

## PTLC05R – ESD Protection Diode

### Feature

- 100 Watts peak pulse power (8/20 $\mu$ s)
- Tiny SOT-143 Package
- Unidirectional Configuration
- Protect two I/O lines
- Solid state silicon-avalanche technology
- Low operating voltage: 5V
- Low capacitance ( $C_j = 0.3$  pF typ I/O to I/O)
- IEC61000-4-2 (ESD)  $\pm 20$ kV (Air),  $\pm 15$ kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 6A (8/20 $\mu$ s)



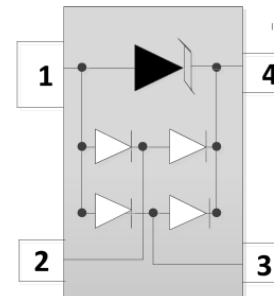
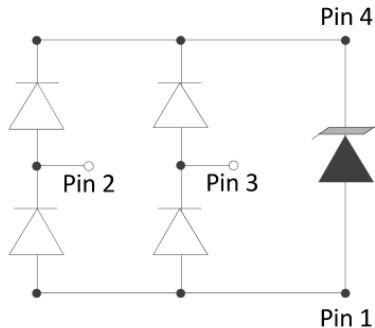
### Applications

- USB2.0
- Ethernet
- Notebooks, Desktops and Servers
- Video Line Protection

### Mechanical Data

- JEDEC SOT-143 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

### Schematic and PIN Configuration



### Maximum Rating

Parameter	Symbol	Limit	Unit
IEC61000-4-2 ESD Voltage – Air Mode	$V_{ESD}^{(1)}$	$\pm 20$	kV
IEC61000-4-2 ESD Voltage – Contact Mode		$\pm 15$	
Peak Pulse Power	$P_{PP}^{(2)}$	100	W
Peak Pulse Current	$I_{PP}^{(2)}$	6	A
Maximum Lead Solder Temperature (10 seconds duration)	$T_L$	260	$^{\circ}$ C
Junction Temperature	$T_J$	-55~125	$^{\circ}$ C
Storage Temperature Range	$T_{stg}$	-55~125	$^{\circ}$ 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  $T_A = 25^{\circ}$ C unless otherwise noted.



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### Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

