

**DESCRIPTION**

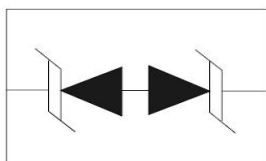
KESD9B5.0ST5G-N a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With typical capacitance of 8pF only, KESD9B5.0ST5G-N designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ( $\pm 15\text{kV}$  air,  $\pm 8\text{kV}$  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.

KESD9B5.0ST5G-N uses ultra-small DFN1006 package. KESD9B5.0ST5G-N device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

**ORDERING INFORMATION**

- Package: DFN1006
- Material: RoHS compliant, Halogen free
- Packing: Tape & Reel
- Quantity per reel: 10,000pcs

**CIRCUIT DIAGRAM**



**FEATURES**

- Transient protection for high-speed data lines IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (Air)  $\pm 8\text{kV}$  (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  $\pm 8\text{kV}$  contact discharge

**MACHANICAL DATA**

- DFN1006 package —
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed:  $260^\circ\text{C}/10\text{s}$  — Reel size: 7 inch

**APPLICATIONS**

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

**PIN CONFIGURATION**



**ABSOLUTE MAXIMUM RATING**

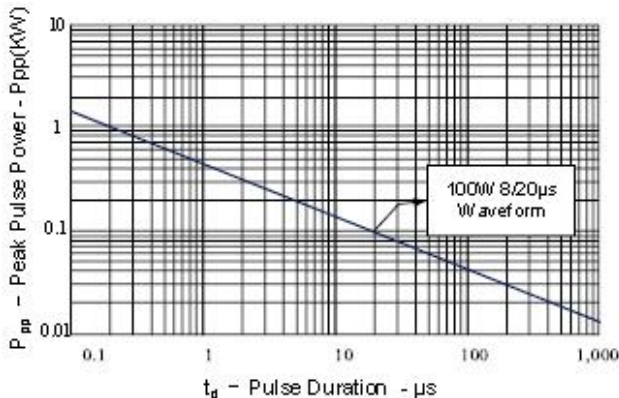
Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	100	W
T <sub>j</sub>	Operating Temperature	-55/+125	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C)**

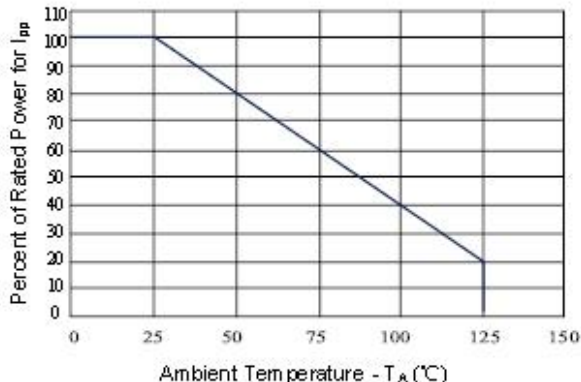
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Stand-Off Voltage				5.0	V
V <sub>BR</sub>	Reverse Breakdown voltage	I <sub>T</sub> =1mA	6.0			V
I <sub>R</sub>	Reverse leakage current.	V <sub>RWM</sub> =5V			1	μA
I <sub>PP</sub>	Peak Pulse Current	t <sub>p</sub> =8/20us			5	A
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> =1A, t <sub>p</sub> =8/20us I <sub>PP</sub> =5A, t <sub>p</sub> =8/20us		13	9.5 15	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> =0V, f=1MHz		8	15	pF

**ELECTRICAL CHARACTERISTICS CURVE**

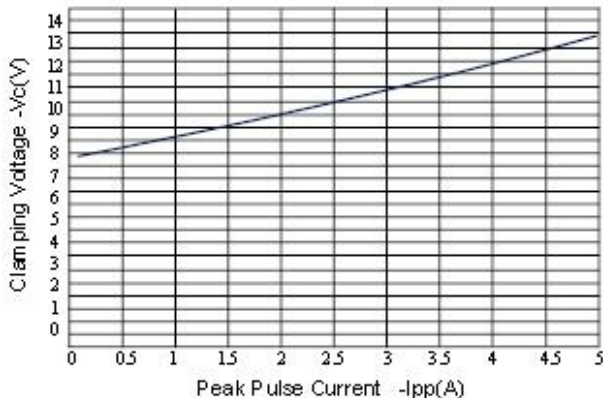
**Figure 1: Peak Pulse Power Vs Pulse Time**



