KESD9B5.0ST5G-N

TVS/ESD Protection Diode

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 (±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.

KESD9B5.0ST5G-Nuses 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.

FEATURES

— Transient protection for high-speed data lines IEC 61000-4-2 (ESD) ±15kV (Air)
±8kV (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 guaranted:260℃/10s — Reel size: 7 inch

ORDERING INFORMATION

—Package: DFN1006

— Material: RoHS compliant, Halogen free

— Packing: Tape & Reel

— Quantity per reel: 10,000pcs

APPLICATIONS

—Portable Electronics

— Desktops, Servers and Notebooks

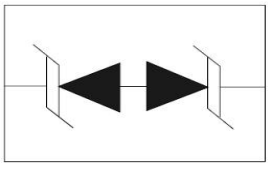
—Cellular Phones

—MP3 Ports

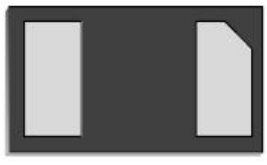
—Digital Ports

— Subscriber Identity Module (SIM) card

CIRCUIT DIAGRAM



PIN CONFIGURATION



ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20μs)	100	W
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
V_{RWM}	Reverse Stand-Off Voltage				5.0	V
V_{BR}	Reverse Breakdown voltage	I_T=1mA	6.0			V
I_R	Reverse leakage current.	V_{RWM}=5V			1	μA
I_{PP}	Peak Pulse Current	t_P=8/20us			5	A
V_C	Clamping Voltage	I_{PP}=1A, t_P=8/20us I_{PP}=5A, t_P=8/20us		 13	9.5 15	V
C_J	Junction Capacitance	V_R=0V,f=1MHz		8	15	pF

