

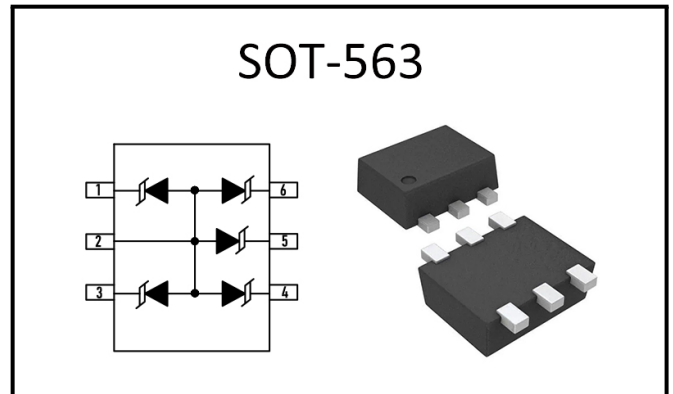
TPD4E001DRLR-N

ESD Protection Diode

Features

- 70Watts peak pulse power ($t_p = 8/20\mu s$)
- Solid-state silicon-avalanche technology
- Low clamping Voltage
- Low leakage current
- Low capacitance ($C_j = 0.25 \text{ pF typ IO/IO.}$)
- Protection one data/power line
- IEC 61000-4-2 $\pm 15\text{kV}$ contact ; $\pm 20\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4.0A (8/20 μs)

Package



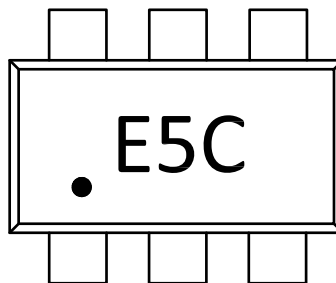
Applications

- Ethernet
- Digital Visual Interface (DVI)
- USB2.0
- Notebook and PC Computers

Mechanical Characteristics

- SOT563 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
TPD4E001DRLR-N	SOT-563	3k	Tape and reel

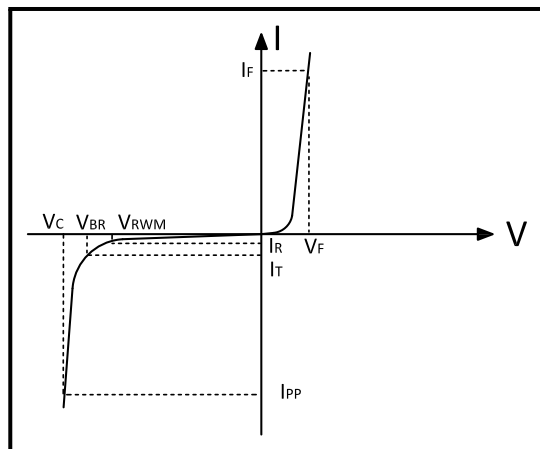


TPD4E001DRLR-N

ESD Protection Diode

Electrical Parameters ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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



Note: 8/20us pulse Waveform.

Absolute Maximum Rating

Rating	Symer	Value	Units
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	70	Watts
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	4.0	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	20	KV
ESD per IEC 61000-4-2 (Contact)		15	
Lead Soldering Temperature	T_L	260(10seconds)	$^\circ\text{C}$
Junction Temperature	T_J	-55 to + 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$

Electrical Characteristics

Parameter	Symer	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}	—	—	—	5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6	7.2	9.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}, T = 25^\circ\text{C}$	—	—	0.2	μA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu\text{s}$	—	—	4.0	A
Clamping Voltage	V_C	$I_{PP} = 4.0\text{A}, t_p = 8/20\mu\text{s}$	—	14	17	V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}, \text{IO to IO}$	—	0.25	0.35	pF
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}, \text{IO to GND}$	—	0.5	0.7	pF



Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

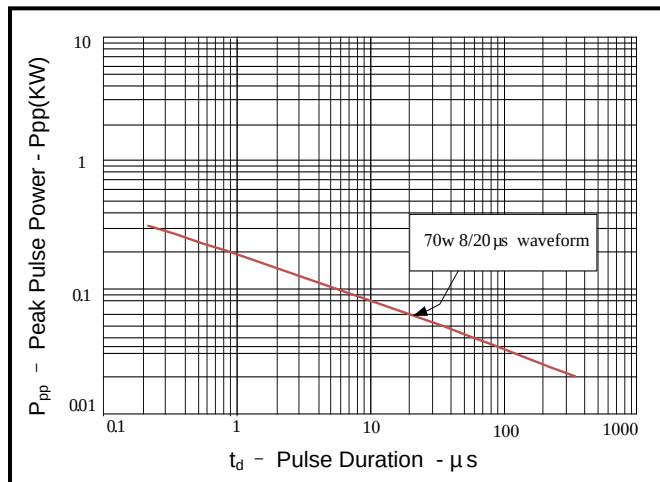


Figure 2: Power Derating Curve

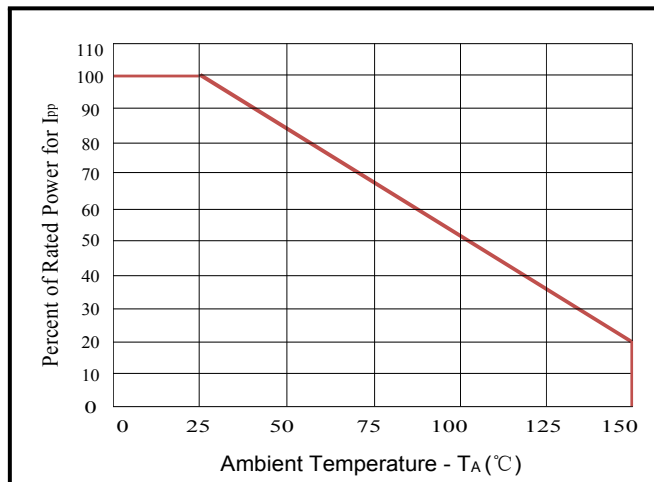


Figure 3: Pulse Waveform

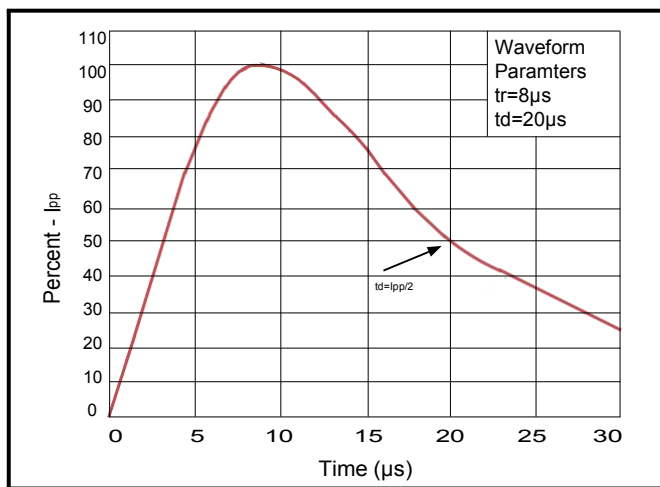
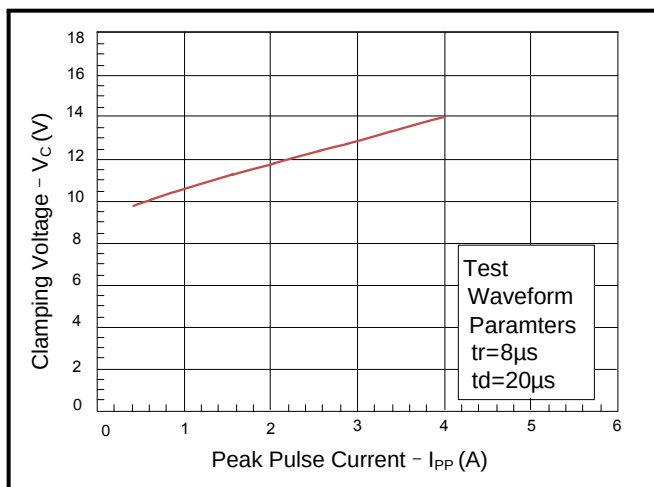


