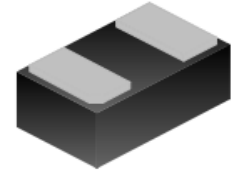


Transient Voltage Suppressors for ESD Protection

Description

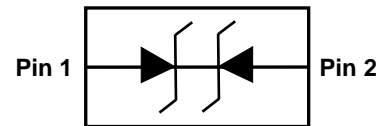
The SXESD8S18C protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



DFN1006-2L(Bottom View)

Feature

- 120W peak pulse power per line ($t_P = 8/20\mu s$)
- DFN1006-2L package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically < 1ns
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to IEC61000-4-2(ESD) $\pm 30KV$ (air), $\pm 30KV$ (contact); IEC61000-4-4 (EFT) 40A (5/50ns)



Circuit Diagram

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

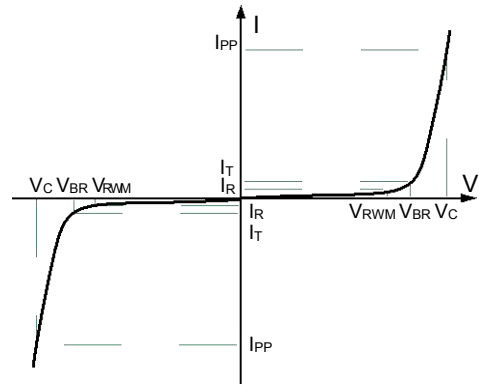
Mechanical Characteristics

- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- DFN1006-2L without plating

Transient Voltage Suppressors for ESD Protection

Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				18	V
Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$	19	22	24	V
Reverse Leakage Current	I_R	$V_{RWM} = 18\text{V}$ $T=25^\circ\text{C}$			0.3	μA
Clamping Voltage	V_C	$I_{PP}=3\text{A}$		24	27	V
Clamping Voltage	V_C	$I_{PP}=5\text{A}$		26	29	V
Junction Capacitance	C_j	$V_R=0\text{V}$ $f = 1\text{MHz}$		22		pF

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu\text{s}$)	P_{pp}	120	W
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{PP}	5	A
Operating Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STTh}	-55 to 150	$^\circ\text{C}$

