

# ECTHCDW5VB

## 4-Line TVS Diode

The ECTHCDW5VB is a 5V TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The ECTHCDW5VB complies with the IEC 61000-4-2 (ESD) standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 6-Pin lead-free SOT-363 package. The low clamping voltage array make it ideal for use in portable electronics such as cell phones, PDAs, and digital cameras.

### Features

- Protects four I/O lines
- Low capacitance
- Working voltages : 5V
- Low leakage current
- ROHS compliant

### Main applications

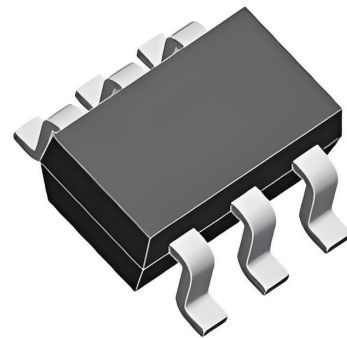
- Peripherals
- Industrial Equipment
- Notebook Computers
- Portable Instrumentation
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs) and Pagers

### Protection solution to meet

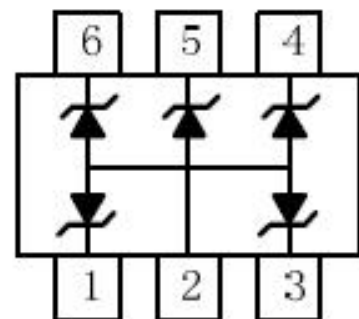
- IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- IEC61000-4-5 (Lightning) 8A (8/20 $\mu\text{s}$ )

### Ordering Information

Device	Qty per Reel	Reel Size
ECTHCDW5VB	3000	7 Inch



SOT-363



Pin Configuration

<b>Maximum ratings (Temp=25°C Unless Otherwise Specified)</b>			
<b>Parameter</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
Peak Pulse Power (tp=8/20µs waveform)	P <sub>PPP</sub>	100	Watts
Peak Pulse Current(tp=8/20µs waveform)	I <sub>PP</sub>	8	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°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.

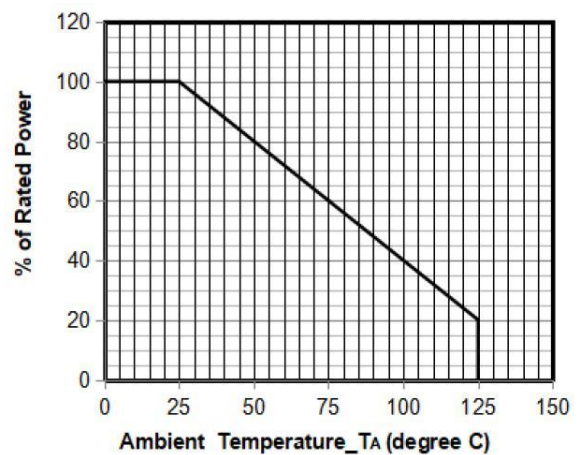
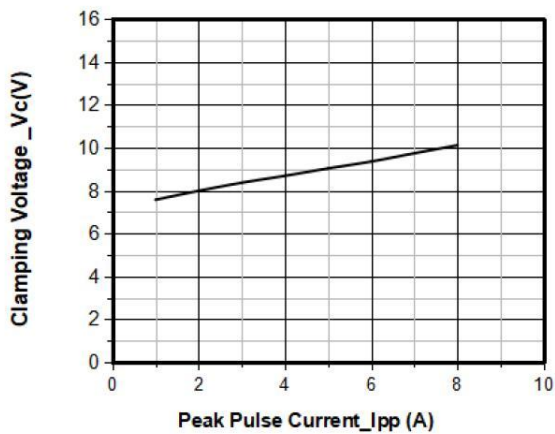
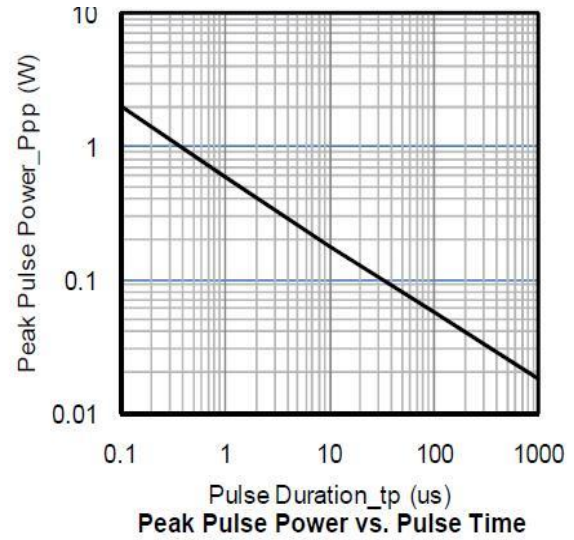
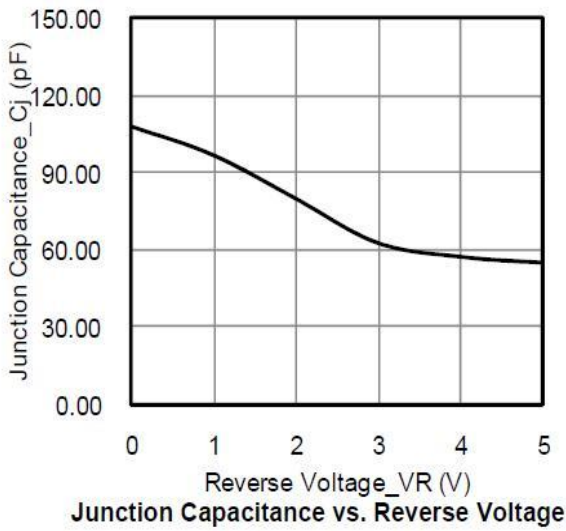
\*Other voltages may be available upon request.

