DESCRIPTION

SLE5VFBN102 is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power line. With maximum capacitance of 12pF, SLE5VFBN102 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, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

SLE5VFBN102 uses ultra-small DFN1006 package. Each SLE5VFBN102 device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

FEATURES

- ✧Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±30kV (Air)
  ±30kV (Contact)
  IEC 61000-4-4 (EFT) 40A (5/50 ns)
  Cable Discharge Event (CDE)
- ✧Package optimized for high-speed lines
- ✧Ultra-small package (1.0mm×0.6mm×0.4mm)
- ✧Protects one data, control or power line
- ✧Low capacitance
- ✧Low leakage current
- ✧Low clamping voltage
- ✧Each I/O pin can withstand over 1000 ESD strikes for ±8kV contact discharge

MACHANICAL DATA

- ✧DFN1006 package
- ✧Flammability Rating: UL 94V-0
- ✧Packaging: Tape and Reel
- ✧High temperature soldering guaranteed: 260℃/10s
- ✧Reel size: 7 inch
- ✧MSL3

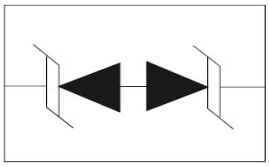
ORDERING INFORMATION

- ✧ Device: SLE5VFBN102
- ✧Package: DFN1006 (SOD882)
- ✧Marking:C
- ✧Material: RoHS compliant, Halogen free

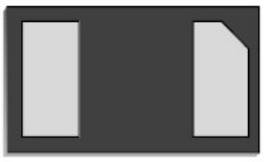
APPLICATIONS

- ✧Portable Electronics
- ✧Desktops, Servers and Notebooks
- ✧Cellular Phones
- ✧MP3 Ports
- ✧Digital Ports
- ✧Subscriber Identity Module (SIM) card

CIRCUIT DIAGRAM



PIN CONFIGURATION



ABSOLUTE MAXIMUM RATING			
Symbol	**Parameter**	**Value**	**Units**
P_{PP}	Peak Pulse Power (8/20μs)	105	W
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	kV
T_j	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)						
Symbol	**Parameter**	**Test Condition**	**Min**	**Typ**	**Max**	**Units**
$\mathbf{V_{RWM}}$	Reverse Stand-Off Voltage				5.0	V
$\mathbf{V_{BR}}$	Reverse Breakdown voltage	I_T=1mA	5.6			V
$\mathbf{I_R}$	Reverse leakage current.	V_{RWM}=5V			0.3	μA
$\mathbf{I_{PP}}$	Peak Pulse Current	t_P=8/20us			8	A
$\mathbf{V_C}$	Clamping Voltage	I_{PP}=1A, t_P=8/20us I_{PP}=8A, t_P=8/20us			8 15	V
$\mathbf{C_J}$	Junction Capacitance	V_R=0V,f=1MHz		12		pF

