

Descriptions

The CTESD5V0X1A2ZP-A is designed to protect voltage sensitive components from damage or latch-up due to ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones, MP3 players, and portable applications that require audio line protection.

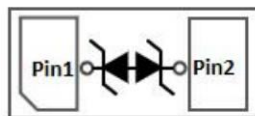
Features

- Small Body Outline Dimensions: nom 0.039 " x 0.024" (1.0x0.6 mm)
- Low Body Height: nom 0.019" (0.5 mm)
- Low Clamping Voltage
- Reverse Working (Stand-off) Voltage: 5.0 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device

Applications

- USB 3.0 and Universal Flash Storage (UFS) data lines
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals

Equivalent Circuit & Pinning



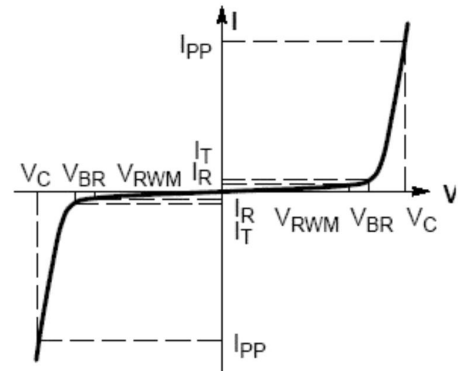
DFN1006-2L

Absolute Maximum Ratings(Ta=25°C)

Rating		Symbol	Value	Unit
IEC 61000-4-2 (ESD)	Contact		±30	kV
	Air			
ESD Voltage	Per Human Body Model		16	kV
	Per Machine Model		400	V
Peak Power Per 8 x 20µs Waveform		P _{PK}	160	W
Junction and Storage Temperature Range		T _J , T _{stg}	-55 to +150	°C
Lead Solder Temperature - Maximum (10 Second Duration)		T _L	260	°C

Electrical Characteristics(Ta=25°C)

Symbol	Parameter
I _{PP}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @ IPP
V _{RWM}	Working Peak Reverse Voltage
I _R	Maximum Reverse Leakage Current @ V _{RWM}
I _T	Test Current
V _{BR}	Breakdown Voltage @ I _T
P _{PK}	Peak Power Dissipation
C	Capacitance @ VR = 0 and freq.=1 MHz



Bi-Directional TVS

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V _{RWM}				5.0	V
Breakdown Voltage	V _{BR}	I _T =1mA	6.5	8		V
Reverse Leakage Current	I _R	V _{RWM} =5V		0.002	0.2	µA
Forward Voltage	V _F	I _F =15mA				V
Clamping Voltage	V _C	I _{PP} =1A, tp=8/20µs		10		V
		I _{PP} =8A, tp=8/20µs		18	20	
Junction Capacitance	C _J	V _{DC} =0V, f=1MHz		0.5	0.8	pF

Note: Surge current wave form per figure 3.

Electrical Characteristic Curve

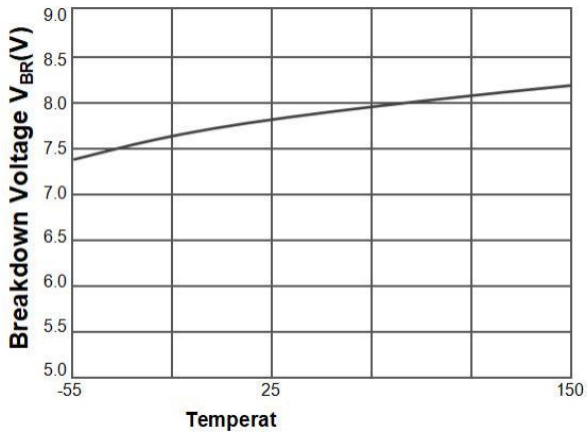


Figure 1: Typical Leakage Current versus Temperature

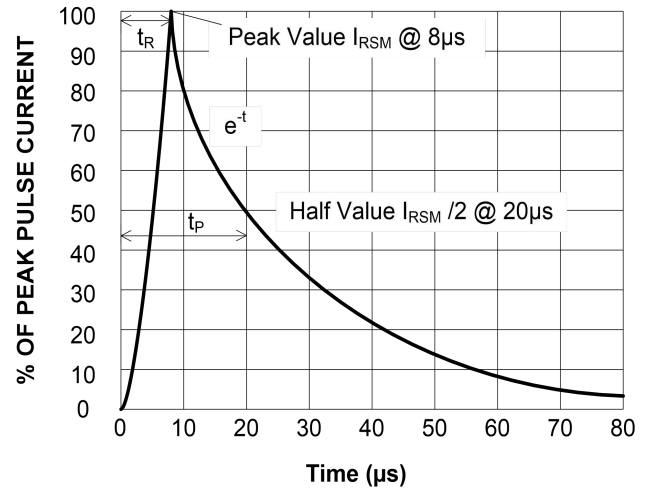
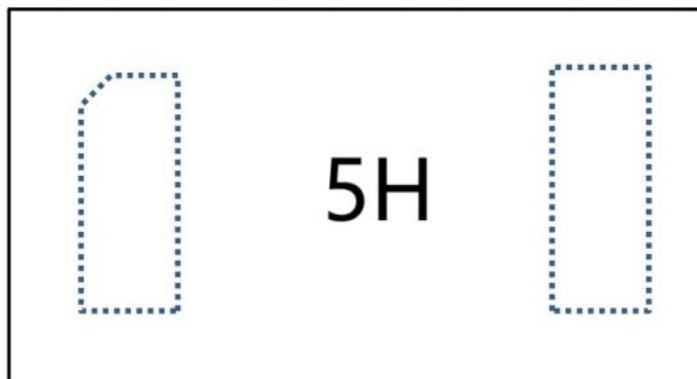


Figure 2: 8/20 μ s Pulse Wave Form

Marking Instructions



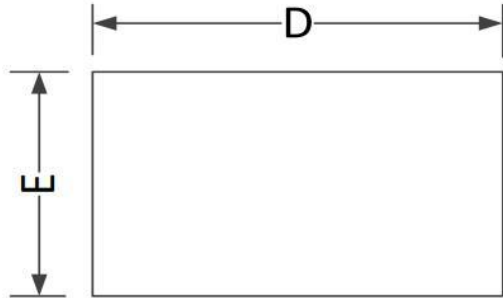
Note:
5H: product type code

Packaging SPEC

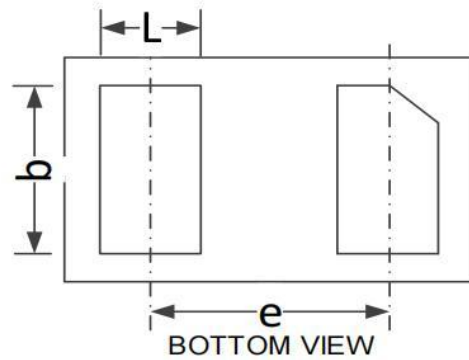
Marking	Device	Package	Reel size	Tape width	Quantity
5H	CTESD5V0X1A2ZP-A	DFN1006-2L	7inch	8mm	10000/ 12000

Package Outline Dimensions

DFN1006-2L



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX.
A	0.40		0.55
b	0.45	0.50	0.55
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30