

DESCRIPTION

KPESD5V0S1BSF a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With maximum capacitance of 18pF, KPESD5V0S1BSF 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.

KPESD5V0S1BSF uses ultra-small DFN0603 package. Each KPESD5V0S1BSF 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:** KPESD5V0S1BSF
- ◇ **Package:** DFN0603
- ◇ **Material:** Halogen free
- ◇ **Packing:** Tape & Reel
- ◇ **Quantity per reel:** 10,000pcs

PIN CONFIGURATION



FEATURES

- ◇ Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Contact)
 $\pm 30\text{kV}$ (Air)
IEC 61000-4-4 (EFT) 40A (5/50 ns)
- ◇ Peak power dissipation: 96W (8/20 μs)
- ◇ Working voltages :5V
- ◇ Ultra-small package (0.6mm×0.3mm×0.3mm)
- ◇ Protects one I/O line
- ◇ Low clamping voltage
- ◇ Low leakage current

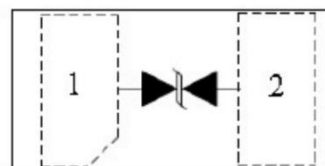
MACHANICAL DATA

- ◇ DFN0603 package
- ◇ Flammability Rating: UL 94V-0
- ◇ High temperature soldering guaranteed:
260°C/10s
- ◇ Packaging: Tape and Reel
- ◇ Reel size: 7 inch

APPLICATIONS

- ◇ Personal digital assistants (PDA's)
- ◇ Notebooks, Desktops, and Servers
- ◇ Cell phone Handsets and Accessories
- ◇ Portable Electronics
- ◇ IOT Terminal Equipment/Device
- ◇ Smart Wearable Device

CIRCUIT DIAGRAM

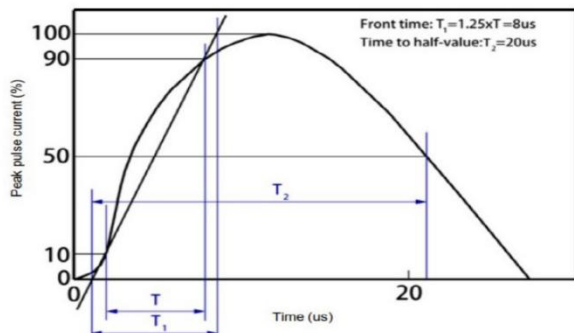
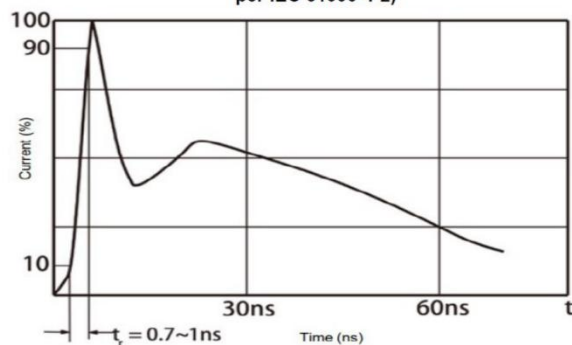
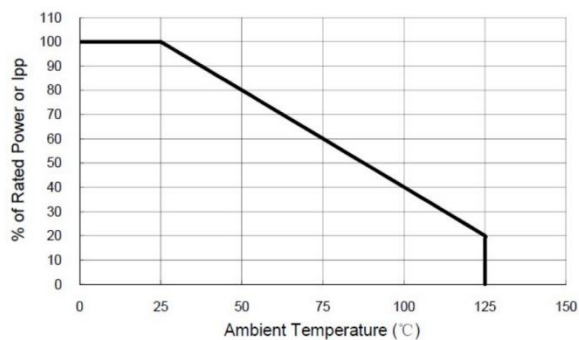
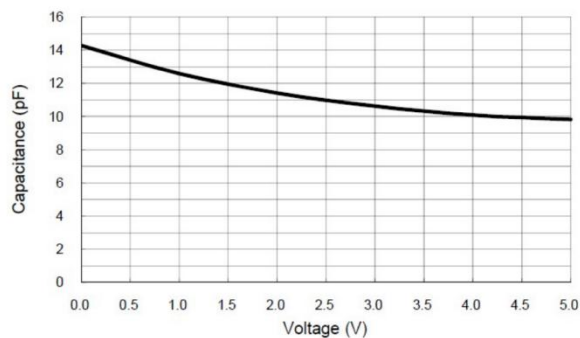
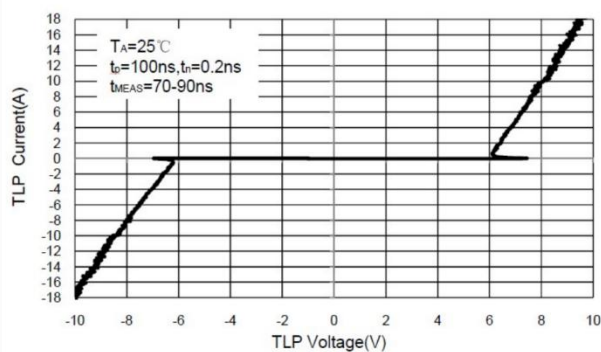
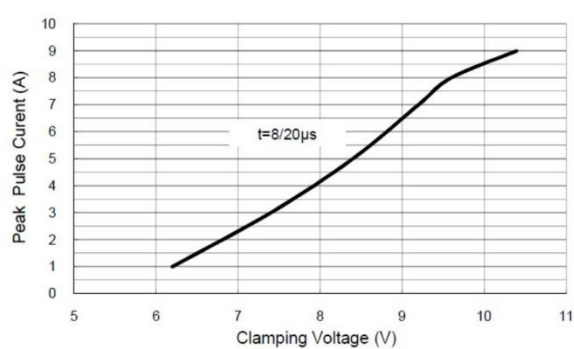


