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Rclamp0502N

2-Line Ultra Low Capacitance TVS Diode

Features

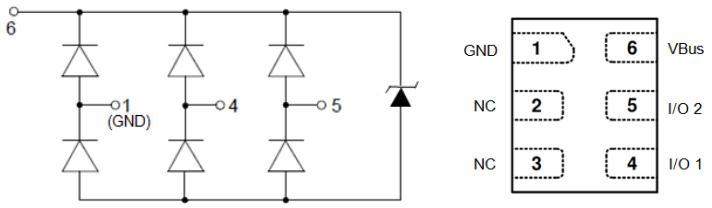
- Ultra low capacitance: 0.25pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Low operating voltage: 5.5/6.5V
- Low clamping voltage
- 6-pin leadless package
- Protects two I/O lines and a power line
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±15kV
    - Contact discharge: ±8kV
  - – IEC61000-4-5 (Lightning) 3A (8/20μs)
- RoHS Compliant



DFN1210-6

Mechanical Characteristics

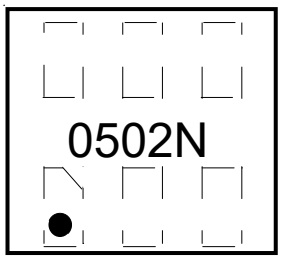
- Package: DFN1210-6
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below



Circuit diagram

Applications

- Cellular Handsets and Accessories
- USB Ports
- Digital Visual Interface
- MMC/SD Ports



0502N= Device code

Dot denotes Pin1

Marking (Top View)

Ordering Information

Part Number	Packaging	Reel Size
Rclamp0502N	3000/Tape & Reel	7 inch

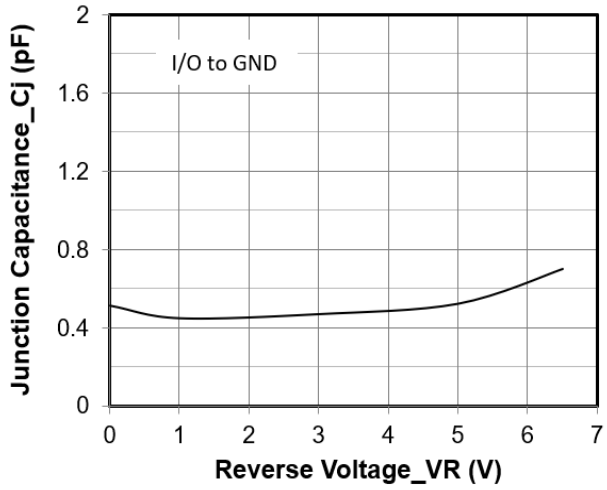
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	51	W
Peak Pulse Current (8/20μs)	I_{PP}	3	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±8	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

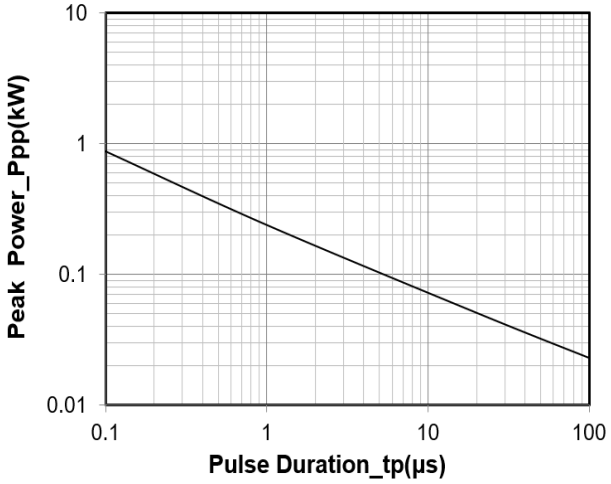
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			6.5	V	Pin 6 to GND
Breakdown Voltage	V_{BR}	7			V	I_T = 1mA, Pin 6 to GND
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 6.5V, Pin 6 to GND
Clamping Voltage	V_C			12	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			17	V	I_{PP} = 3A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.5		pF	VR = 0V, f = 1MHz, any I/O pin to ground
Junction Capacitance	C_J		0.25	0.5	pF	VR = 0V, f = 1MHz, between I/O pins

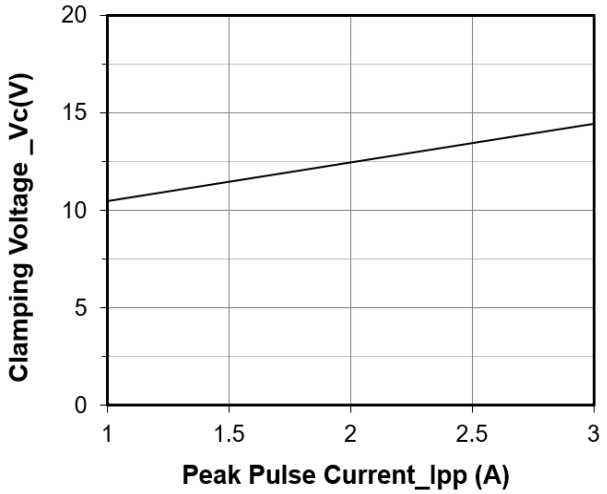
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



