Description

The DC2071P6 is an Uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The DC2071P6 complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package. The small size and high ESD surge protection make DC2071P6 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Small package: 1.6 x1.0 x0.5mm
- Protects one data or power line
- Operating voltage：20V
- High peak pulse current capability
- Ultra low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
- RoHS Compliant

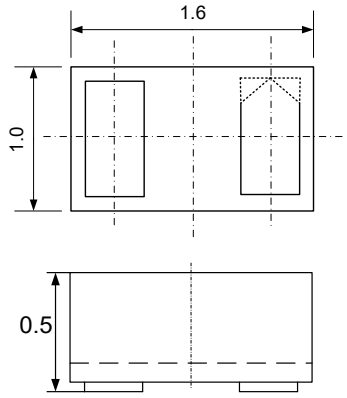
Mechanical Characteristics

- Package: DFN1610-2
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

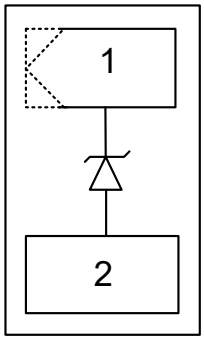
Applications

- Mobile Phones and Accessories
- Battery Protection
- USB VBus
- Power Line Protection
- Hand Held Portable Applications

Dimensions and Pin Configuration

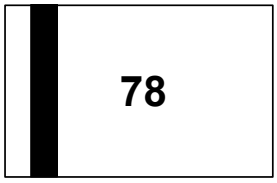


Package Dimensions (mm)



Circuit and Pin Schematic

Marking Information



78= Device Marking Code
Bar denotes Cathode

Ordering Information

Part Number	Marking	Packaging	Reel Size
DC2071P6	78	3000/Tape & Reel	7 inch

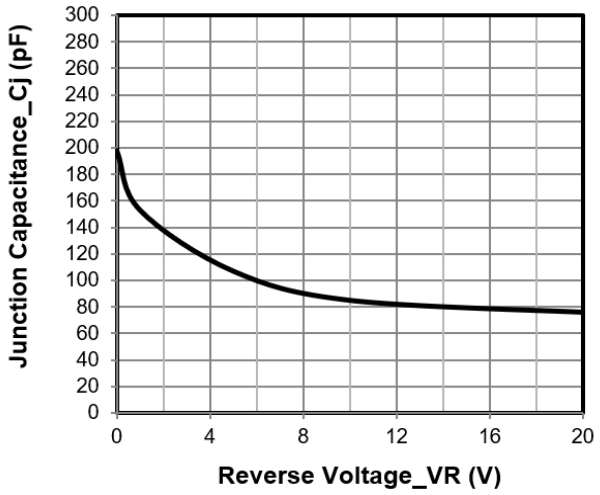
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	Ppk	1000	W
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

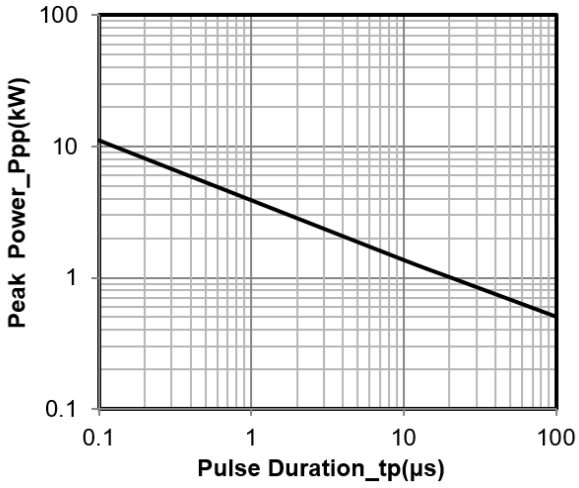
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			20	V	
Breakdown Voltage	V_{BR}	21			V	I_T = 1mA
Reverse Leakage Current	I_R			1	μA	V_{RWM} = 20V
Forward Voltage	V_F			1.2	V	I_F = 10mA
Peak Pulse Current	I_{PP}			30	A	tp = 8/20μs
Clamping Voltage	V_C			24	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			33	V	I_{PP} = 30A (8 x 20μs pulse)
Junction Capacitance	C_J		200		pF	VR = 0V, f = 1MHz

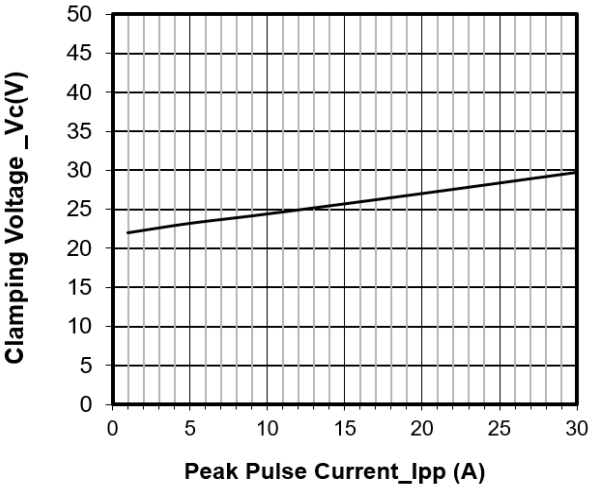
Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



