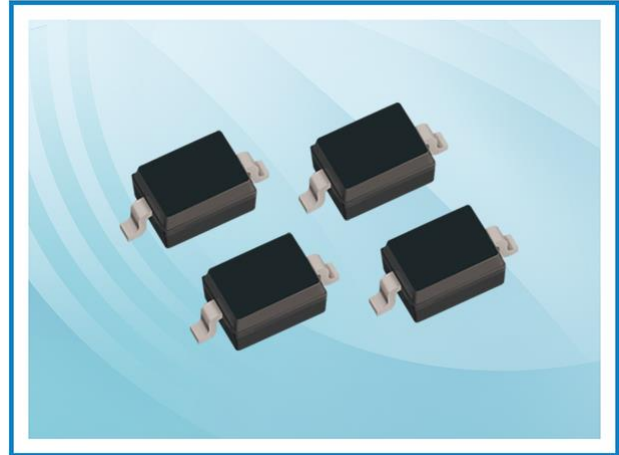


## PTLC05D5B – ESD Protection Diode

### Feature

- 40 Watts peak pulse power (8/20 $\mu$ s)
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (C<sub>j</sub>=2.7 pF typ.)
- Protection one data/power line
- IEC61000-4-2 (ESD)  $\pm$ 15kV (Air),  $\pm$ 10kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 3.5A (8/20 $\mu$ s)



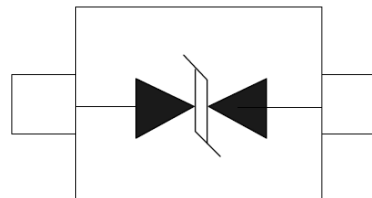
### Applications

- Microprocessor based equipment
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Personal Digital Assistant (PDA)
- Cell Phone Handsets and Accessories

### Mechanical Data

- SOD523 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

### Schematic and PIN Configuration



SOD-523

### Maximum Rating

Parameter	Symbol	Limit	Unit
IEC61000-4-2 ESD Voltage – Air Mode	V <sub>ESD</sub> <sup>(1)</sup>	$\pm$ 15	kV
IEC61000-4-2 ESD Voltage – Contact Mode		$\pm$ 10	
Peak Pulse Power	P <sub>PP</sub> <sup>(2)</sup>	40	W
Peak Pulse Current	I <sub>PP</sub> <sup>(2)</sup>	3.5	A
Maximum Lead Solder Temperature (10 seconds duration)	T <sub>L</sub>	260	°C
Junction Temperature	T <sub>J</sub>	-55~125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C

Note:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20 $\mu$ s exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of TA = 25 °C unless otherwise noted.

## PTLC05D5B – ESD Protection Diode

### Electrical Characteristics

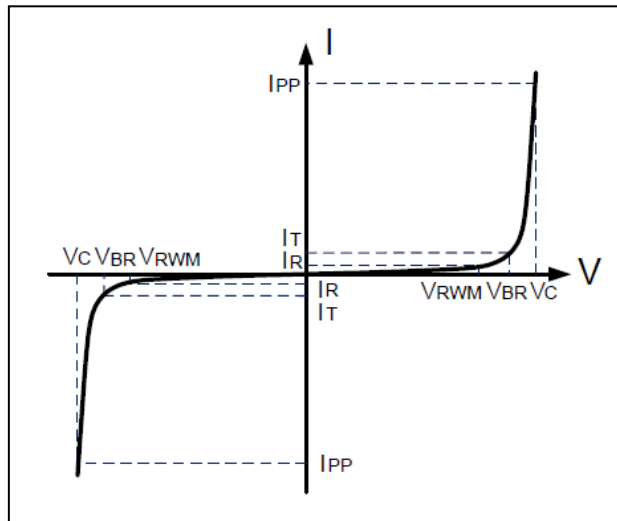
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	$V_{RWM}^{(1)}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	5.5	6.5		V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$		0.1	0.5	$\mu\text{A}$
Clamping Voltage	$V_C^{(2)}$	$I_{PP} = 3.5\text{A}$			11	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$		2.7	3.5	pF

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of  $T_A = 25^\circ\text{C}$  unless otherwise noted.