ELECTRICAL CHARACTERISTICS CURVE

Figure 1: Peak Pulse Power Vs Pulse Time

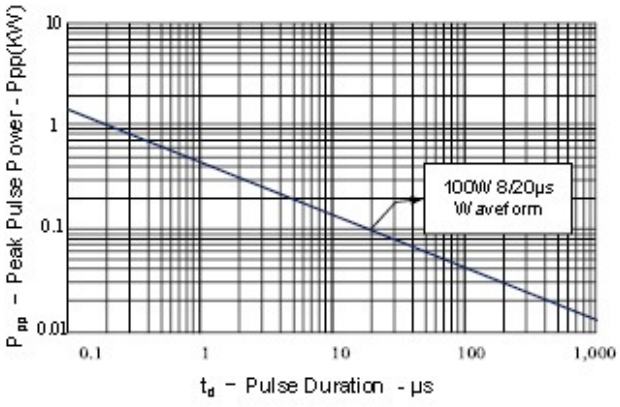


Figure 2: Power Derating Curve

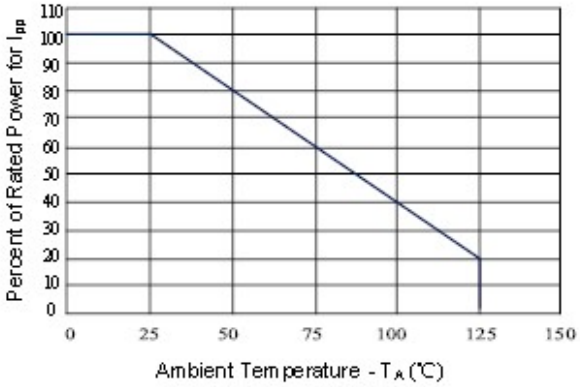


Figure 3: Clamping Voltage vs. Peak Pulse Current

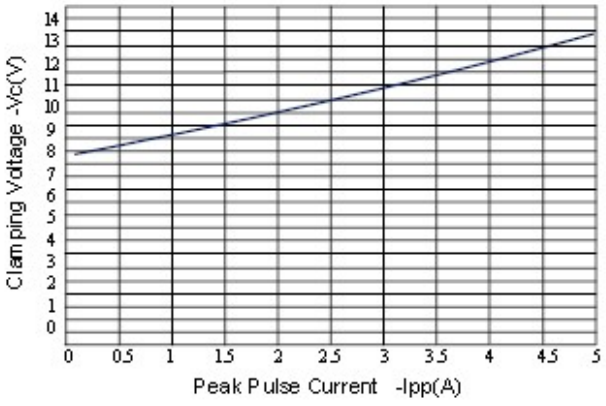


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

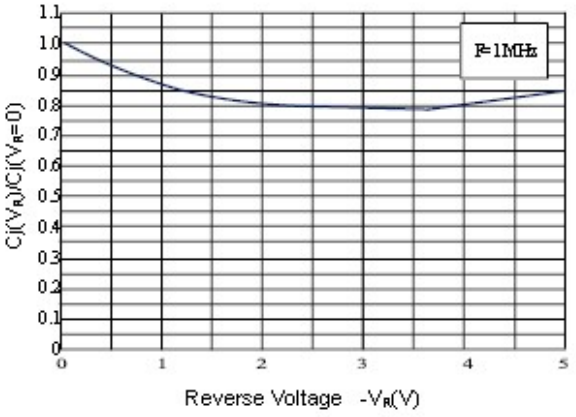


Figure 5: Pulse Waveform

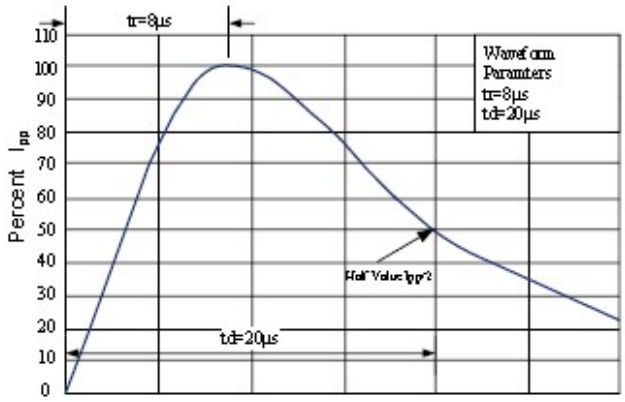
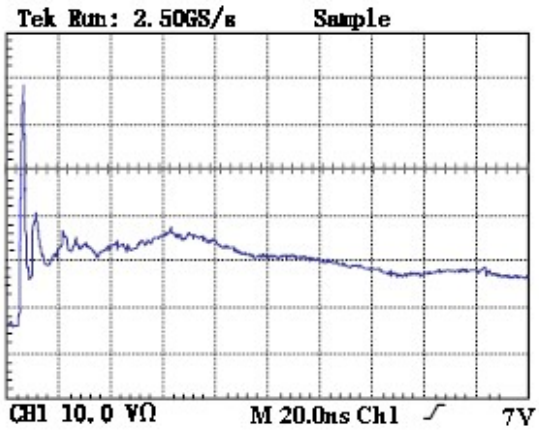
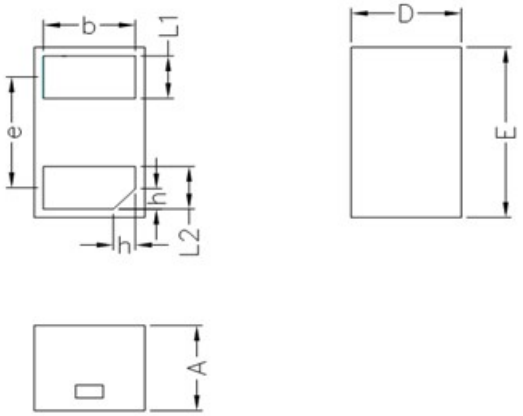


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)



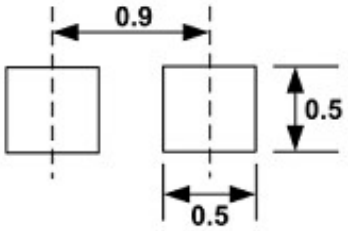
DFN1006 PACKAGE OUTLINE DIMENSIONS



Unit: mm

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
b	0.45	0.50	0.55
e	0.65BSC		
A	0.45	0.50	0.55
h	0.07	0.12	0.17

Dimension: Millimeter
(Stencil thickness: 0.1)



Soldering Footprint