

ECTHCCB4V5U

Bidirectional Micro Packaged TVS Diodes for ESD Protection

The ECTHCCB4V5U Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

This series has been specifically designed to protect sensitive components which are connected to power, data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

Features

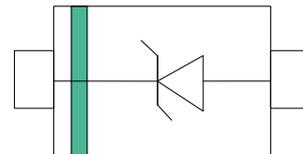
- Peak Power Dissipation – 1200 W (8 x 20 us Waveform)
- Low Clamping Voltage
- Low Leakage
- Stand-off Voltage: 4.5V
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- **Solid-state silicon avalanche technology**
- ROHS compliant



SOD-323

Main applications

- Cellular handsets AND accessories
- Portable instrumentation
- Peripherals
- Networking and Telecom
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV



Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 80A (8/20μs)

Ordering Information

Device	Qty per Reel	Reel Size
ECTHCCB4V5U	3000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)			
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P _{PPP}	1200	Watts
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	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.

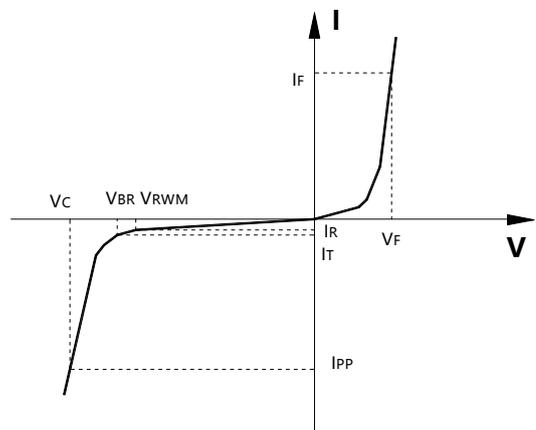
*Other voltages may be available upon request.

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

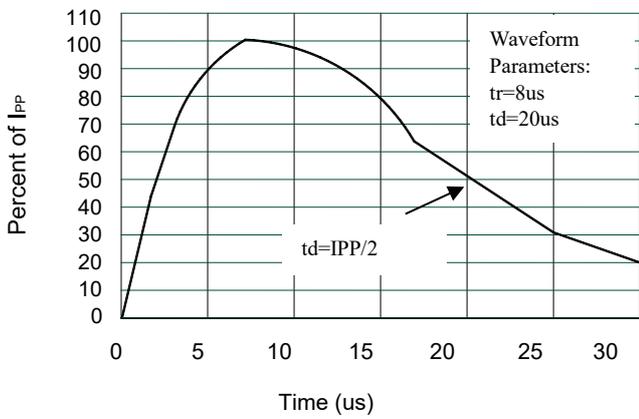
Electrical characteristics (Temp=25°C Unless Otherwise Specified)						
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Pin 1 to pin 2			4.5	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA, Pin 1 to pin 2	5			V
I _R	Reverse Leakage Current	V _{RWM} = 4.5V, Pin 1 to pin 2			1	µA
V _C	Clamping Voltage	I _{PP} = 50A, tp = 8/20µs, Pin 1 to pin 2		10		V
		I _{PP} = 80A, tp = 8/20µs, Pin 1 to pin 2		15	16.5	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, Pin 1 to pin 2		300		pF

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

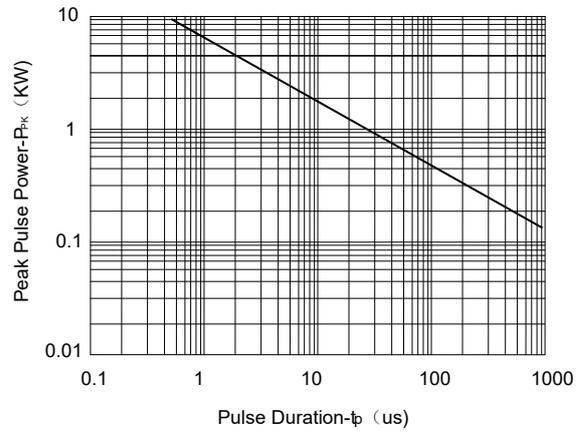
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



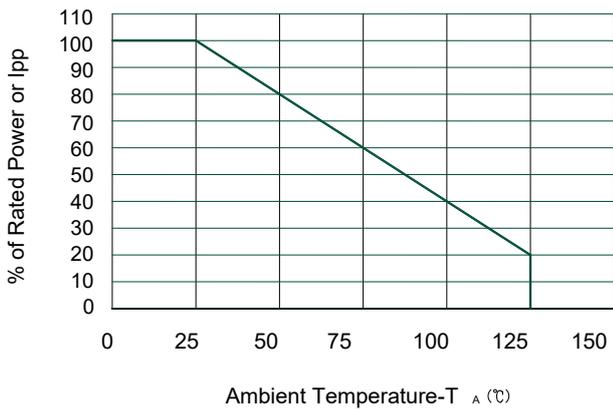
Typical electrical characterist applications



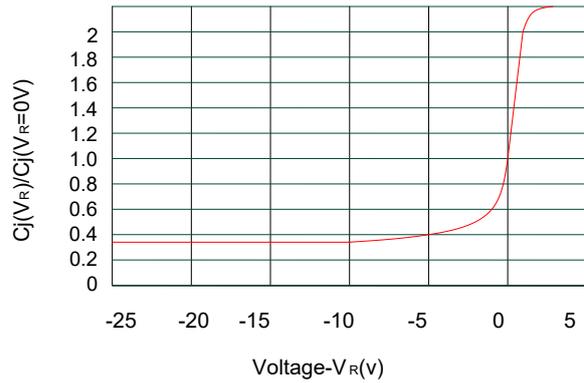
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



Junction Capacitance vs. Reverse Voltage

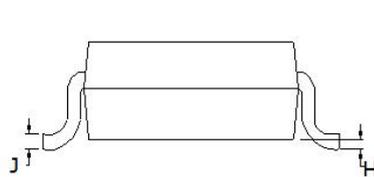
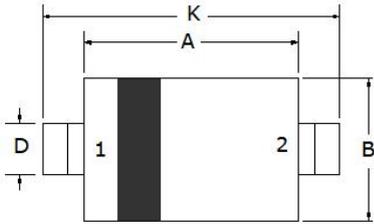
Package Information

SOD-323

Mechanical Data

Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	1.60	1.80
B	1.2	1.40
C	0.80	0.90
D	0.25	0.35
E	0.15REF	
H	0	0.10
J	0.08	0.15
K	2.50	2.70

Recommended Pad outline