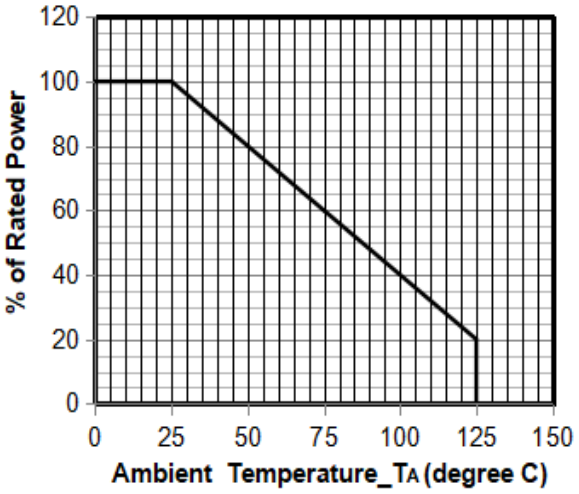
Junction Capacitance vs. Reverse Voltage



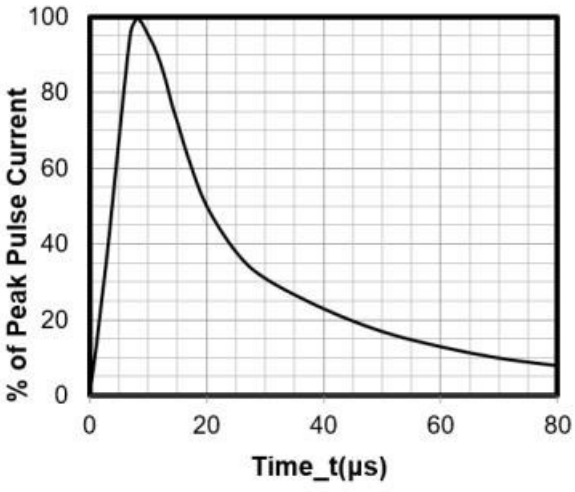
Peak Pulse Power vs. Pulse Time



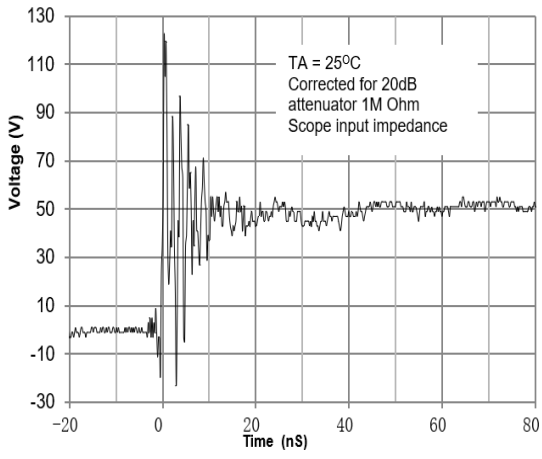
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



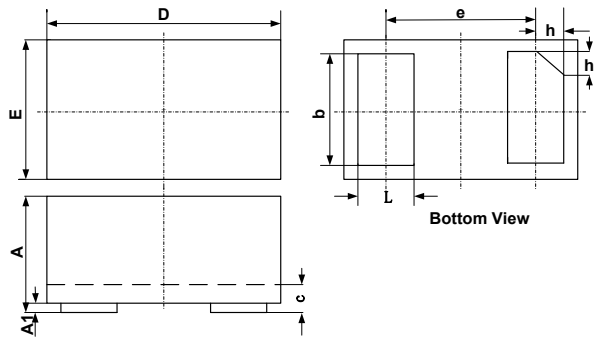
8 X 20μs Pulse Waveform



ESD Clamping Voltage

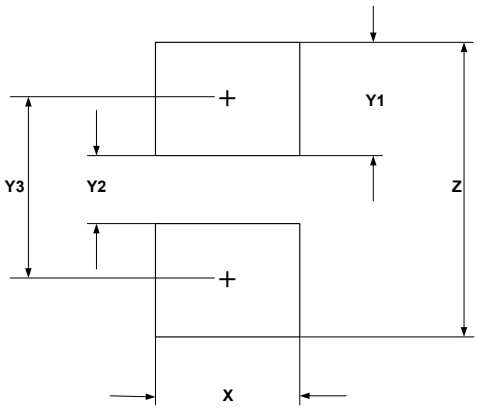
8 kV Contact per IEC61000−4−2

DFN1610-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

Contact Information

Changzhou D-first Electronics CO.,Ltd.
www.first-electronic.com
Email: xhf@first-electronic.cn
Phone: +86（0519）8817 1671