

## TQEHD3125V0

Ultra-low Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

### ● Description

The TQEHD3125V0 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

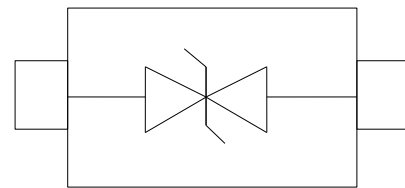
### ● Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

### ● Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 80 Watts @8x20\_s Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- IEC61000-4-2(ESD)±15kV(air),±8kV(contact)
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection

### ● PIN configuration



SOD-523

### ORDERING INFORMATION

Device	Qty per Reel	Marking	Reel Size
TQEHD3125V0	3000	LB	7Inch

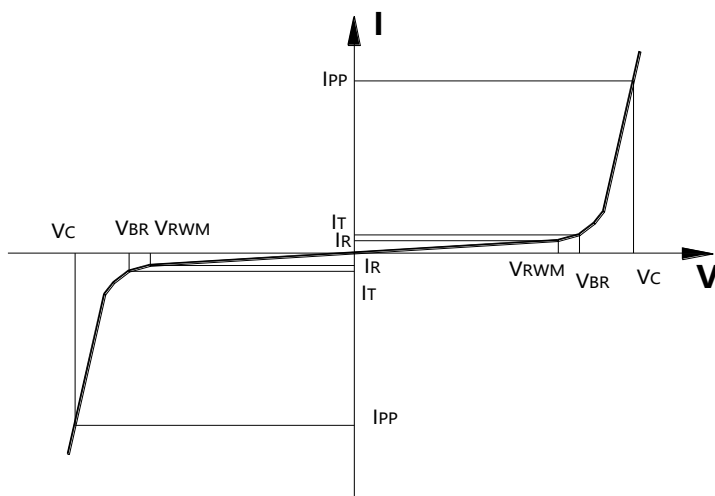
Maximum ratings (Temp=25°C Unless Otherwise Specified)			
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P <sub>PPP</sub>	35	Watts
Peak Pulse Current(tp=8/20µs waveform)	I <sub>PP</sub>	2	A
ESD Rating per IEC61000-4-2:	Contact	8	KV
	Air	15	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C

Operating Temperature Range	$T_J$	-55 ~ 150	°C
Storage Temperature Range	$T_{STG}$	-55 ~ 150	°C

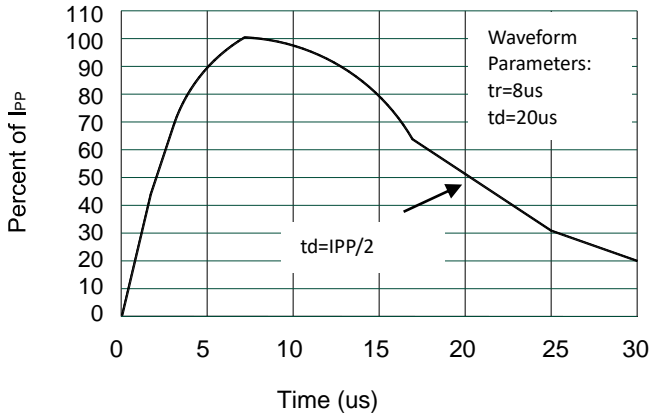
### Electrical characteristics ( $T_{amb}=25^{\circ}C$ Unless Otherwise Specified)

Device	$V_{RWM}$	$I_R @ V_{RWM}$	$V_{BR} @ 1\text{ mA}$	$V_C$	$C$
			Min	@ $I_{PP}=2\text{ A}$	Typ
	(V)	( $\mu A$ )	(Volts)	Type(V)	(pF)
TQEHD3125V0	5.0	1.0	6.0	14	3