ABSOLUTE MAXIMUM RATING

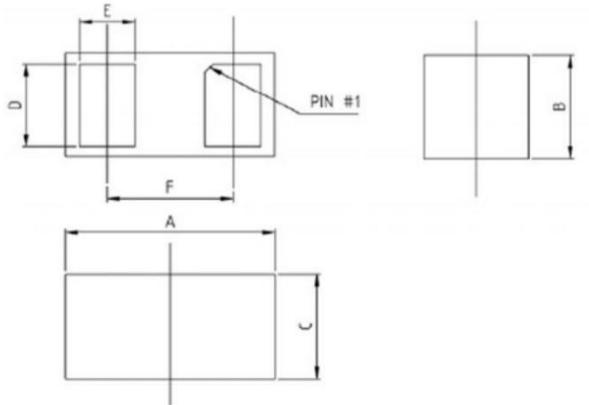
Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	± 30 ± 30	kV
P_{PP}	Peak Pulse Power (8/20 μ s)	96	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25. °C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_r = 1mA$	5.6			V
I_R	Reverse Leakage Current	$V_{RWM} = 5V$			1.0	μA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$		6.5	8.0	V
		$I_{PP} = 8A, t_p = 8/20\mu s$		10.0	12.0	V
V_{CTLTP}	TLP Clamping Voltage	$I_{PP} = 16A$ IEC61000-4-2 Level 4 equivalent ($\pm 8kV$ Contact, $\pm 15kV$ Air)		9.5		V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$		14.0	18.0	pF

ELECTRICAL CHARACTERISTICS CURVE
Fig 1 8/20 μ s Waveform per IEC61000-4-5

Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

Fig 3 Power Derating Curve

Fig 4 Voltage vs Capacitance

Fig 5 Transmission Line Pulsing (TLP) Measurement

Fig 6 Clamping Voltage vs Peak Pulse Current


DFN0603 PACKAGE OUTLINE DIMENSIONS



Dimensions in Millimeter			
Symbol	Min.	Typ.	Max.
A	0.58	0.60	0.65
B	0.28	0.30	0.35
C	0.28	0.30	0.34
D	0.20	0.24	0.26
E	0.13	0.16	0.19
F		0.36	