### Electrical Parameters

Symbol	Parameter
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Reverse Peak Pulse Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{RWM}$	Working Peak Reverse Voltage



## PTLC05D5B – ESD Protection Diode

### Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

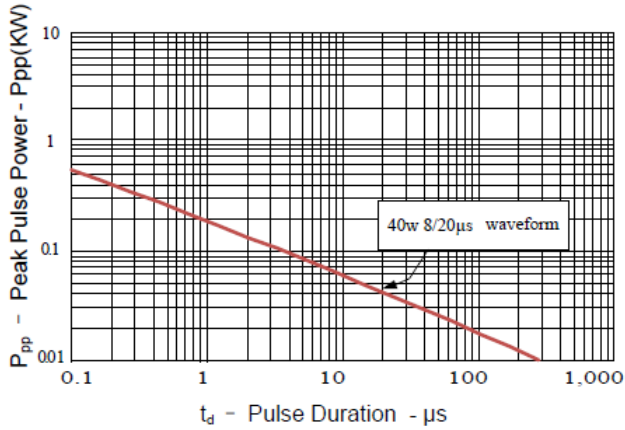


Figure 2: Power Derating Curve

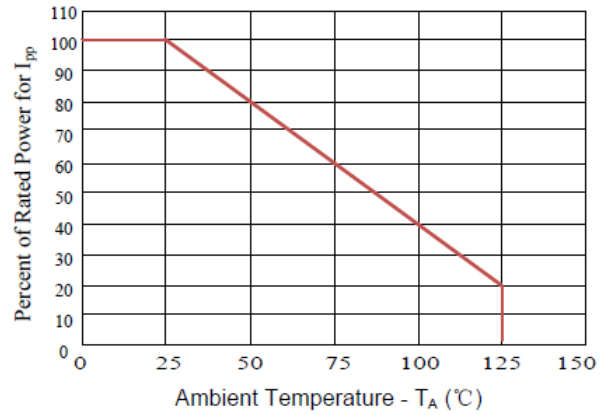


Figure 3: Pulse Waveform

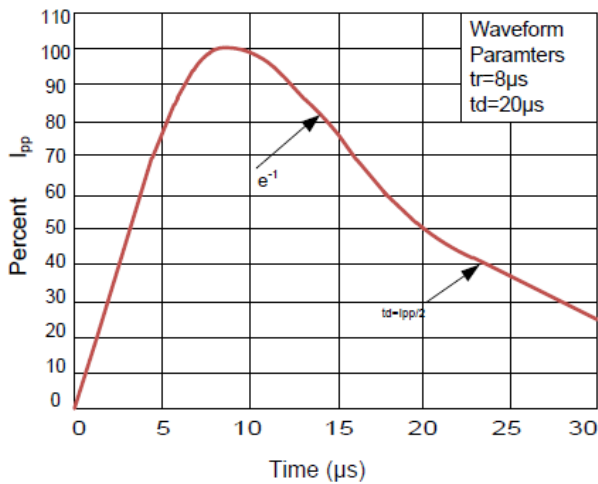
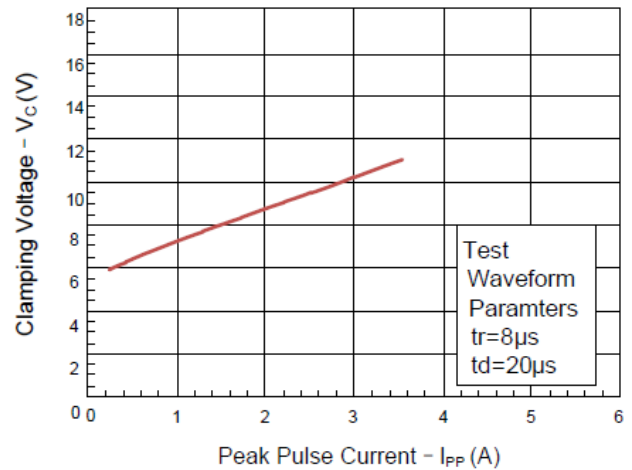
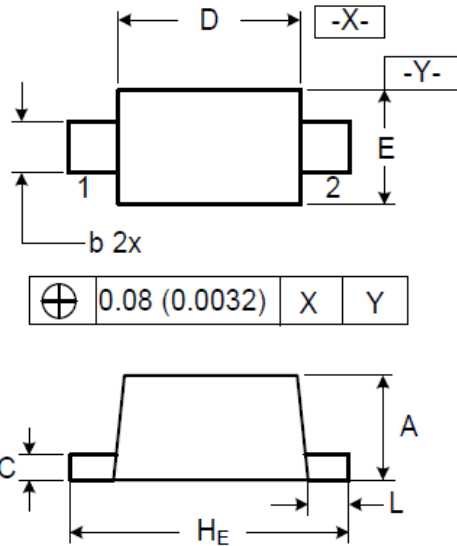


Figure 4: Clamping Voltage vs. Ipp



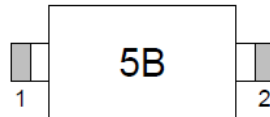
## PTLC05D5B – ESD Protection Diode

### SOD523 Package Outline Dimensions



Symbol	Dimensions (mm)		Dimensions (inch)	
	Min	Max	Min	Max
A	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
C	0.070	0.200	0.0028	0.0079
D	1.100	1.300	0.043	0.051
E	0.700	0.900	0.028	0.035
H <sub>E</sub>	1.500	1.700	0.059	0.067
L	0.150	0.250	0.006	0.010

### Marking



### Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PTLC05D5B	SOD523	7 inch	5,000