

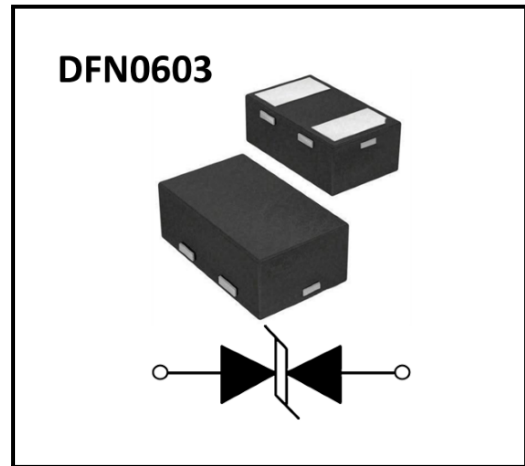
# BDFN1C241U

ESD Protection Diode

## Features

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

## Package



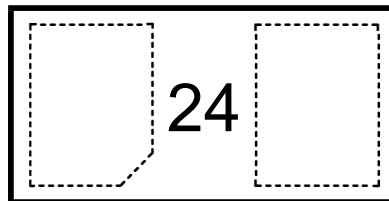
## Applications

- 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

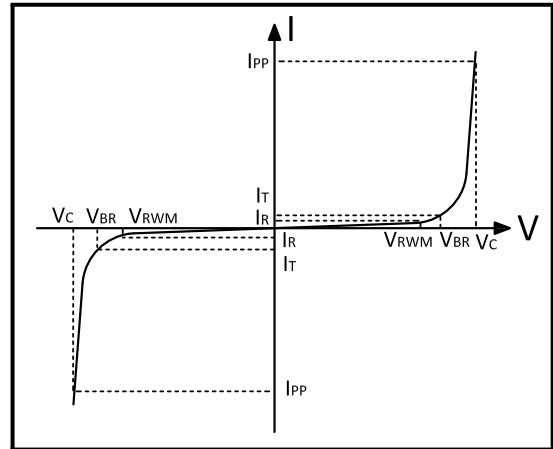


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## Electrical Parameters (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Peak Reverse Working Voltage
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current



Note: 8/20us pulse Waveform.

## Absolute Maximum Rating

Rating	Symler	Value	Units
Peak Pulse Power (tp = 8/20μs)	P <sub>PP</sub>	90	Watts
Peak Pulse Current (tp = 8/20μs)	I <sub>PP</sub>	2.0	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	15	KV
ESD per IEC 61000-4-2 (Contact)		12	
Lead Soldering Temperature	T <sub>L</sub>	260(10seconds)	°C
Junction Temperature	T <sub>J</sub>	-55 to + 150	°C
Storage Temperature	T <sub>stg</sub>	-55 to + 150	°C

## Electrical Characteristics

Parameter	Symler	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V <sub>RWM</sub>	—	—	—	24	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	26.7	29.0	32.0	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =24V, T=25°C	—	—	0.5	uA
Peak Pulse Current	I <sub>PP</sub>	tp = 8/20us	—	—	2.0	A
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =2.0A, tp = 8/20us	—	40	45	V
Junction Capacitance	C <sub>j</sub>	V <sub>R</sub> =0V, T=25°C, f=1MHZ	—	0.3	0.5	pF