ELECTRICAL CHARACTERISTICS CURVE

Figure 1: Peak Pulse Power Vs Pulse Time

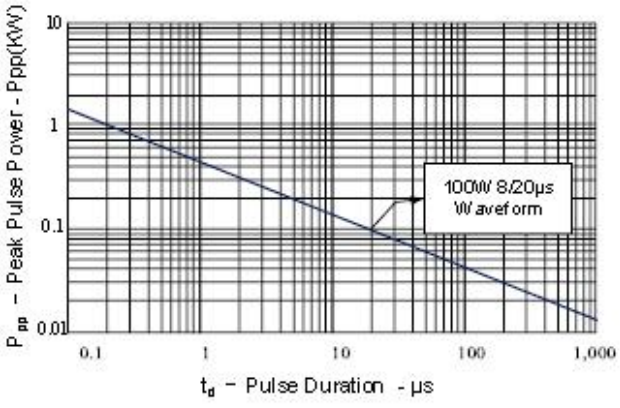


Figure 2: Power Derating Curve

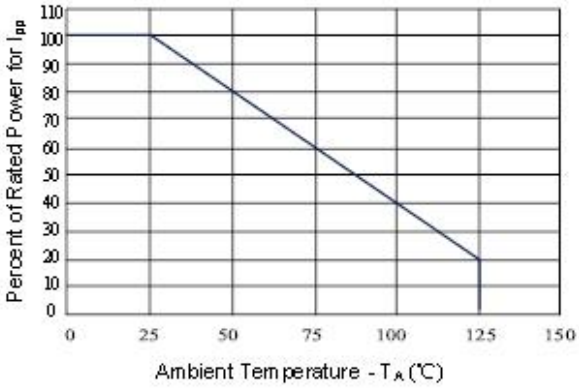


Figure 3: Clamping Voltage vs. Peak Pulse Current

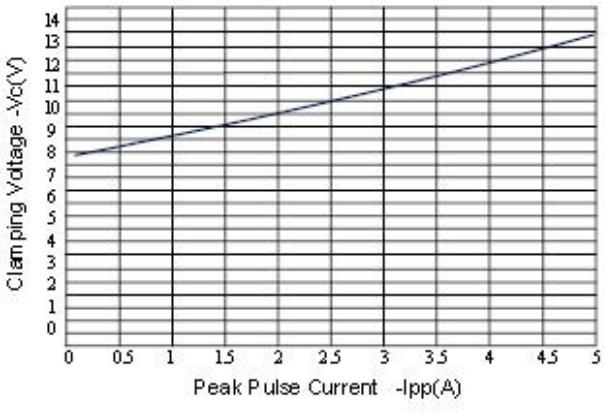


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

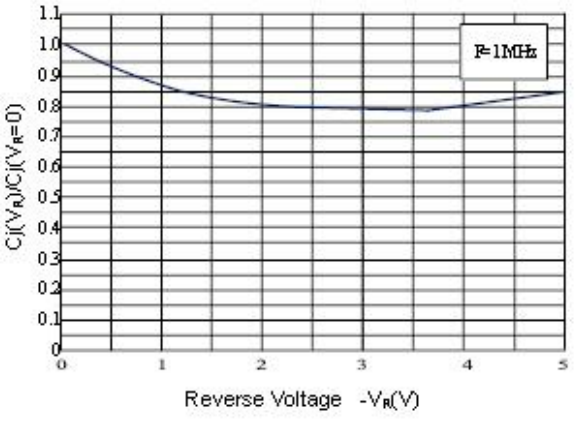


Figure 5: Pulse Waveform

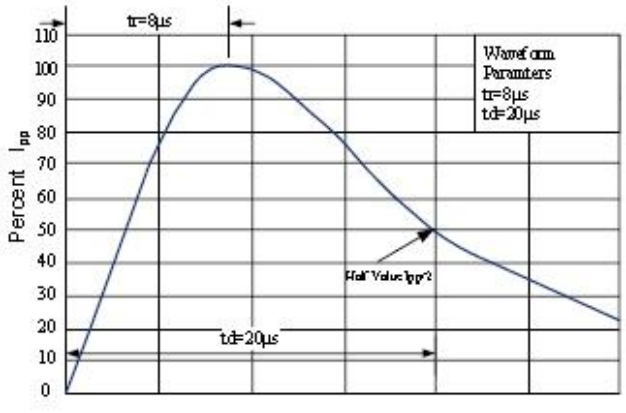
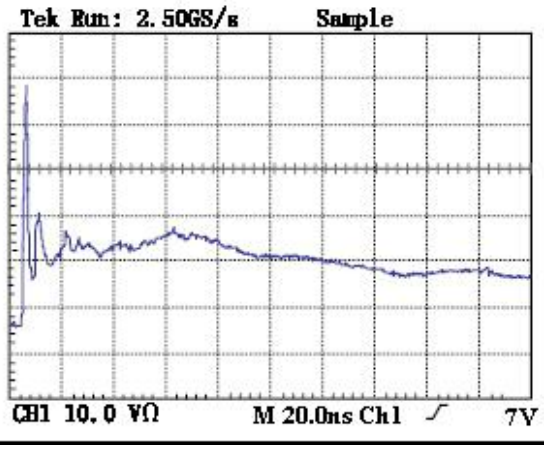
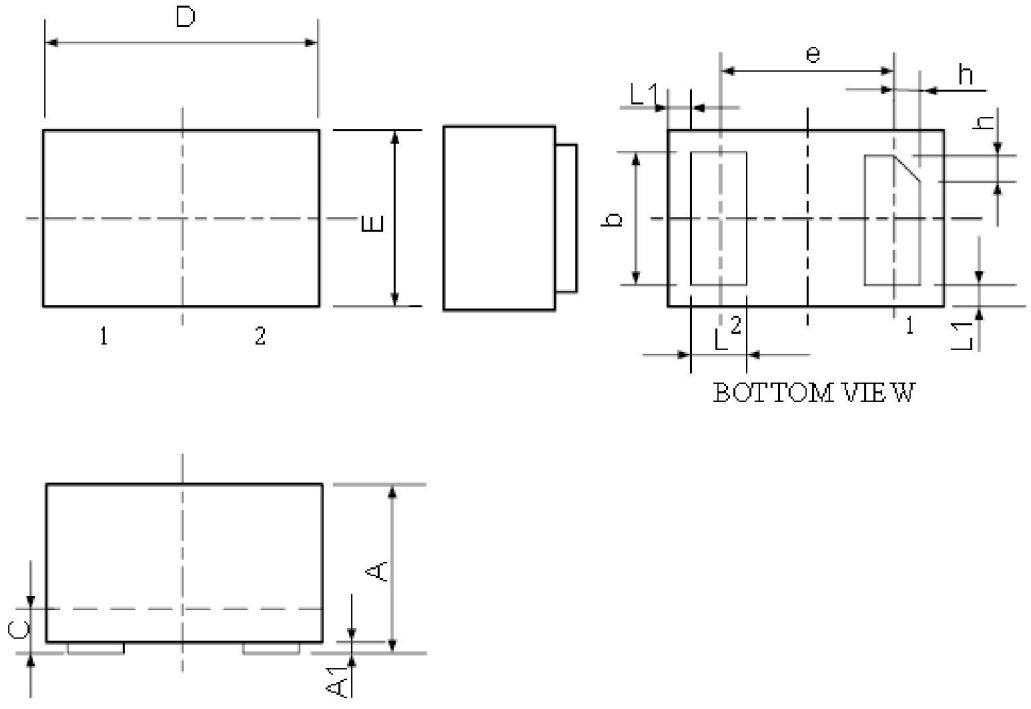


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)



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

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