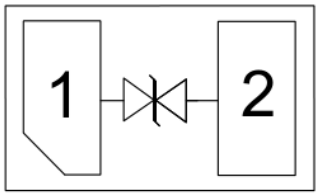
Features

* Ultra small package: 1.0x0.6x0.5mm
* Ultra low capacitance: 0.3pF typical
* Ultra low leakage: nA level
* Low operating voltage: 5V
* Low clamping voltage
* 2-pin leadless package
* Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±20kV
  Contact discharge: ±15kV
  – IEC61000-4-5 (Lightning) 3. 8A (8/20μs)
* RoHS Compliant

Description

The RCLAMP0521P-N is a bi-directional TVS di-ode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for pro-tecting voltage sensitive high-speed data lines. The RCLAMP0521P-N has an ultra-low capacitance with a typical value at 0.3 pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge pro-tection make RCLAMP0521P-N an ideal choice to pro-tect cell phone, digital video interfaces and other high speed ports.

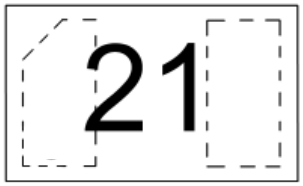
Circuit Diagram



Applications

* Smart phones
* Display Ports
* MDDI Ports
* USB Ports
* Digital Video Interface (DVI)
* PCI Express and Serial SATA Ports

Marking Diagram



Transparent top view

21:Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
RCLAMP0521P-N	10000/Tape & Reel	7 inch

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

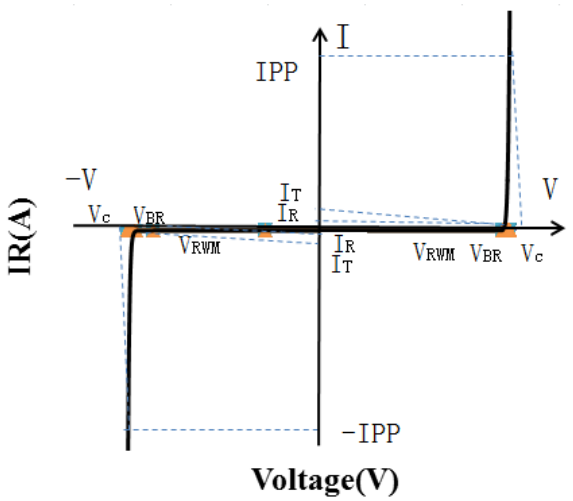
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	70	W
Peak Pulse Current (8/20μs)	IPP	3.8	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±20 ±15	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

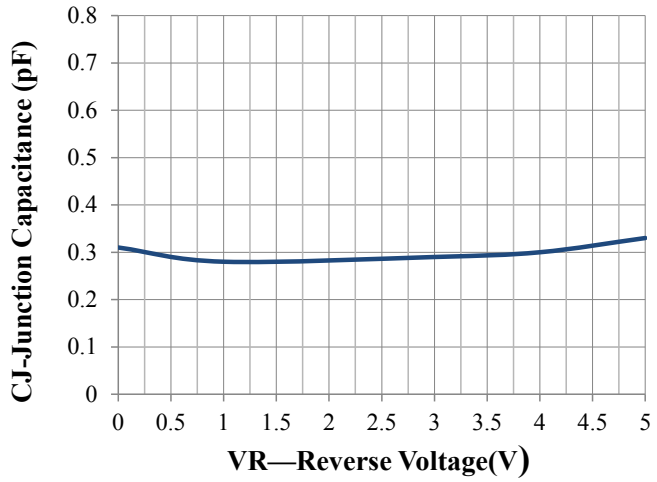
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	V_{RWM} = 5. 0V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse)		10	12	V
Clamping Voltage	V_C	I_{PP} = 3.8A (8 x 20μs pulse)		17	20	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		0.3	0.45	pF

Portion Electronics Parameter

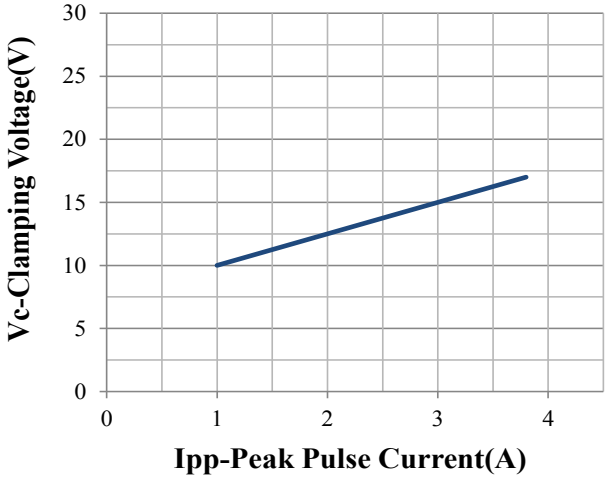
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



