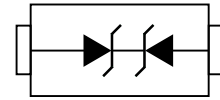


## Description

The PESDUC5D5VB protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



## Feature

- 100W peak pulse power per line ( $t_P = 8/20\mu s$ )
- Bidirectional configurations
- Response time is typically  $< 1ns$
- High ESD protection
- Low clamping voltage
- Transient protection for data lines to IEC 61000-4-2(ESD)  $\pm 18kV$ (air),  $\pm 15kV$ (contact); IEC 61000-4-4(EFT) 5A (5/50ns)

## Applications

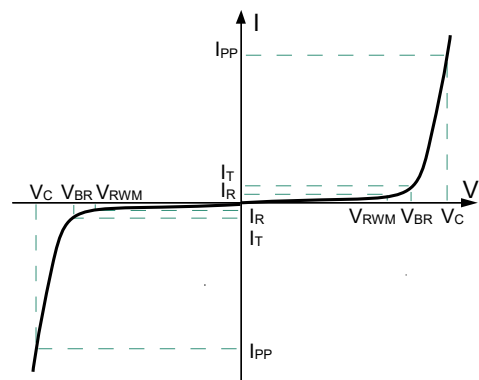
- Cellular phones
- Portable devices
- Digital cameras
- Power supplies
- Bidirectional configurations

## Mechanical Characteristics

- Lead finish: 100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature: 260 °C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17  $\mu m$
- Pin flatness:  $\leq 3mil$

## Electronics Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C_J$	Junction Capacitance
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



**Electrical characteristics per line@25°C (unless otherwise specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	5.6		8.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V, T=25°C$			1.0	$\mu A$
Clamping Voltage <sup>1)</sup>	$V_C$	TLP = 16A , $t_p = 100ns$		28.1		V
Clamping Voltage <sup>2)</sup>	$V_C$	$I_{PP} = 1A, t_p = 8/20\mu s$			12	V
	$V_C$	$I_{PP} = 5A, t_p = 8/20\mu s$			20	V
Junction Capacitance	$C_j$	$V_R=0V, f = 1MHz$		0.4		pF

