

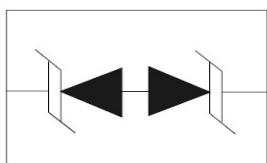
DESCRIPTION

AU0511P1 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 15pF, AU0511P1 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. AU0511P1 uses ultra-small DFN1006. Each AU0511P1 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: AU0511P1
- ✧ Package: DFN1006
- ✧ Marking:
- ✧ Material: RoHS compliant, Halogen free
- ✧ Packing: Tape & Reel

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
- ✧ 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 $^{\circ}\text{C}$ /10s
- ✧ Reel size: 7 inch
- ✧ MSL3

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_{PP}	Peak Pulse Power (8/20 μ s)	60	W
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 25 ± 20	kV
T_j	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 Stand-Off Voltage				5.0	V
V_{BR}	Reverse Breakdown voltage	$I_T=1mA$	5.6			V
I_R	Reverse leakage current.	$V_{RWM}=5V$			1	μ A
I_{PP}	Peak Pulse Current	$t_p=8/20\mu s$			4	A
V_C	Clamping Voltage	$I_{PP}=1A, t_p=8/20\mu s$ $I_{PP}=4A, t_p=8/20\mu s$			9.5 15	V
C_J	Junction Capacitance	$V_R=0V, f=1MHz$			15	pF

ELECTRICAL CHARACTERISTICS CURVE

Figure 1: Peak Pulse Power Vs Pulse Time

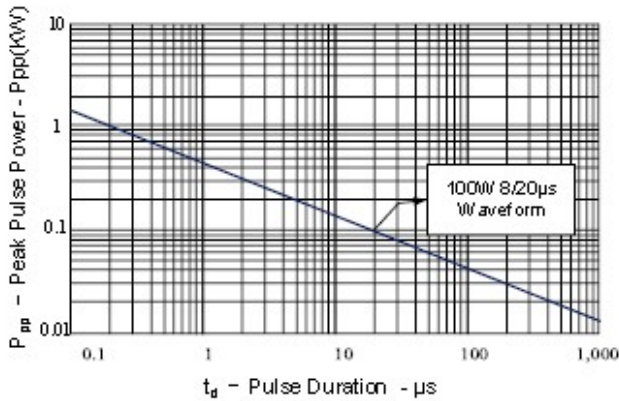


Figure 2: Power Derating Curve

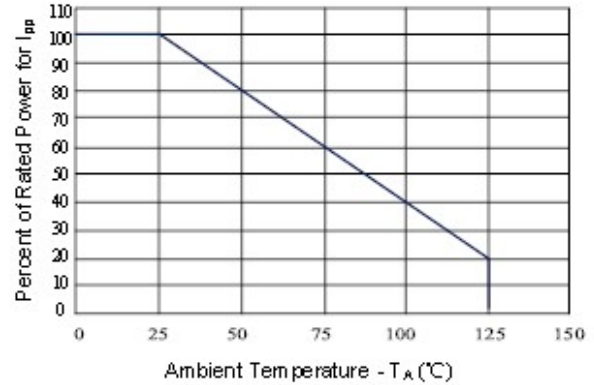


Figure 3: Clamping Voltage vs. Peak Pulse Current

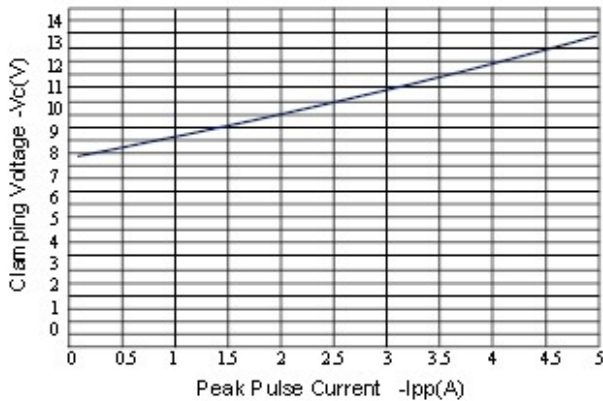


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

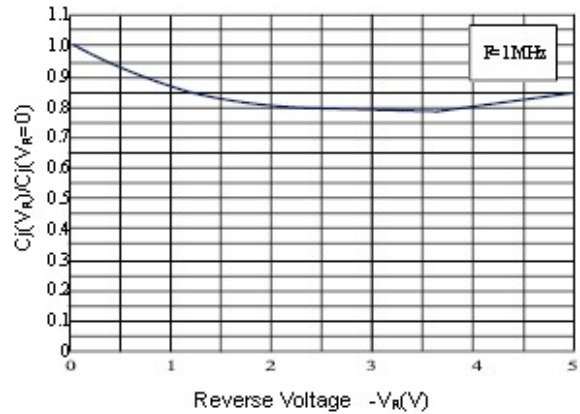


Figure 5: Pulse Waveform

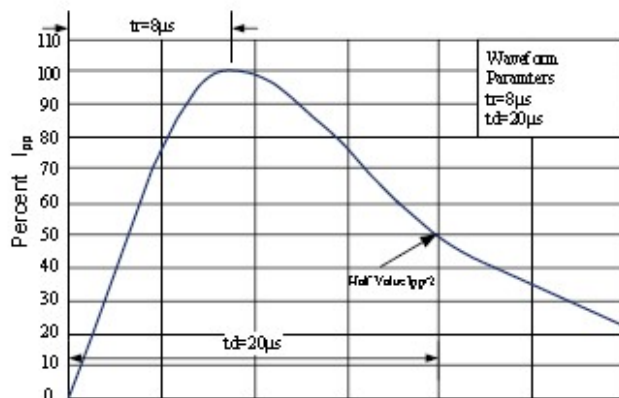
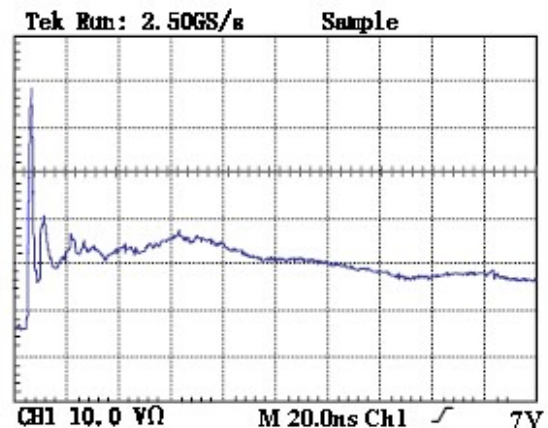
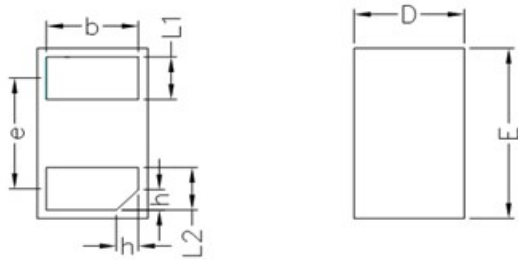


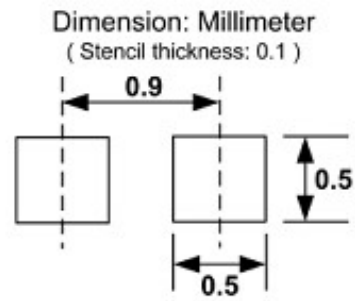
Figure 6: ESD Clamping (8kV Contact per IEC 61000-4-2)



DFN1006 PACKAGE OUTLINE DIMENSIONS


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