



# GESD0301PB

## Low Capacitance TVS/ESD Protection Diode

### DESCRIPTION

GESD0301PB is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With Maximum capacitance of 15pF, GESD0301PB 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 ( $\pm 15\text{kV}$  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.

GESD0301PB uses ultra-small DFN1006 package. Each GESD0301PB device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

### ORDERING INFORMATION

- ✧ Device: GESD0301PB
- ✧ Package: DFN1006
- ✧ Marking: 3PB
- ✧ Material: 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 $\times$ 0.6mm $\times$ 0.4mm)
- ✧ Protects one data, control or power line
- ✧ Low capacitance: 15pF (Maximum)
- ✧ Low leakage current
- ✧ Low clamping voltage
- ✧ Each I/O pin can withstand over 1000 ESD strikes for  $\pm 8\text{kV}$  contact discharge

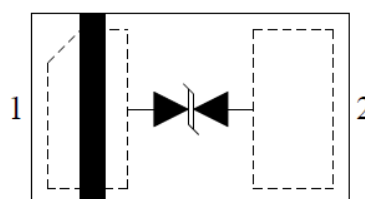
### MACHANICAL DATA

- ✧ 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
- ✧ MSL 1

### APPLICATIONS

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

### PIN CONFIGURATION





# GESD0301PB

Low Capacitance TVS/ESD Protection Diode

## ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
$V_{ESD}$	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$\pm 25$ $\pm 20$	kV
$P_{PP}$	Peak Pulse Power (8/20 $\mu$ s)	84	W
$T_{OPT}$	Operating Temperature	-55/+125	$^{\circ}$ C
$T_{STG}$	Storage Temperature	-55/+150	$^{\circ}$ C

## ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}$ C)

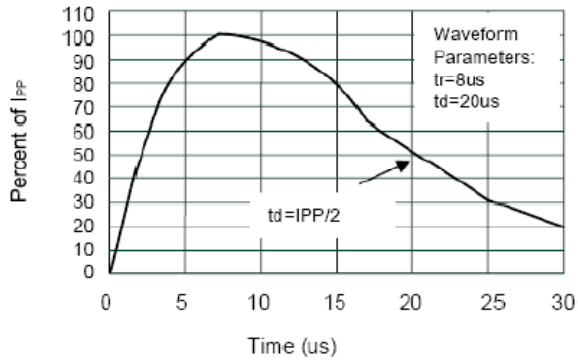
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				3.3	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1mA$	3.6			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 3.3V$			1.0	$\mu$ A
$V_C$	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$			8.0	V
$V_C$	Clamping Voltage	$I_{PPmax} = 7A, t_p = 8/20\mu s$			12.0	V
$C_J$	Junction Capacitance	$V_R = 0V, f = 1MHz$			15	pF



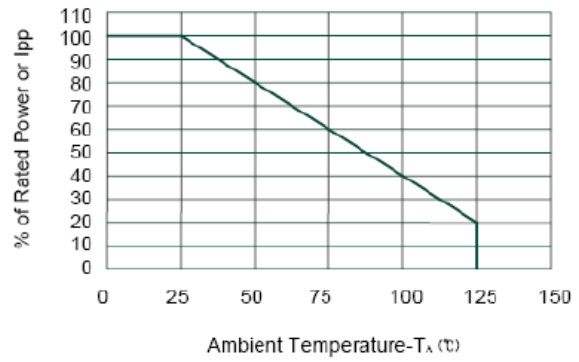
# GESD0301PB

Low Capacitance TVS/ESD Protection Diode

## ELECTRICAL CHARACTERISTICS CURVE

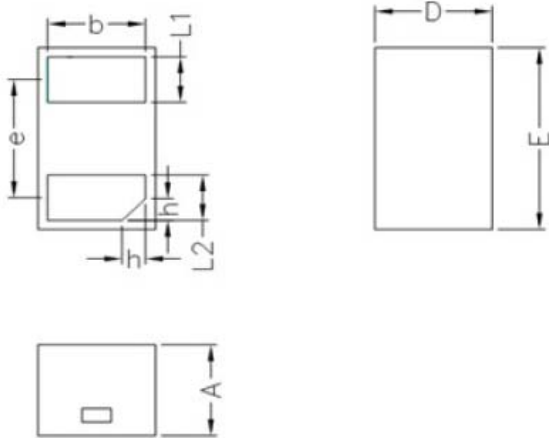


Pulse Waveform



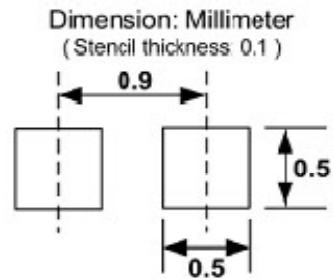
Power Derating Curve

## 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



Soldering Footprint