ECENCAB12VU

Low-Capacitance Uni-directional Micro Packaged TVS Diodes for ESD Protection

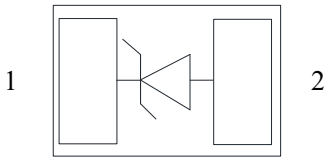
The ECENCAB12VU is designed with ECORE TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

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 −250 W (8 x 20 us Waveform)
- Stand-off Voltage: 12 V
- Low capacitance (<65.0pF) 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) ±30kV (air), ±30kV (contact)
- IEC61000-4-5 (Lightning) 10A (8/20μs)

Ordering Information

Device	Qty per Reel	Reel Size
ECENCAB12VU	5000/10000	7 Inch

Maximum ratings (Tamb=25℃ Unless Otherwise Specified)			
Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (tp=8/20μs waveform)	P_{PPP}	250	Watts
ESD Rating per IEC61000-4-2： Contact Air		30 30	KV
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-55 ~ 150	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	℃

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.

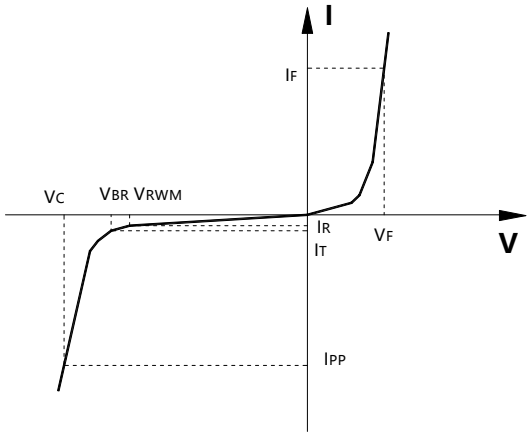
**Other voltages may be available upon request.*

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

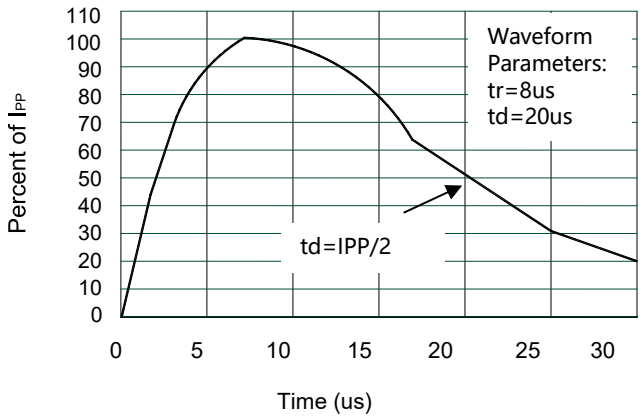
Junction capacitance is measured in VR=0V,F=1MHz

Electrical characteristics (Tamb=25℃ Unless Otherwise Specified)						
Symbol	**Parameter**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
V_{RWM}	Reverse Working Voltage				12	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA,	13.3			V
I_R	Reverse Leakage Current	V_{RWM} = 12V,		0.01	0.5	μA
V_F	Forward voltage	I_F = 10mA		0.9		V
V_C	Clamping Voltage	I_{PP} = 1A, tp =8/20μs,		15	19	V
		I_{PP} = 10A, tp =8/20μs,		17	25	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz,			105	pF

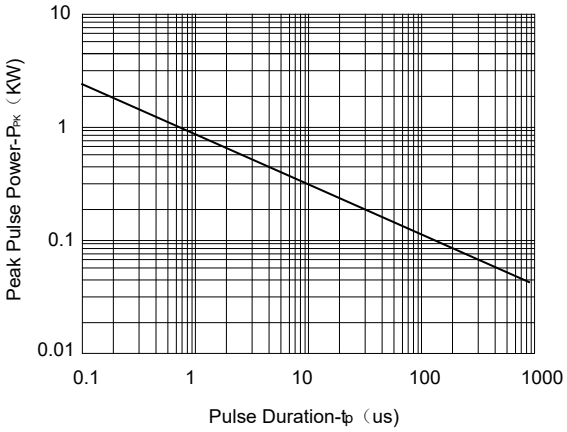
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



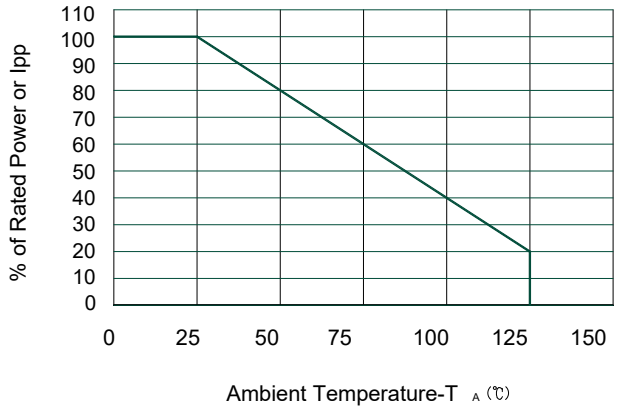
Typical electrical characterist applications



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

Package Information

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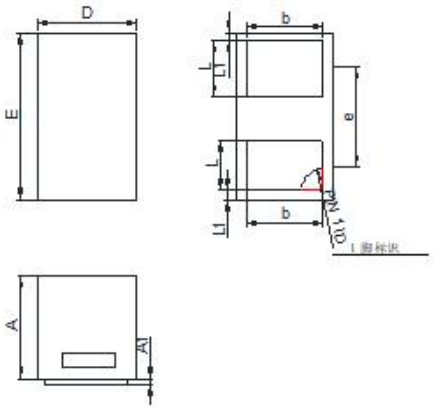
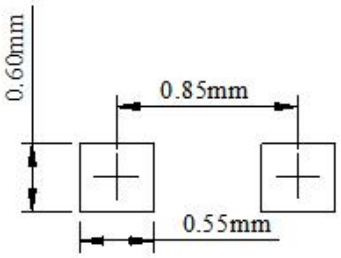
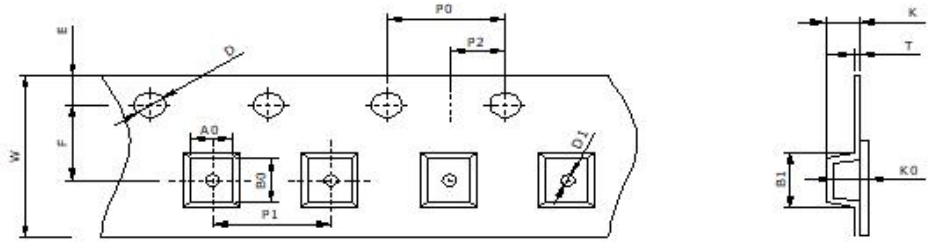


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.30	0.50	0.012	0.020
A1	0.00	0.05	0.000	0.002
D	0.55	0.65	0.022	0.026
E	0.95	1.05	0.037	0.041
b	0.25	0.60	0.010	0.024
e	0.65TYP		0.026TYP	
L	0.15	0.35	0.006	0.014
L1	0.05REF		0.002REF	

Recommended Pad outline



DFN1006 Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
DFN1006	1.0×0.6×0.50	1.10×0.70×0.60	8mm	178mm(7")	5000/10000	4mm	4/2mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	0.55mm	0.2mm	8mm	