

ECENCAB12VB

Low-Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

The ECENCAB12VB is designed with ECORE Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, VGA, DVI, SDI and other high speed line applications.

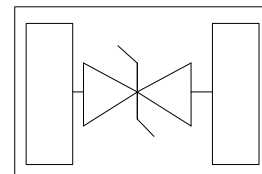
It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

Features

- Peak Power Dissipation –100 W (8 x 20 us Waveform)
- Stand-off Voltage: 12 V
- Low capacitance (<18.0pF) for high-speed interfaces
- Replacement for MLV (0402)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- ROHS compliant
- Solid-state Punch-Through TVS Process technology



DFN1006



Main applications

- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals
- MP3 Players

Protection solution to meet

- IEC61000-4-2 (ESD) ±18kV (air), ±12kV (contact)
- IEC61000-4-5 (Lightning) 4A (8/20µs)

Ordering Information

Device	Marking	Qty per Reel	Reel Size
ECENCAB12VB	T2	10000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)			
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	PPPP	100	Watts
ESD Rating per IEC61000-4-2:	Contact	12	KV
	Air	18	
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Operating Temperature Range	TJ	-55 ~ 150	°C
Storage Temperature Range	TSTG	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

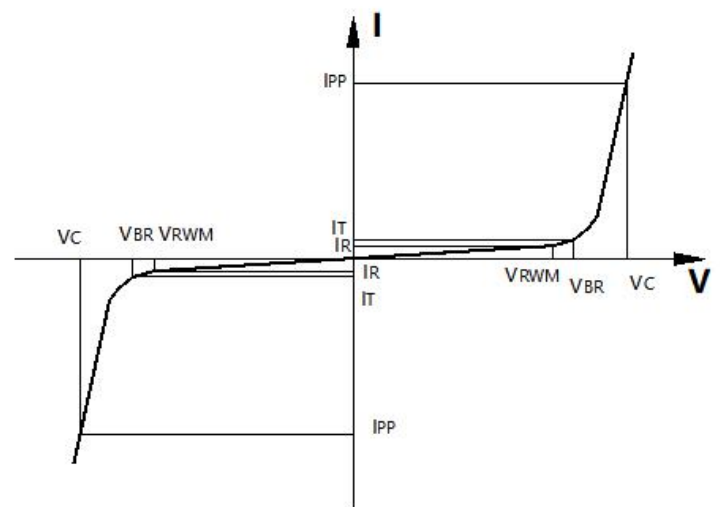
*Other voltages may be available upon request.

1. Non-repetitive current pulse, per Figure 1.

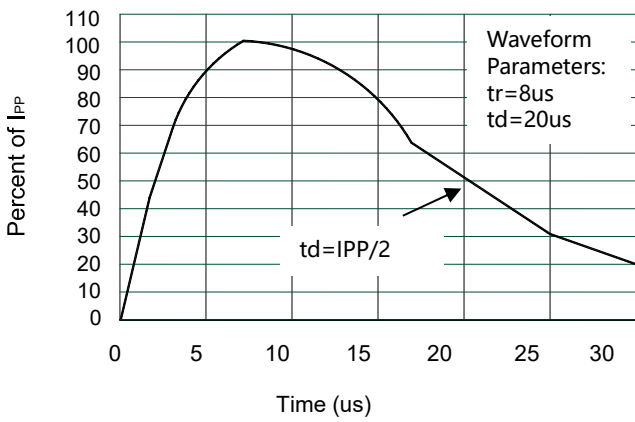
Junction capacitance is measured in VR=0V, F=1MHz

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)						
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
VRWM	Reverse Working Voltage				12	V
VBR	Reverse Breakdown Voltage	IT = 1mA	13.3			V
IR	Reverse Leakage Current	VRWM = 12V		0.01	0.2	µA
VC	Clamping Voltage	I _{PP} = 1A, tp = 8/20µs		15	19	V
		I _{PP} = 4A, tp = 8/20µs		21	25	V
CJ	Junction Capacitance	VR = 0V, f = 1MHz		10	18	pF

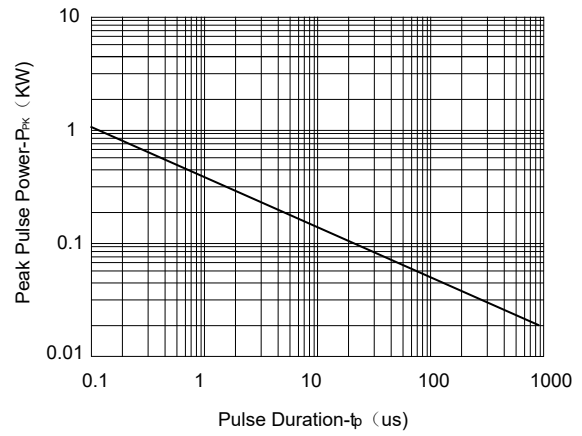
Symbol	Parameter
VRWM	Working Peak Reverse Voltage
VBR	Breakdown Voltage @ IT
VC	Clamping Voltage @ IPP
IT	Test Current
IRM	Leakage current at VRWM
IPP	Peak pulse current
CO	Off-state Capacitance
CJ	Junction Capacitance



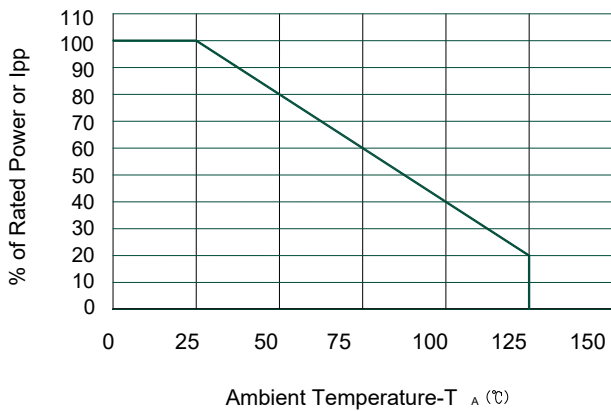
Typical electrical characterist applications



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

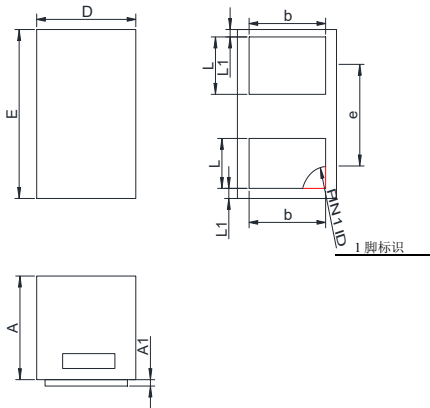
Package Information

DFN-1006

Mechanical Data

Case:DFN1006

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.30	0.50
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.25	0.60
e	0.65TYP	
L	0.15	0.35
L1	0.05REF	

Recommended Pad outline