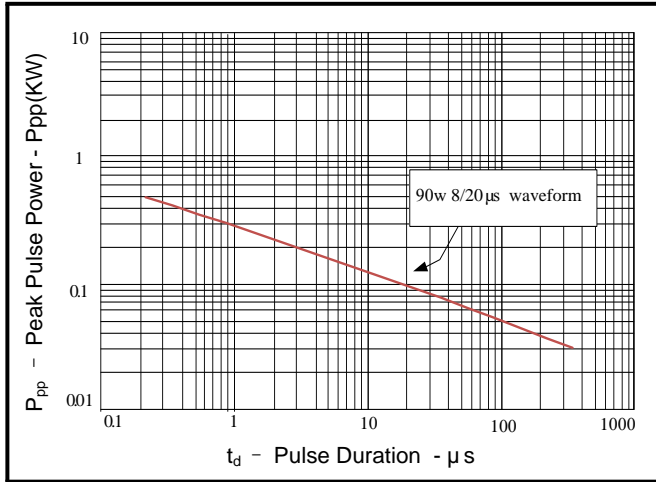


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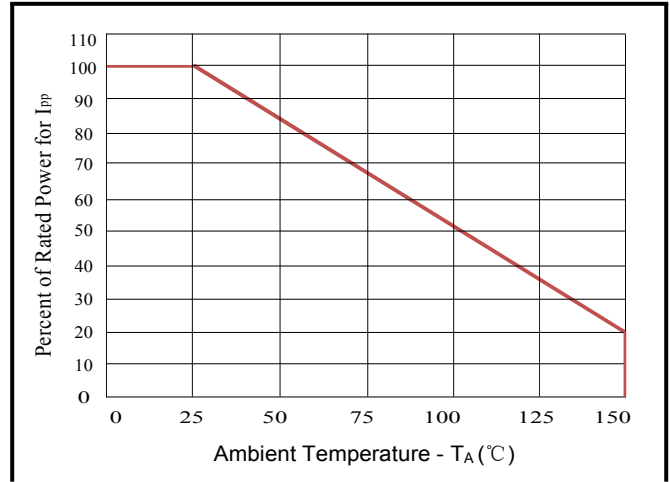
ESD Protection Diode

## Typical Characteristics

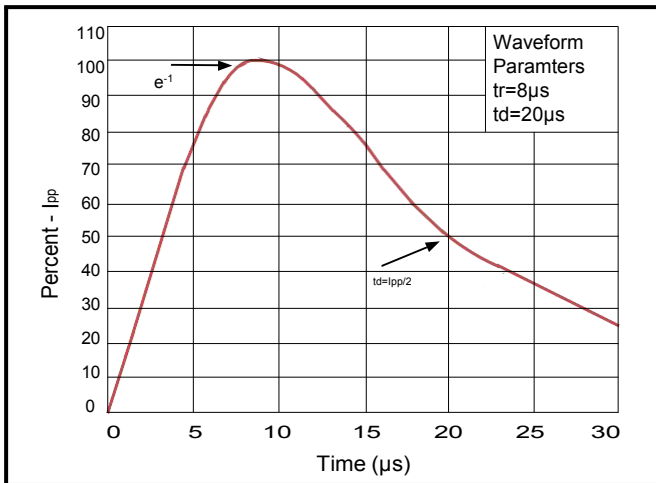
**Figure 1: Peak Pulse Power vs. Pulse Time**



