ECTHCCA12VU

Small Surface Mount TVS Diode for ESD Protection

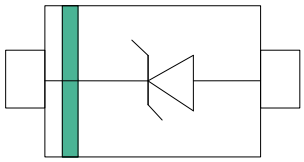
The ECTHCCA12VU is designed with ECORE technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD.

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 − 3000W (8 x 20 us Waveform)
- Stand-off Voltage: 12 V
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ESD Rating of above 16 kV per Human Body Model
- Lead Orientation in Tape: Cathode Lead to Sprocket Holes
- ROHS compliant

SOD-123FL



Main applications

- High Speed Line :USB1.0/2.0, VGA, DVI, SDI,
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals

Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Ordering Information

Device	Qty per Reel	Reel Size
ECTHCCA12VU	3000	7 Inch

Maximum ratings (Tamb=25℃ Unless Otherwise Specified)			
Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (tp=8/20μs waveform)	P_{PPP}	3000	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.

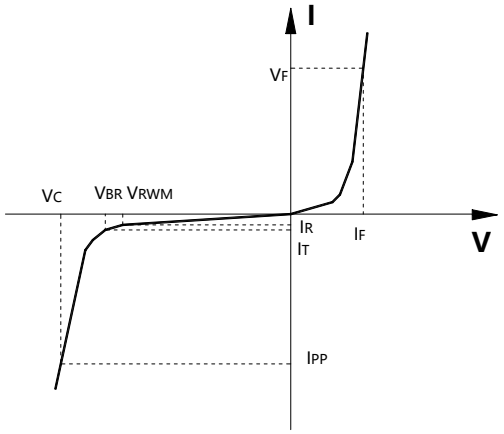
**Other voltages may be available upon request.*

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

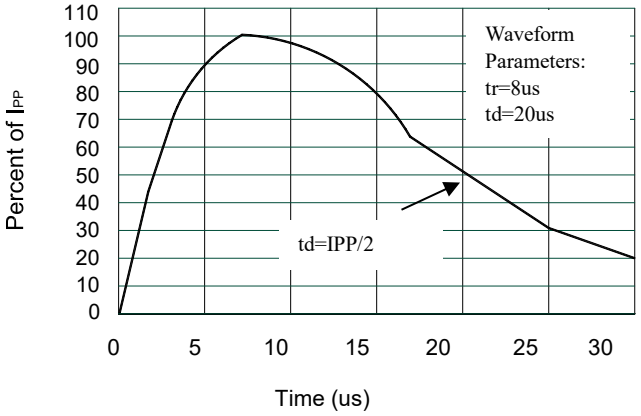
Electrical characteristics (Tamb=25℃ Unless Otherwise Specified)									
Device*	**V_{RWM}**	**V_{BR} @ I_T (V)**			**I_T**	**I_R @ V_{RWM}**	**V_C@I_{PP}**	**I_{PP}(Max)**	**Capacitance (Typ)**
	(V)	**Min**	**Nom**	**Max**	**(mA)**	**(uA)**	**(V)**	**(A)**	(nF)
ECTHCCA12VU	12	13.0	15.0	16.8	1	2.5	22V@110A	150	0.75

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

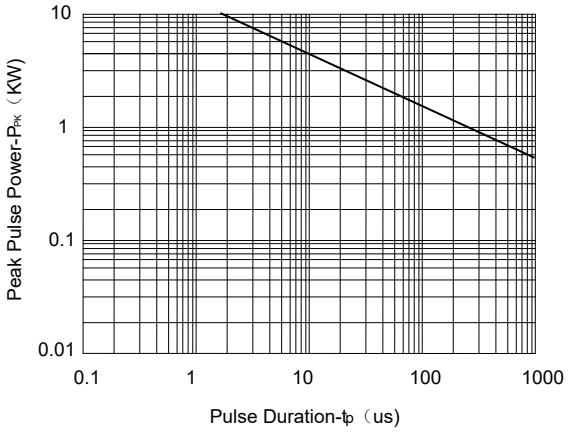
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



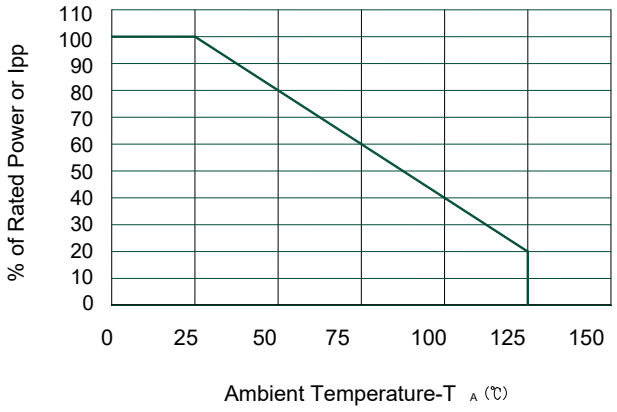
Typical electrical characterist applications



Pulse Waveform



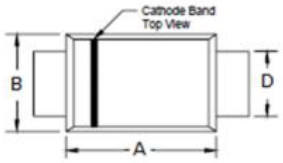
Non-Repetitive Peak Pulse Power vs. Pulse Time

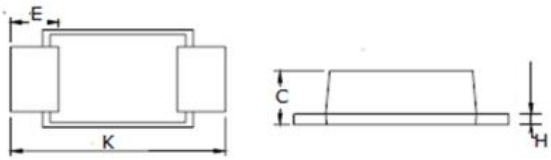


Power Derating Curve

Package Information

SOD-123FL





Dim	Millimeters	
	Min	Max
A	2.70	2.90
B	1.50	1.90
C	1.15	1.45
D	0.80	1.20
E	0.35	0.85
H	0.10	0.30
K	3.50	3.90

Recommended Pad outline