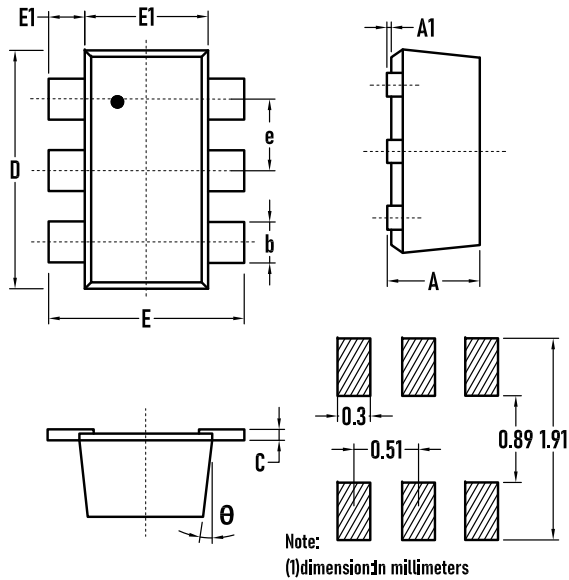
Figure 4: Clamping Voltage vs. Ipp



TPD4E001DRLR-N

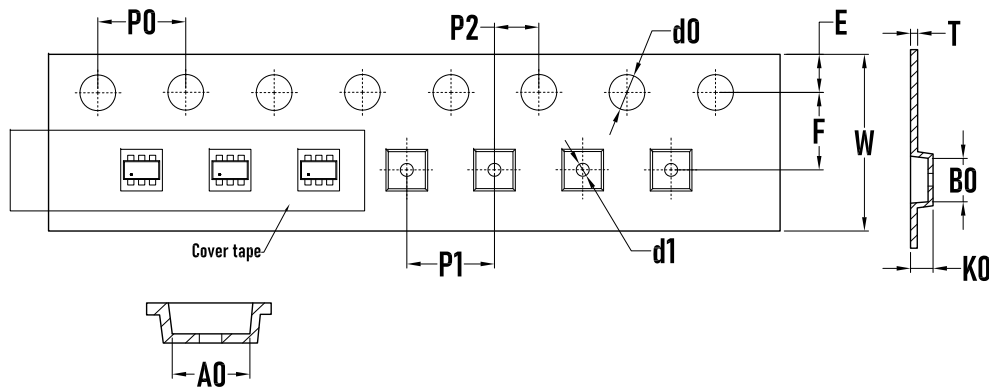
ESD Protection Diode

Outline Drawing – SOT-563



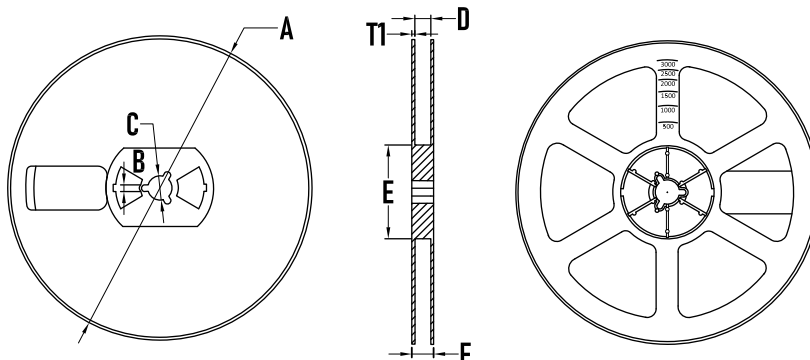
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
C	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E	1.500	1.700	0.059	0.067
E1	1.100	1.300	0.043	0.051
L	0.100	0.300	0.004	0.012
θ	0°	7°	0°	7°

Packaging Tape - SOT-563



SYMBOL	MILLIMETER
A0	3.25±0.1
B0	3.3±0.1
d0	1.55±0.1
d1	1.0±0.1
E	1.75±0.1
F	3.50±0.1
K0	1.38±0.1
P	4.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	8.00±0.2
T	0.2±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

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