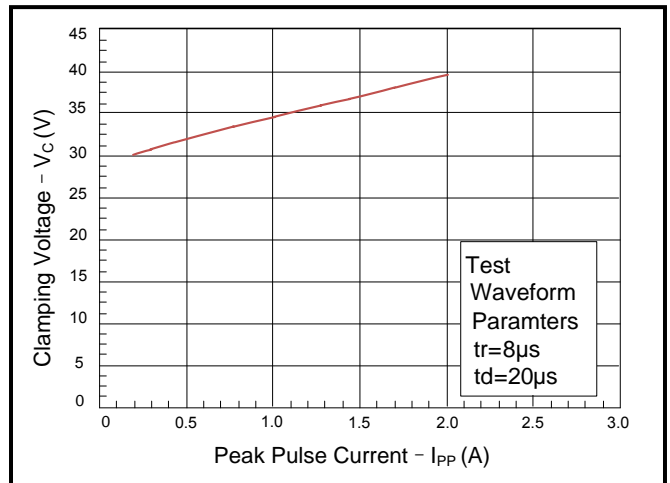
**Figure 2: Power Derating Curve**



**Figure 3: Pulse Waveform**



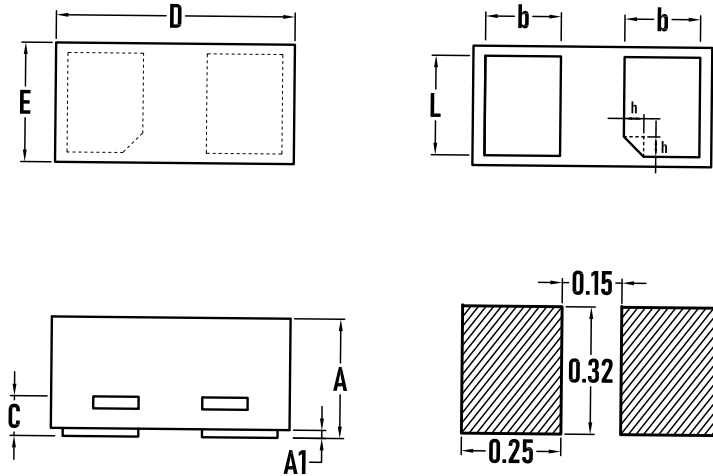
**Figure 4: Clamping Voltage vs. Ipp**



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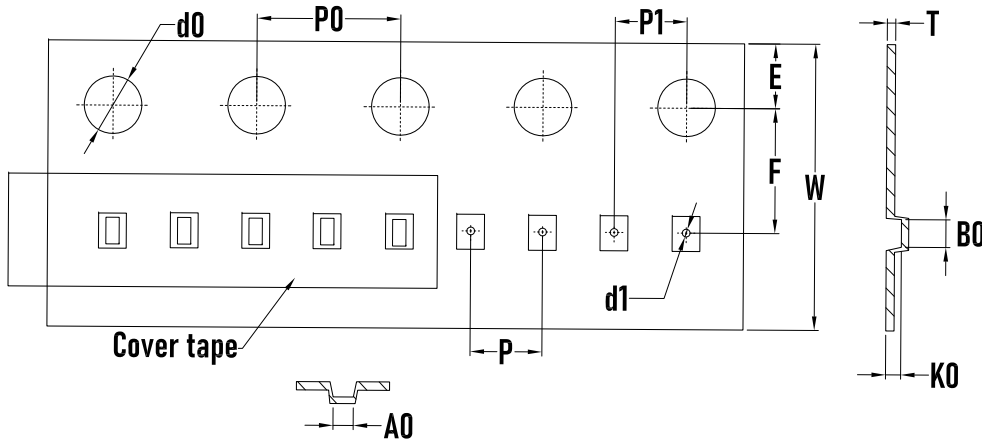
ESD Protection Diode

## Outline Drawing – DFN0603



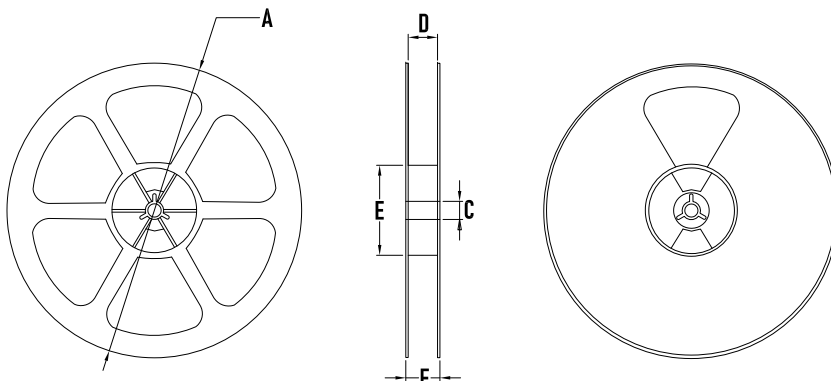
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.28	0.30	0.32
A1	0.00	0.02	0.05
C	0.05	0.10	0.15
D	0.55	0.60	0.65
E	0.25	0.30	0.35
b	0.14	0.19	0.24
L	0.20	0.25	0.30
h	–	0.05	0.10

## Packaging Tape - DFN0603



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 <sup>+0.03</sup> <sub>-0.02</sub>
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

## Packaging Reel



SYMBOL	MILLIMETER
A	178±2
C	13.0 <sup>+0.5</sup> <sub>-0.2</sub>
D	9.5
E	55±5
F	14.4 max.
Quantity	10000PCS

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Revision: 2022-Jan-1-A



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