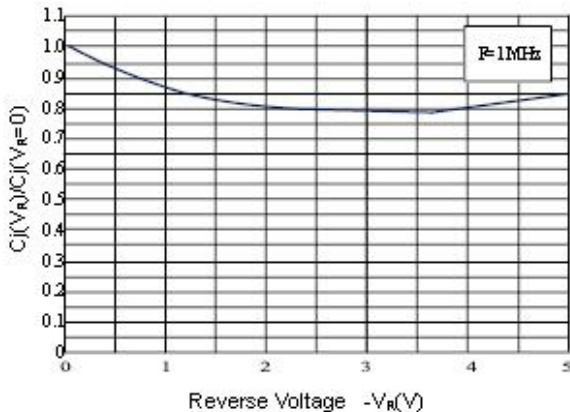
**Figure 2: Power Derating Curve**



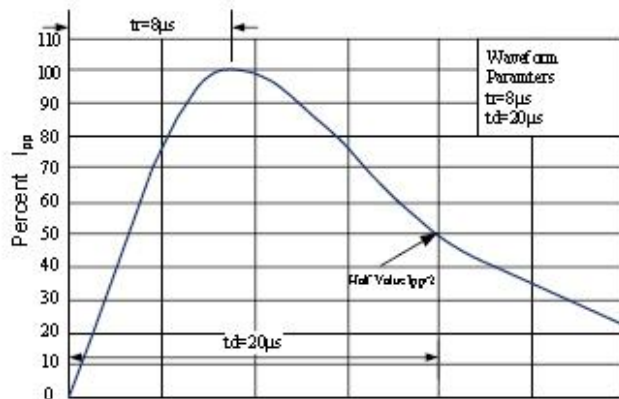
**Figure 3: Clamping Voltage vs. Peak Pulse Current**



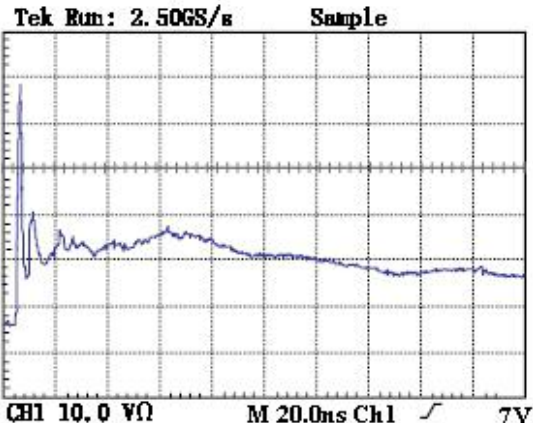
**Figure 4: Normalized Junction Capacitance vs. Reverse Voltage**



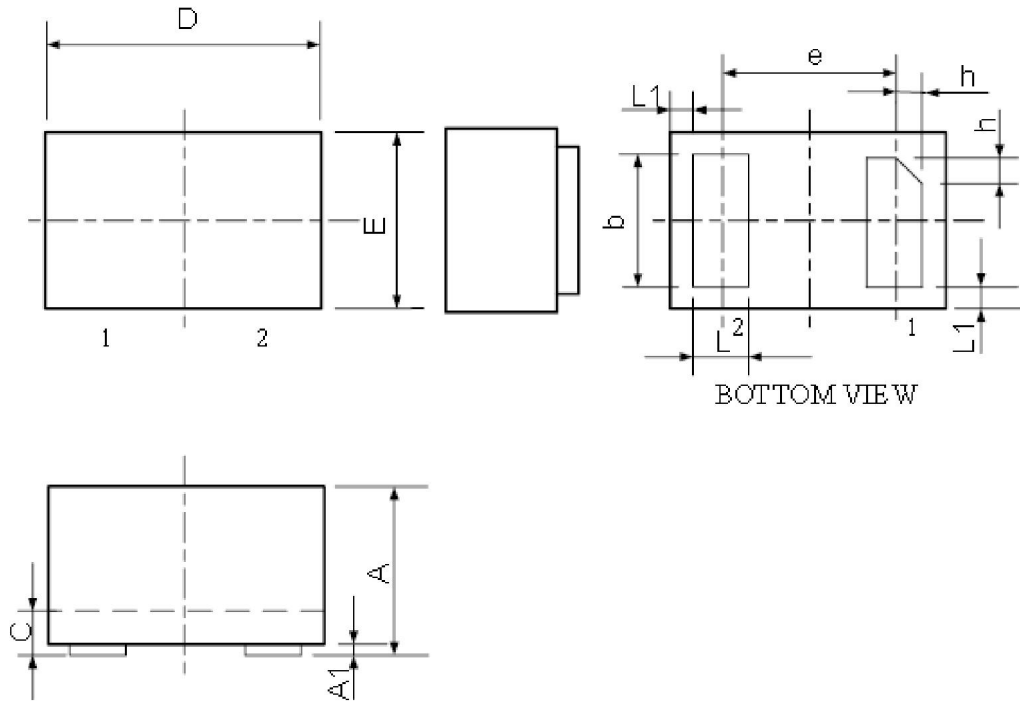
**Figure 5: Pulse Waveform**



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



**DFN1006 PACKAGE OUTLINE DIMENSIONS**



Symbol	Dimensions In Millimeters	
	Minimum	Maximum
A	0.450	0.550
A1	0.000	0.050
b	0.45	0.55
C	0.12	0.18
D	0.950	1.050
e	0.65BSC	
E	0.550	0.650
L	0.200	0.300
L1	0.05REF	
h	0.07	0.17