

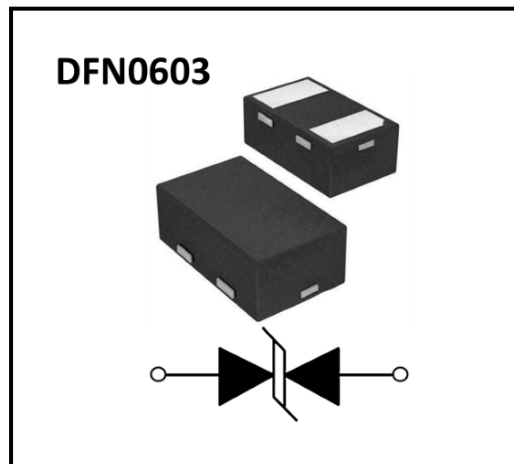
BDFN1C241U

ESD Protection Diode

Features

- 90Watts peak pulse power ($t_p = 8/20\mu s$)
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping Voltage
- Low leakage current
- Low capacitance ($C_j = 0.3pF$ typ.)
- Protection one data/power line
- IEC 61000-4-2 $\pm 12kV$ contact ; $\pm 15kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 2.0A (8/20 μs)

Package



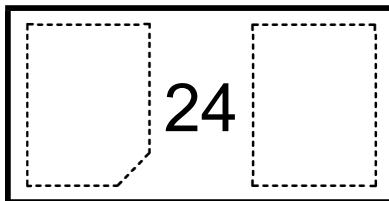
Applications

- USB3.0, HDMI2.0, Thunderbolt
- Notebooks, Desktops, and Servers
- Portable Instrumentation

Mechanical Characteristics

- DFN0603 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
BDFN1C241U	DFN0603-2L	10k	Tape and reel

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Specifications are subject to change without notice.

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

Revision: 2022-Jan-1-A

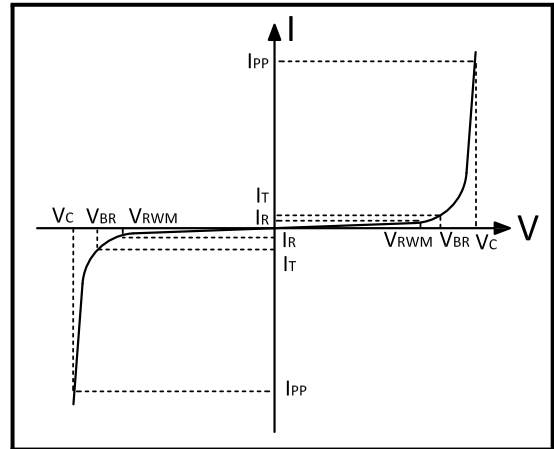


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ESD Protection Diode

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	Symler	Value	Units
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	90	Watts
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	2.0	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	15	KV
ESD per IEC 61000-4-2 (Contact)		12	
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	Symler	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}	—	—	—	24	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26.7	29.0	32.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}, T = 25^\circ\text{C}$	—	—	0.5	μA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu\text{s}$	—	—	2.0	A
Clamping Voltage	V_C	$I_{PP} = 2.0\text{A}, t_p = 8/20\mu\text{s}$	—	40	45	V
Junction Capacitance	C_j	$V_R = 0\text{V}, T = 25^\circ\text{C}, f = 1\text{MHz}$	—	0.3	0.5	pF



Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

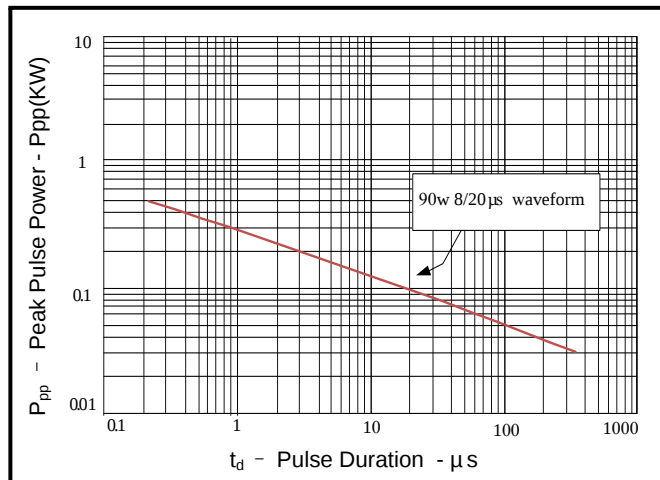


Figure 2: Power Derating Curve

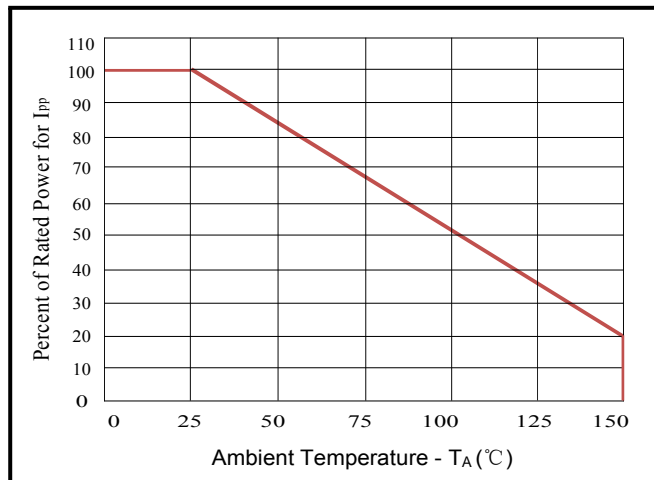


Figure 3: Pulse Waveform

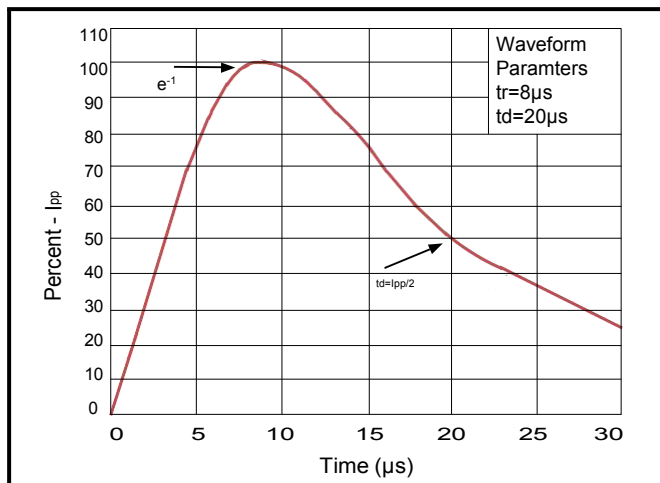
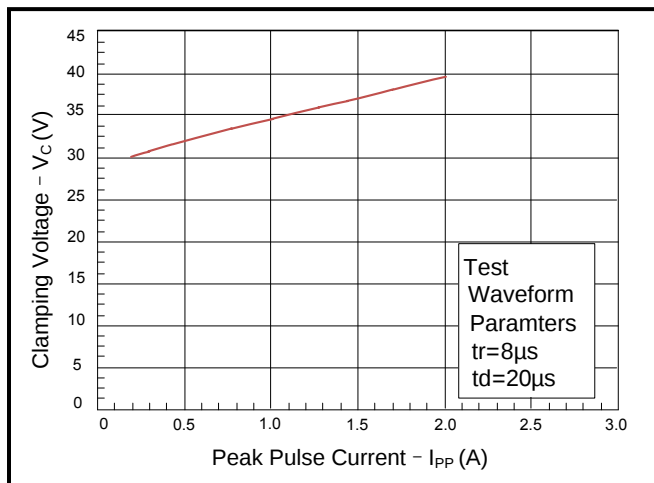


Figure 4: Clamping Voltage vs. I_pp



ESD Protection Diode

Technical drawings of the 1000 Series LED strip light showing dimensions:

- Top View:** Shows a rectangular strip with overall width D and height E . It features two rectangular cutouts, each with a width of b and a height of h . The cutouts are separated by a distance of h .
- Side View:** Shows the profile of the strip with a total height of A . The mounting tabs at the bottom have a height of $A1$. The overall width is C .
- Cross-sectional View:** Shows the internal structure of the strip. The total width is 0.15 , the height of the main body is 0.32 , and the width of the mounting tabs is 0.25 .

SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.28	0.30	0.32
A1	0.00	0.02	0.05
C	0.05	0.10	0.15
D	0.55	0.60	0.65
E	0.25	0.30	0.35
b	0.14	0.19	0.24
L	0.20	0.25	0.30
h	—	0.05	0.10

Technical drawing of a PCB layout showing dimensions and components. The drawing includes a top view of the PCB with dimensions $d0$, $P0$, $P1$, E , F , W , $d1$, and p . A "Cover tape" is indicated. A cross-sectional view shows dimensions T , $B0$, $K0$, and $A0$.

SYMBOL	MILLIMETER
A0	0.39±0.03
B0	0.70±0.03
d0	1.55±0.05
d1	0.20±0.05
E	1.75±0.10
F	3.50±0.04
K0	0.37 ^{+0.03} _{-0.02}
P	2.00±0.10
P0	4.00±0.10
P1	2.00±0.05
W	8.00±0.10
T	0.18±0.03

SYMBOL	MILLIMETER
A	178±2
C	13.0 ^{+0.5} _{-0.2}
D	9.5
E	55±5
F	14.4 max.
Quantity	10000PCS