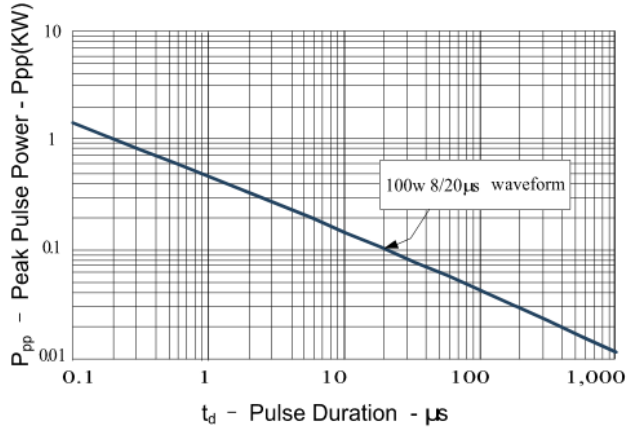


Figure 2: Power Derating Curve

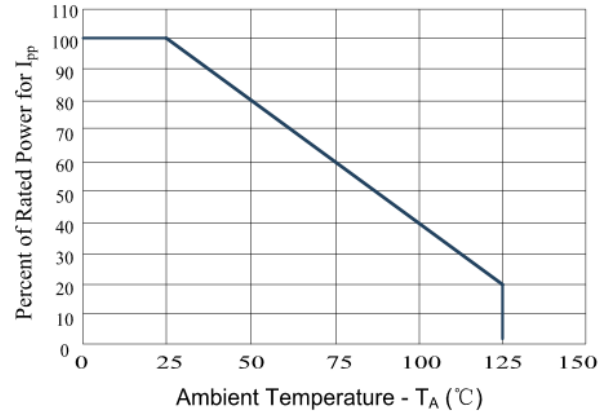


Figure 3: Pulse Waveform

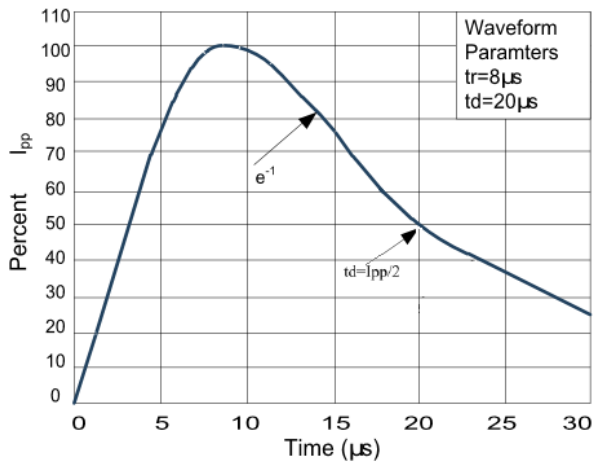
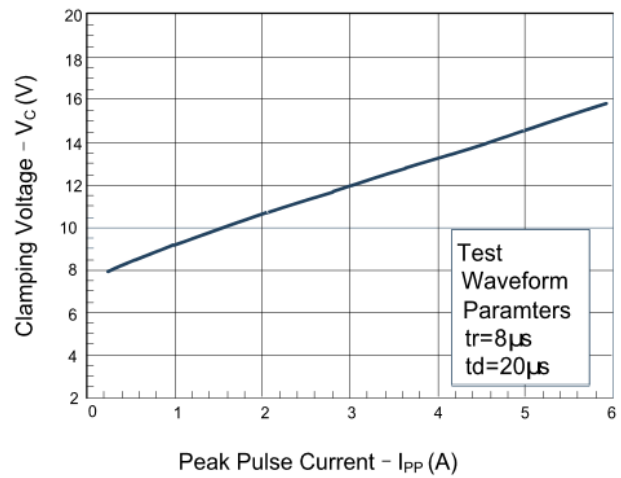
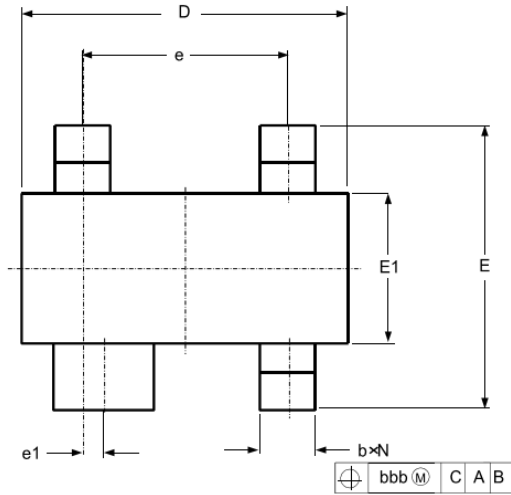


Figure 4: Clamping Voltage vs. I\_pp

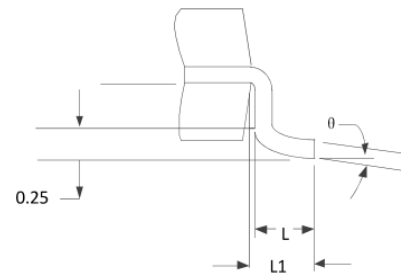
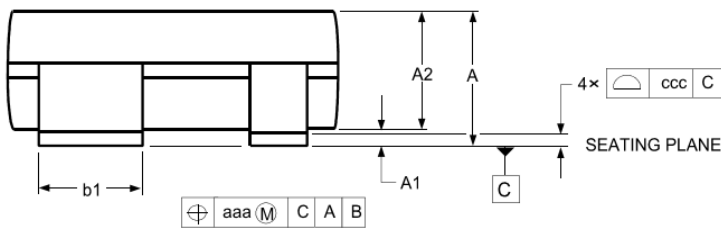


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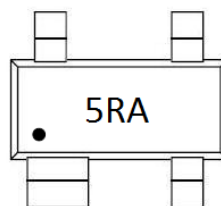
### SOT-143 Package Outline Dimensions



Symbol	Dimensions (mm)	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
b1	0.750	0.900
c	0.080	0.150
D	2.800	3.000
e	1.800	2.000
e1	0.200 TYP	
E	2.250	2.550
E1	1.200	1.400
L1	0.550 REF	
L	0.300	0.500
$\theta$	0°	8°



### Marking



### Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PTLC05R	SOT-143	7 inch	3,000