

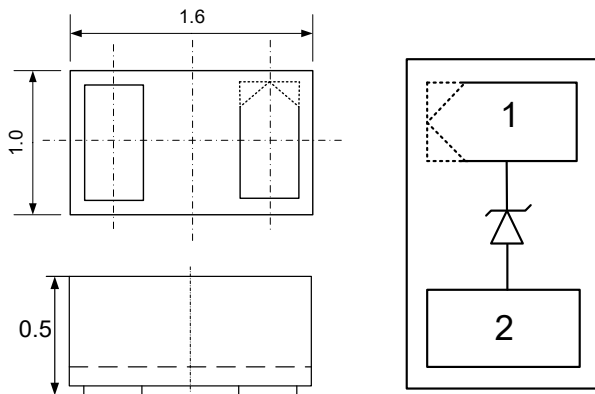
## Description

The DFC2471P6 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 DFC2471P6 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  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 DFC2471P6 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

## 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

## Dimensions and Pin Configuration



Package Dimensions (mm)      Circuit and Pin Schematic

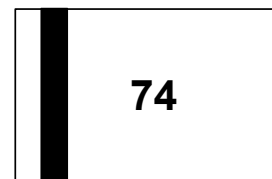
## Features

- ◆ Small package: 1.6 x1.0 x0.5mm
- ◆ Protects one data or power line
- ◆ Operating voltage: 24V
- ◆ 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:  $\pm 30\text{kV}$
  - Contact discharge:  $\pm 30\text{kV}$
- ◆ RoHS Compliant

## Applications

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

## Marking Information



74= Device Marking Code  
Bar denotes Cathode

## Ordering Information

Part Number	Marking	Packaging	Reel Size
DFC2471P6	74	3000/Tape & Reel	7 inch

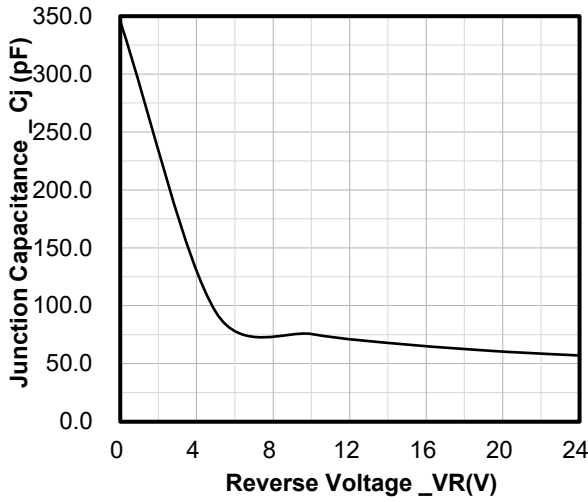
### **Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	Ppk	1350	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

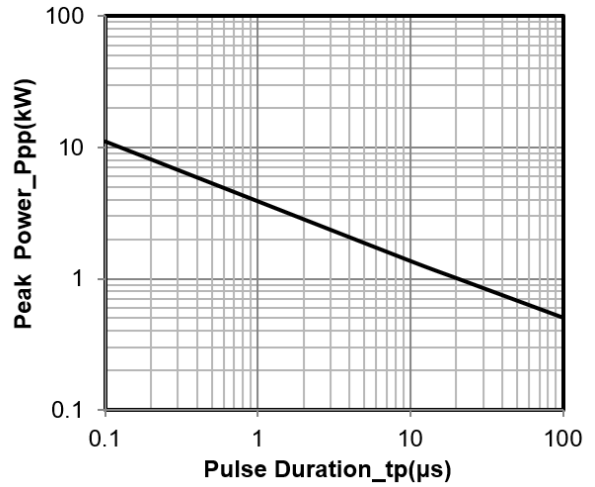
### **Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			24	V	
Breakdown Voltage	V <sub>BR</sub>	26	27.5		V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.5	μA	V <sub>RWM</sub> = 24V
Forward Voltage	V <sub>F</sub>		0.75	1.2	V	I <sub>F</sub> = 10mA
Peak Pulse Current	I <sub>PP</sub>			30	A	t <sub>p</sub> = 8/20μs
Clamping Voltage	V <sub>C</sub>			35	V	I <sub>PP</sub> =10A (8x20μs pulse),pin1 to pin2
Clamping Voltage	V <sub>C</sub>			45	V	I <sub>PP</sub> =30A (8x20μs pulse),pin1 to pin2
Junction Capacitance	C <sub>J</sub>		345		pF	V <sub>R</sub> = 0V, f = 1MHz