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

<b>Electrical characteristics ( Temp=25°C Unless Otherwise Specified)</b>						
<b>Symbol</b>	<b>Parameter</b>	<b>Conditions</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Units</b>
V <sub>RWM</sub>	Reverse Working Voltage	Any I/O to Ground			5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA, Any I/O to Ground	6.0		8.5	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V Any I/O to Ground			0.2	µA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, tp =8/20µs, any I/O pin to Ground			9.0	V
		I <sub>PP</sub> = 8A, tp =8/20µs, any I/O pin to Ground			15.0	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to Ground			130	pF

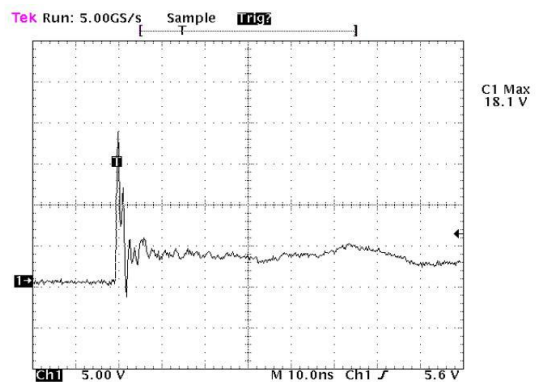
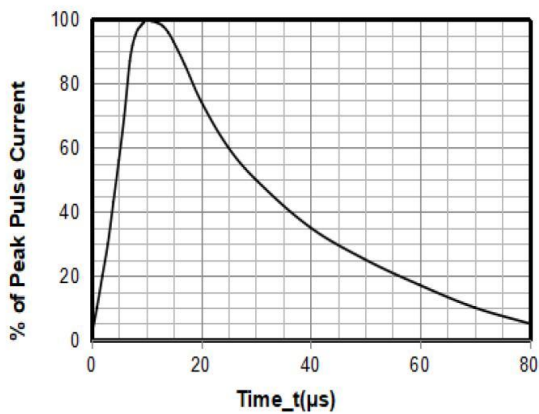
Junction capacitance is measured in VR=0V,F=1MHZ

**Typical electrical characterist applications**



**Clamping Voltage vs. Peak Pulse Current**

**Power Derating Curve**



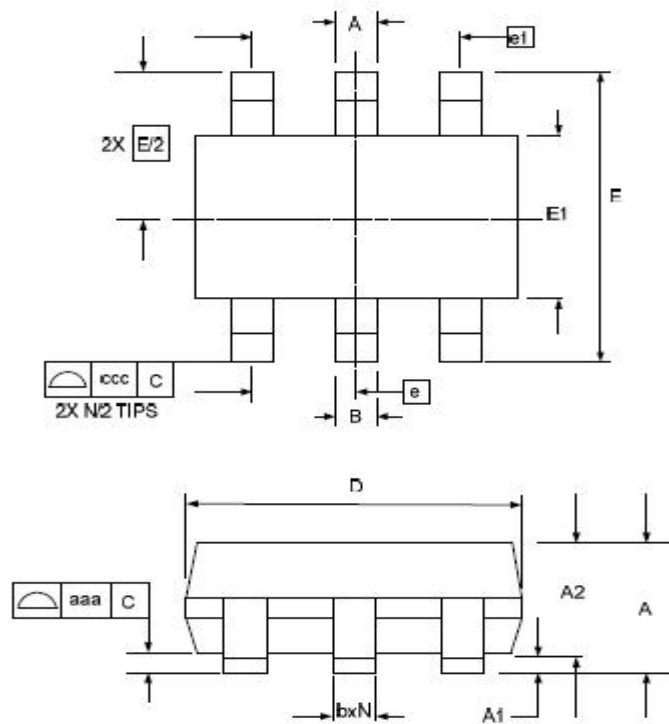
Note: Data is taken with a 10x attenuator

**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**

## Package Information

## SOT-363



SYM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	.043	-	-	1.10
A1	.000	-	.004	0.00	-	0.10
A2	.028	.035	.039	0.70	0.79	1.00
b	.006	-	.012	0.15	-	0.30
c	0.03	-	.009	0.08	-	0.22
D	.075	.079	.087	1.90	2.00	2.20
E1	.045	.049	.053	1.15	1.25	1.35
E	.083BSC			2.10BSC		
e	.026BSC			0.65BSC		
e1	.051BSC			1.30BSC		
L	.010	.014	.018	0.26	0.36	0.46
L1	(.017)			(0.42)		
N	6			6		
$\theta$	0°	-	8°	0°	-	8°