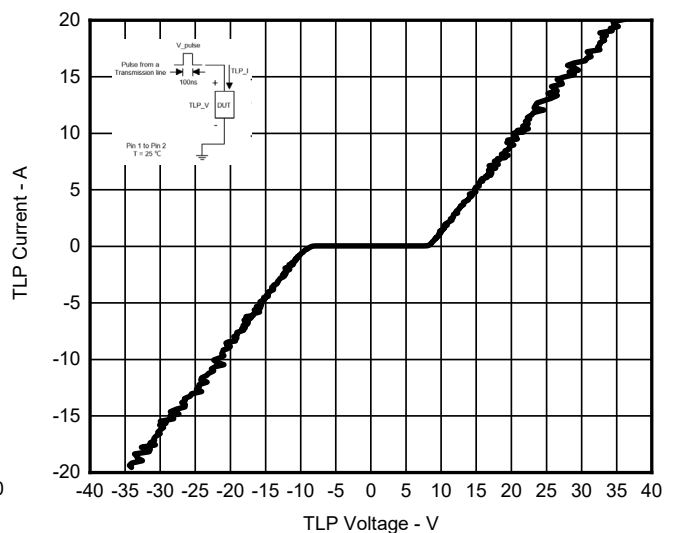
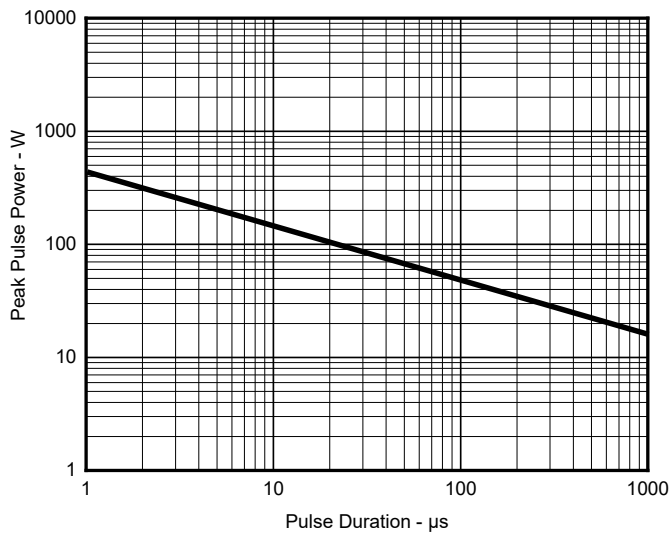
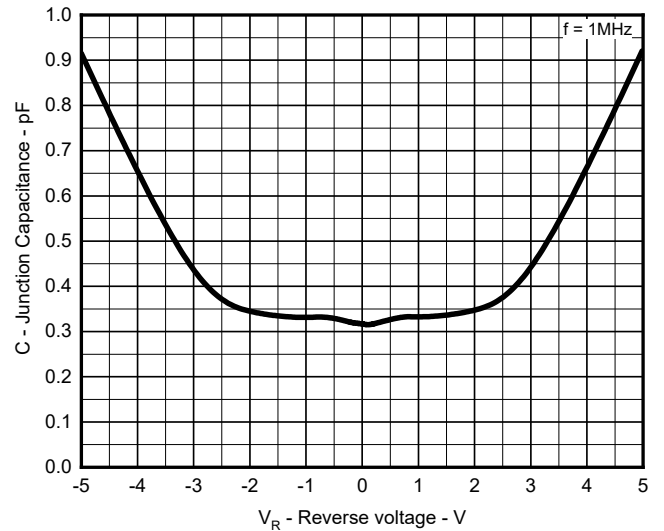
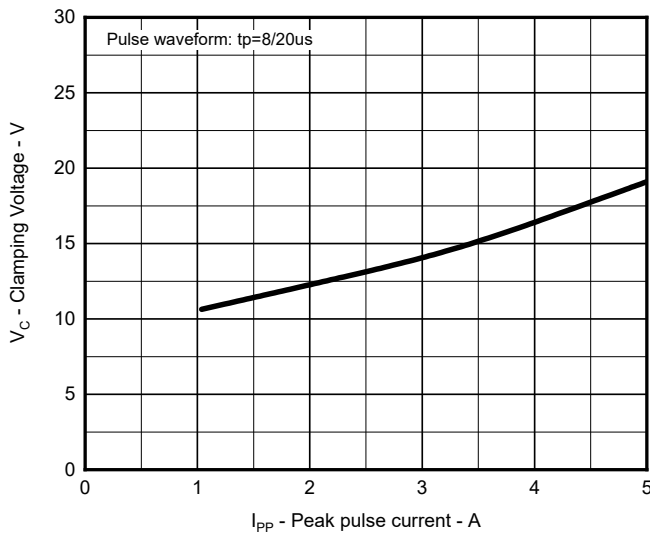
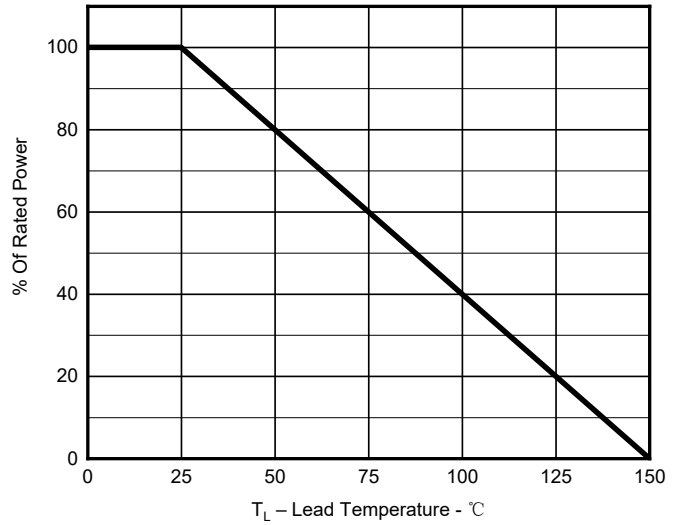
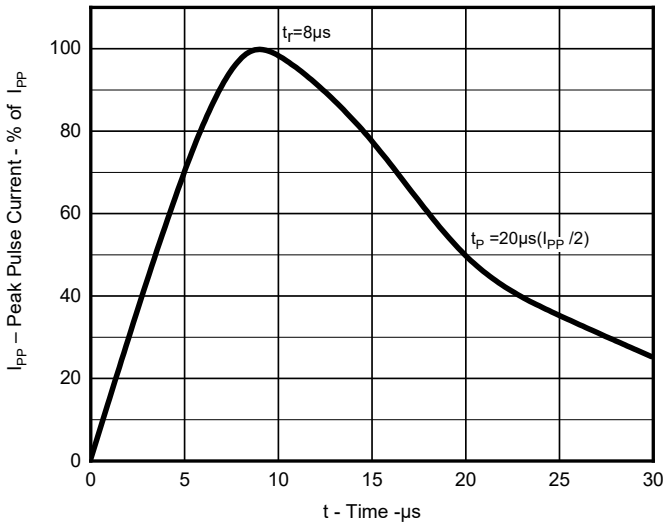
Notes:

1. TLP parameter:  $Z_0=50\Omega, t_p=100ns, t_r=2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.
2. Non-repetitive current pulse, according to IEC61000-4-5.

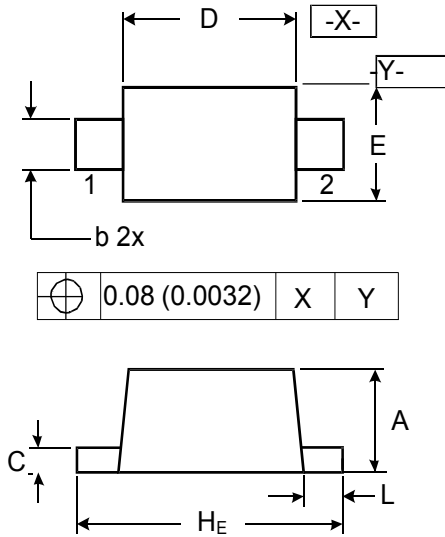
**Absolute maximum rating@25°C**

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	100	W
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	5	A
Lead Soldering Temperature	$T_L$	260 (10 sec)	°C
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	°C
ESD Protection-Contact Discharge	$V_{ESD}$	±15	kV
ESD Protection-Air Discharge	$V_{ESD}$	±18	kV

Typical Characteristics



### Outline Drawing – SOD-523



#### DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
H <sub>E</sub>	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010

### Marking

### Ordering information

Order code	Package	Base qty	Delivery mode
UMW PESDUC5D5VB	SOD-523	3000	Tape and reel

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[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)