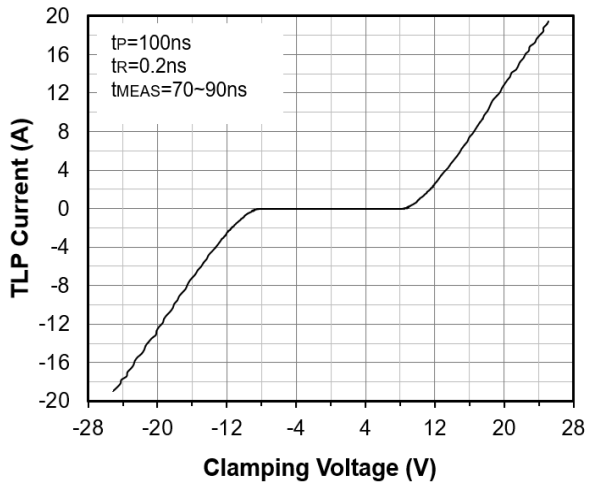
Junction Capacitance vs. Reverse Voltage



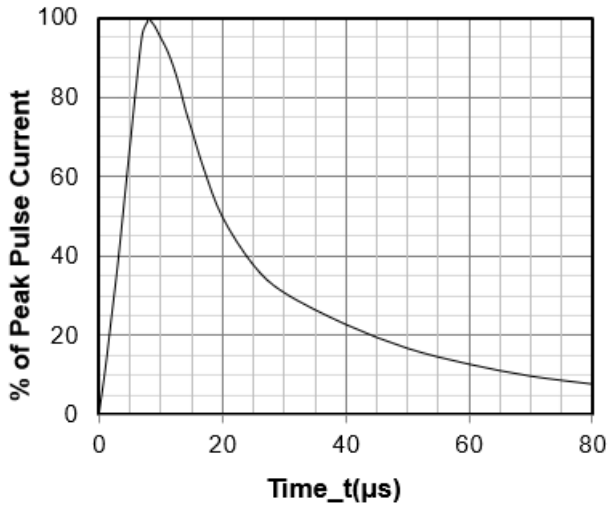
Peak Pulse Power vs. Pulse Time



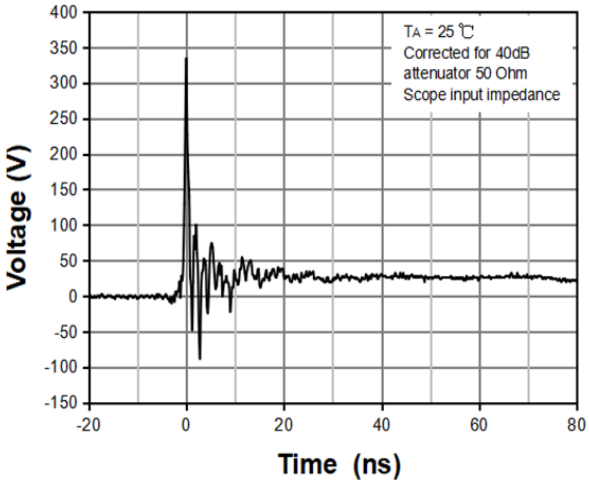
Clamping Voltage vs. Peak Pulse Current



TLP Measurement



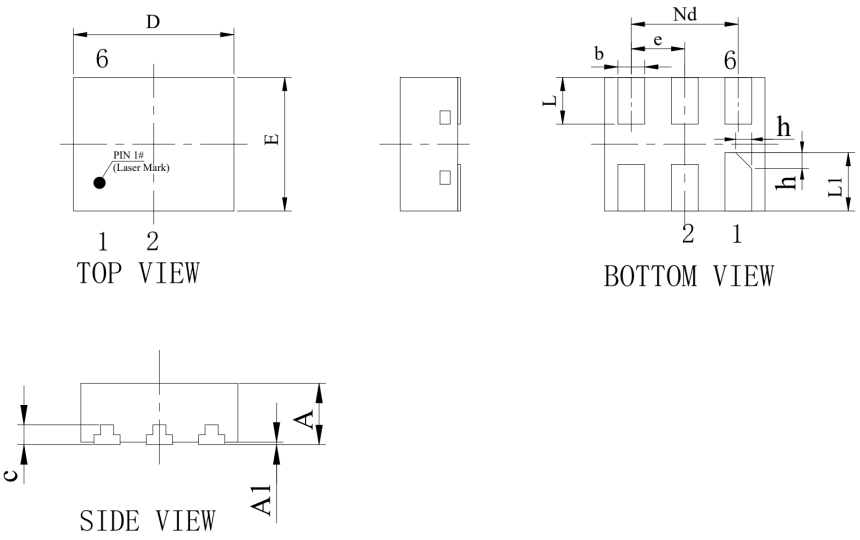
8 X 20μs Pulse Waveform



ESD Clamping Voltage

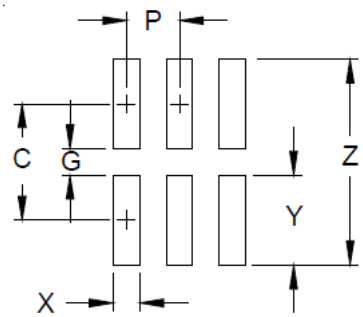
8 kV Contact per IEC61000−4−2

DFN1210-6 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.15	0.20	0.25
c	0.152REF		
D	1.15	1.20	1.25
e	0.40BSC		
Nd	0.80BSC		
E	0.95	1.00	1.05
L	0.25	0.35	0.45
L1	0.338	0.438	0.538
h	0.07	0.12	0.17

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	0.875	0.034
G	0.20	0.008
P	0.40	0.016
X	0.20	0.008
Y	0.675	0.027
Z	1.55	0.061