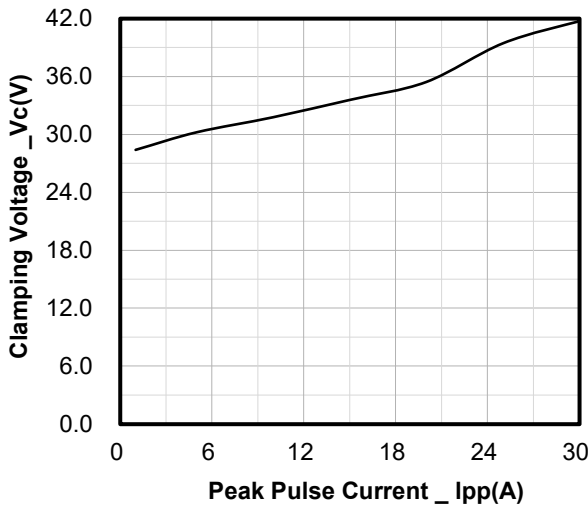
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



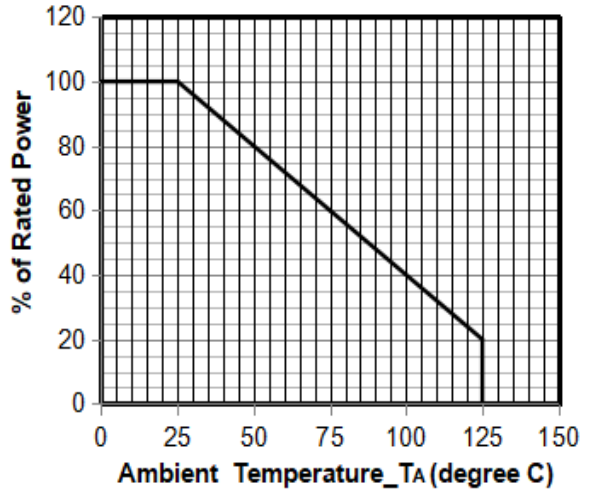
**Junction Capacitance vs. Reverse Voltage**



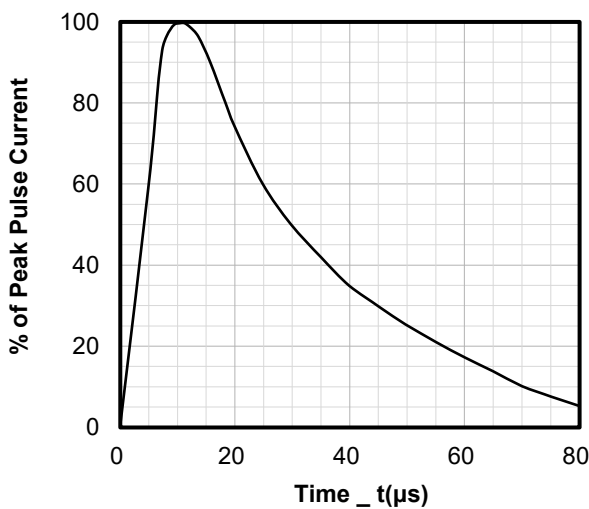
**Peak Pulse Power vs. Pulse Time**



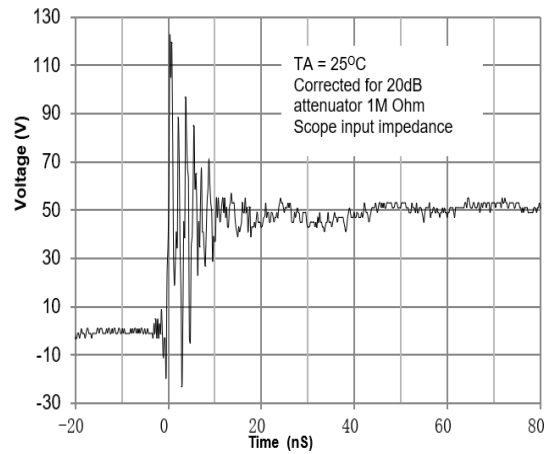
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



**8 X 20μs Pulse Waveform**



**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**