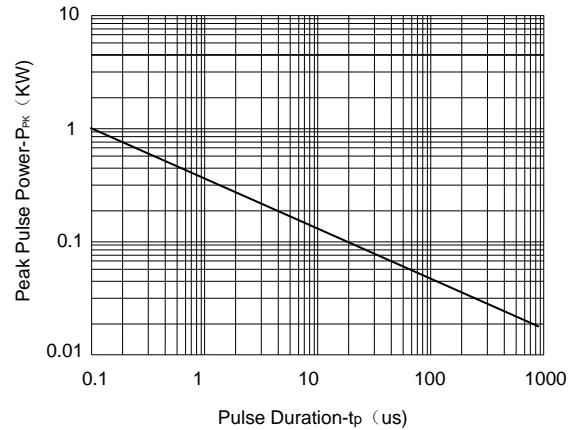
Symbol	Parameter
$V_{RWM}$	Working Peak Reverse Voltage
$V_{BR}$	Breakdown Voltage @ $I_T$
$V_C$	Clamping Voltage @ $I_{PP}$
$I_T$	Test Current
$I_{RM}$	Leakage current at $V_{RWM}$
$I_{PP}$	Peak pulse current
$C_O$	Off-state Capacitance
$C_J$	Junction Capacitance



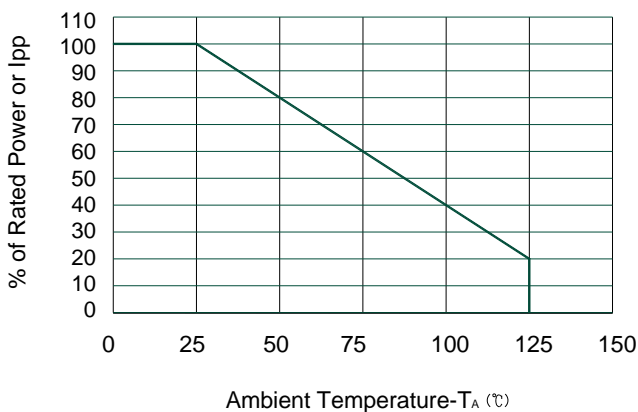
## Typical electrical characterist applications



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

### Application Note

Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

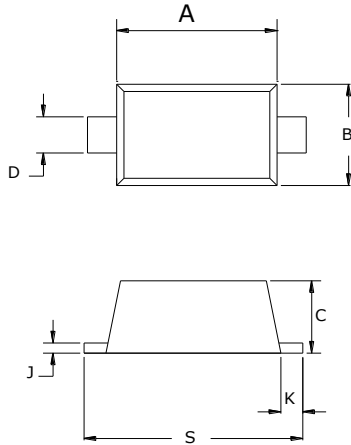
Surface mount TVS offers the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal lines to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The TQEHD3125V0 is the ideal board level protection of ESD sensitive semiconductor components.

The tiny SOD-523 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.

## Mechanical Data

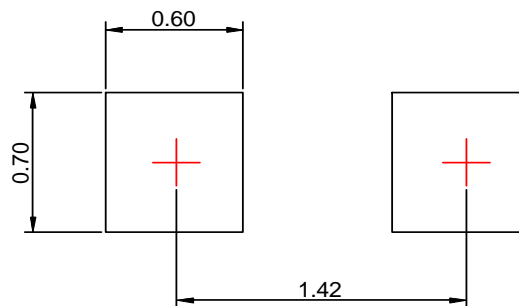
Case:SOD-523

Case Material: Molded Plastic. UL Flammability



Dim <sup>Ⓢ</sup>	Millimeters <sup>Ⓢ</sup>	
	Min <sup>Ⓢ</sup>	Max <sup>Ⓢ</sup>
<b>A</b> <sup>Ⓢ</sup>	1.10 <sup>Ⓢ</sup>	1.30 <sup>Ⓢ</sup>
<b>B</b> <sup>Ⓢ</sup>	0.75 <sup>Ⓢ</sup>	0.85 <sup>Ⓢ</sup>
<b>C</b> <sup>Ⓢ</sup>	0.50 <sup>Ⓢ</sup>	0.70 <sup>Ⓢ</sup>
<b>D</b> <sup>Ⓢ</sup>	0.25 <sup>Ⓢ</sup>	0.35 <sup>Ⓢ</sup>
<b>J</b> <sup>Ⓢ</sup>	0.08 <sup>Ⓢ</sup>	0.15 <sup>Ⓢ</sup>
<b>K</b> <sup>Ⓢ</sup>	0.15 <sup>Ⓢ</sup>	0.25 <sup>Ⓢ</sup>
<b>S</b> <sup>Ⓢ</sup>	1.50 <sup>Ⓢ</sup>	1.70 <sup>Ⓢ</sup>

## Recommended Pad outline



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