Transient Voltage Suppressors for ESD Protection

Typical Characteristics

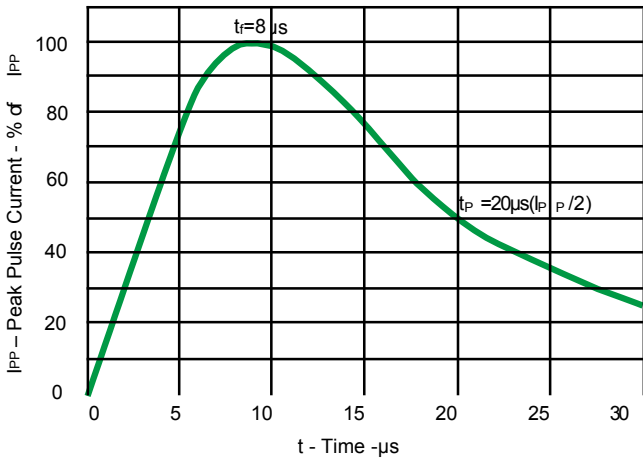


Fig 1. Pulse Waveform

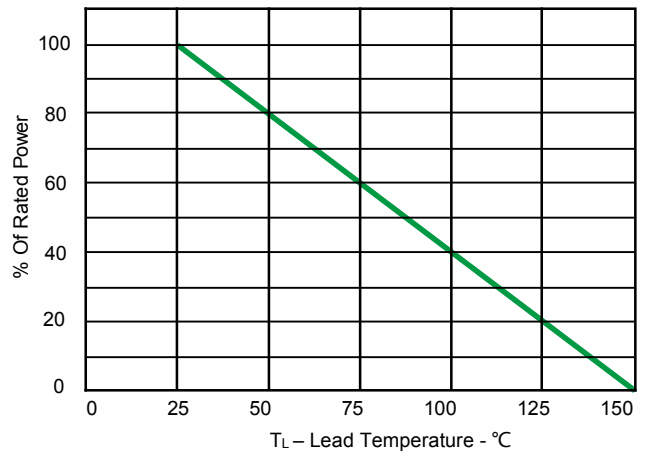


Fig 2. Power Derating Curve

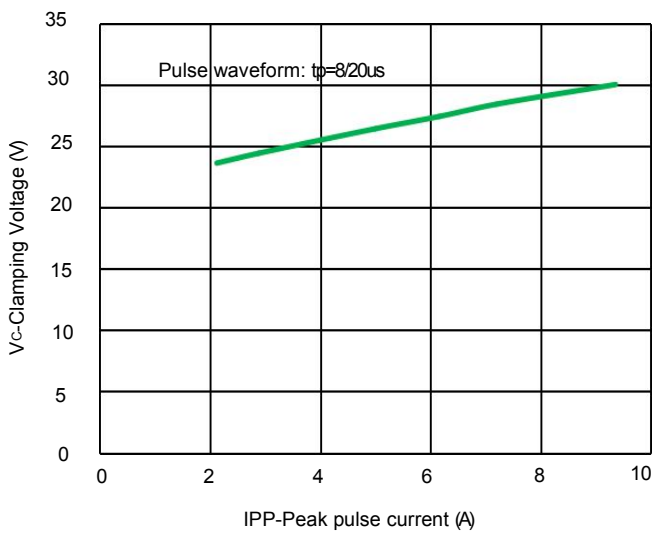


Fig 3. Clamping voltage vs. Peak pulse current

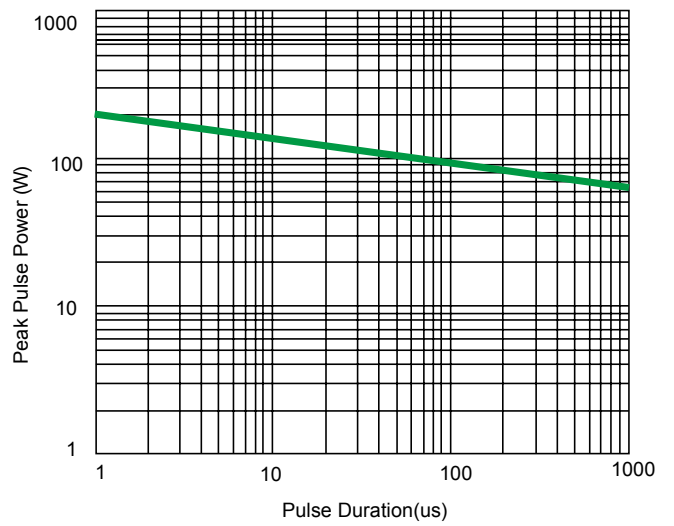
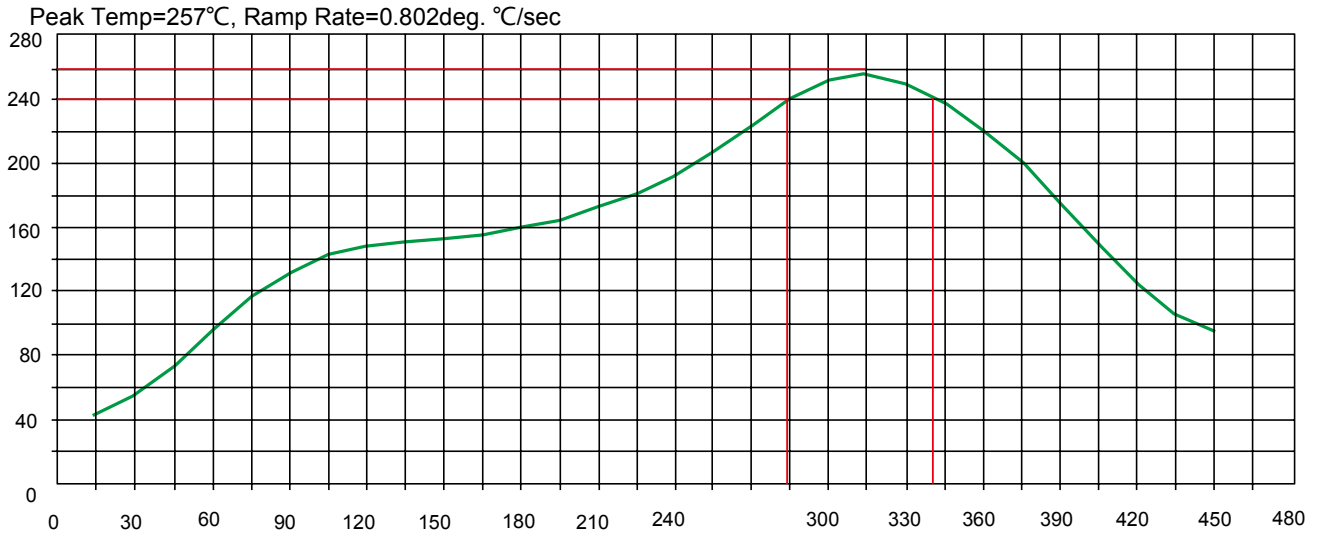


Fig 4. Non-Repetitive Peak Pulse Power vs. Pulse time

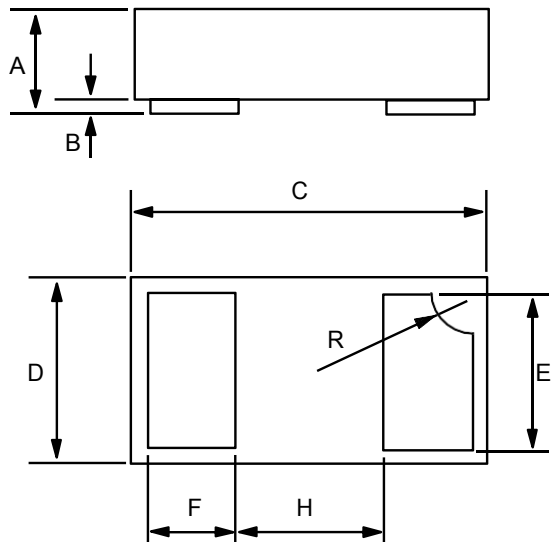
Transient Voltage Suppressors for ESD Protection

Solder Reflow Recommendation



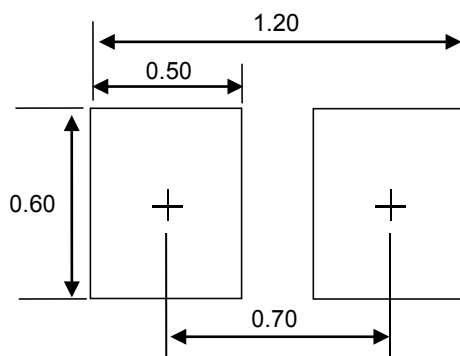
Transient Voltage Suppressors for ESD Protection

Product dimension (DFN1006-2L)



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.013	0.020	0.34	0.50
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15

Bottom View



Unit:mm

Suggested PCB Layout

Ordering information

Device	Package	Reel	Shipping
SXESD8S18C	DFN1006-2L (Pb-Free)	7"	10000 / Tape & Reel