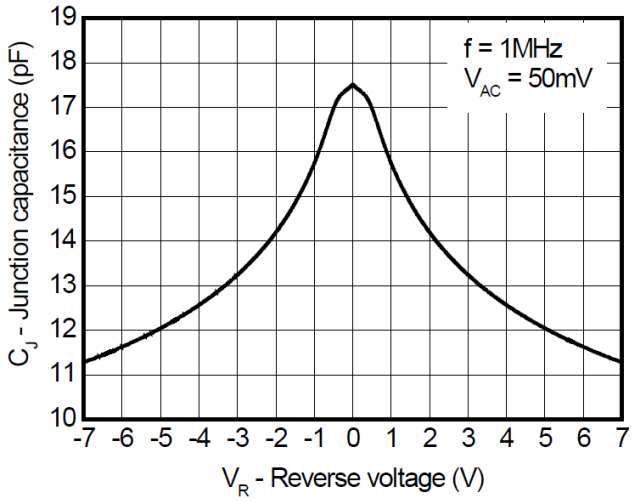
8/20μs waveform per IEC61000-4-5



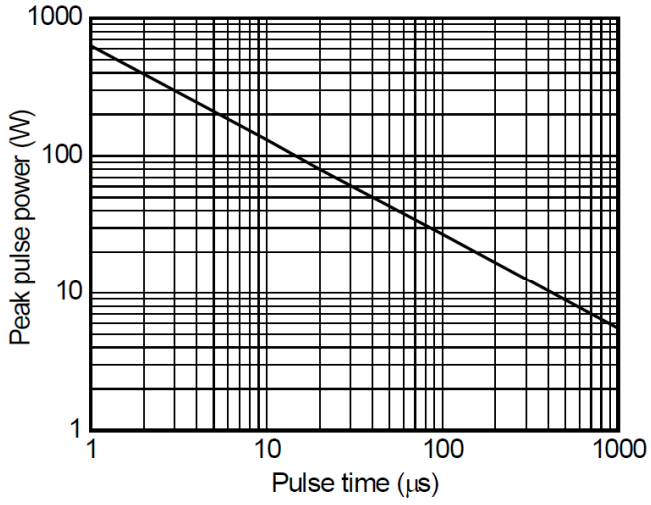
Contact discharge current waveform per IEC61000-4-2



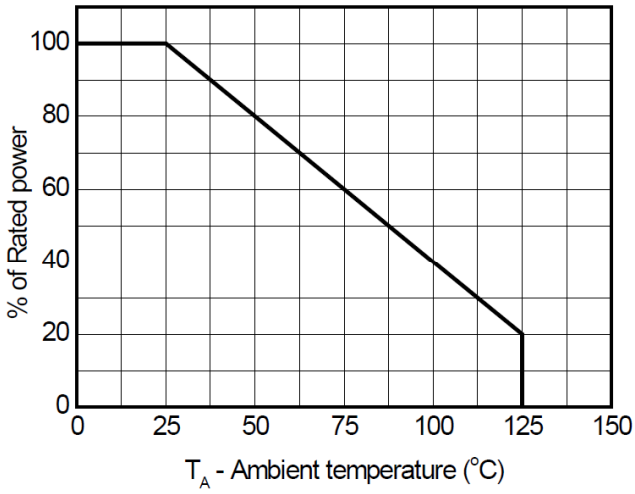
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

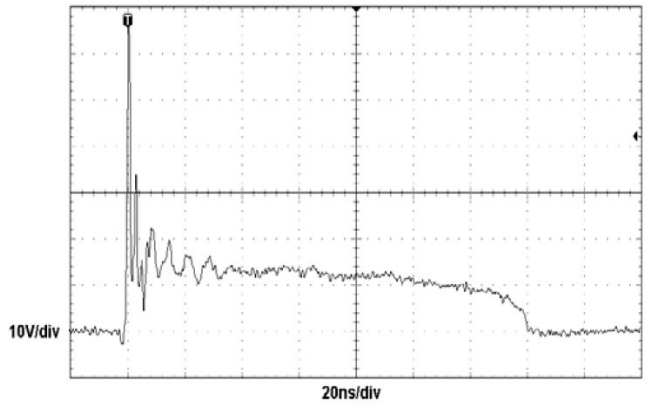


Non-repetitive peak pulse power vs. Pulse time

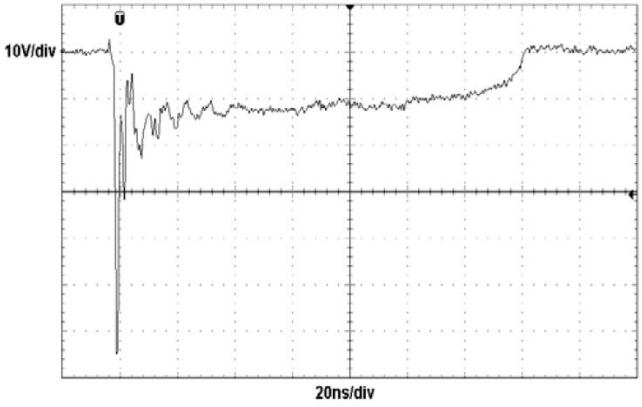


Power derating vs. Ambient temperature

CHARACTERISTICS CURVES



ESD clamping
(+8kV contact discharge per IEC61000-4-2)



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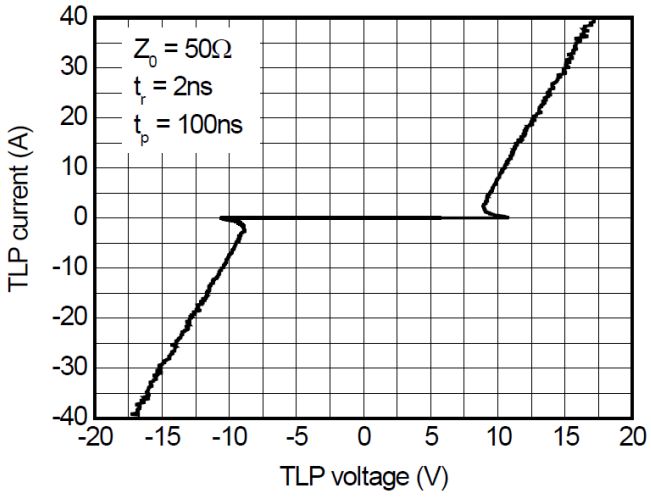

TLP Measurement