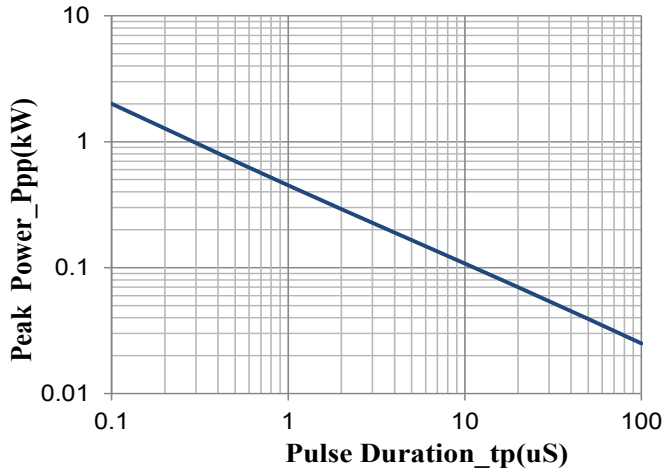
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



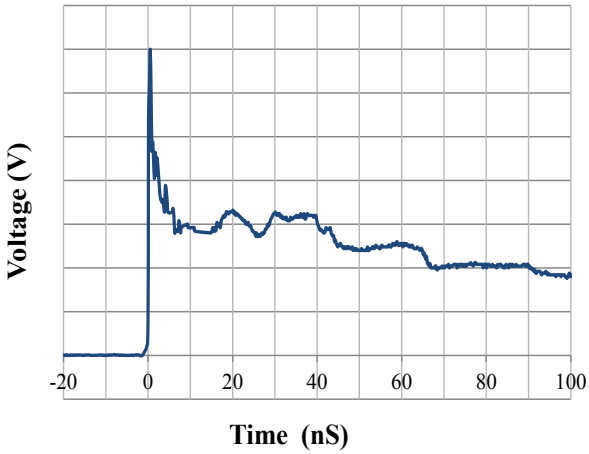
Junction Capacitance vs. Reverse Voltage



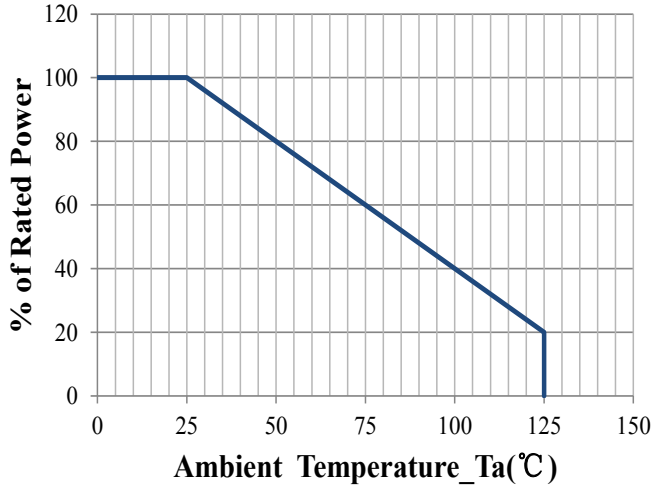
Clamping Voltage vs. Peak Pulse Current



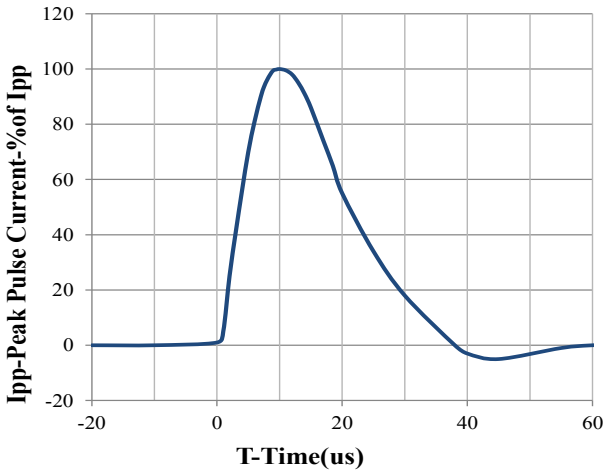
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

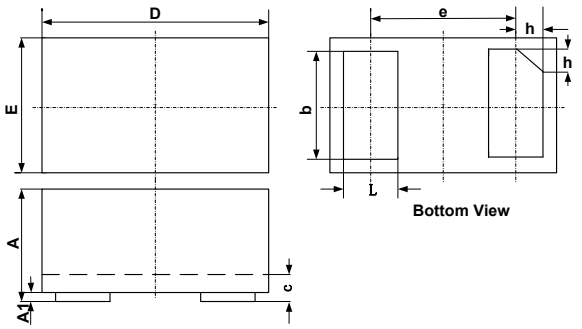


Power Derating Curve



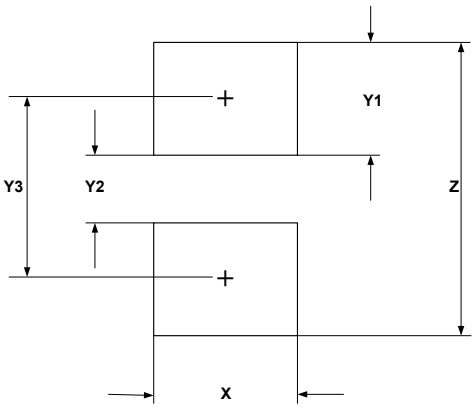
8 X 20us Pulse Waveform

DFN1006-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.40	0.42	0.45	0.016	0.018	0.020
A1	0.00	0.02	0.055	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.99	1.02	1.05	0.039	0.040	0.041
e	0.65 BSC			0.026 BSC		
E	0.59	0.62	0.65	0.023	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052