

## General description

The device is designed to protect high-speed interfaces such as SuperSpeed USB, High-Definition Multimedia Interface (HDMI), DisplayPort, external Serial Advanced Technology Attachment (eSATA) and Low Voltage Differential Signaling (LVDS) interfaces against ElectroStatic Discharge (ESD).

The device includes four high-level ESD protection diode structures for ultra high-speed signal lines and is encapsulated in a leadless small DFN2510-10L plastic package.

All signal lines are protected by a special diode configuration offering ultra low line capacitance of only 0.55 pF. These diodes utilize a unique snap-back structure in order to provide protection to downstream components from ESD voltages up to 15 kV contact exceeding IEC 61000-4-2, level 4.

## Features and benefits

- System ESD protection for USB 2.0 and SuperSpeed USB 3.0, HDMI 2.0, DisplayPort, eSATA and LVDS
- All signal lines with integrated rail-to-rail clamping diodes for downstream ESD protection of 15 kV exceeding IEC 61000-4-2, level 4
- Matched 0.5 mm trace spacing
- Signal lines with 0.3 pF matching capacitance between signal pairs
- Line capacitance of only 0.5 pF for each channel
- Design-friendly 'pass-through' signal routing



DFN2510-10L

## Application information

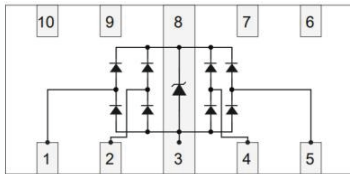
The device is designed for high-speed receiver and transmitter port protection:

- TVs and monitors (HDMI)
- DVD recorders and players
- Notebooks, main board graphic cards and ports
- Set-top boxes and game consoles
- SATA and eSATA Interface
- USB3.0

## Ordering information

Device	Package	Reel Size	Qty(PCS)
RClamp0524PA	DFN2510-10L	7 Inch	3000

## Ordering information

Marking	Naming rule	Graphic symbol
<b>0524P</b>	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> RClamp0524PA </div> <div style="text-align: center; font-size: small;"> ↓  产品名称  product name </div>	

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

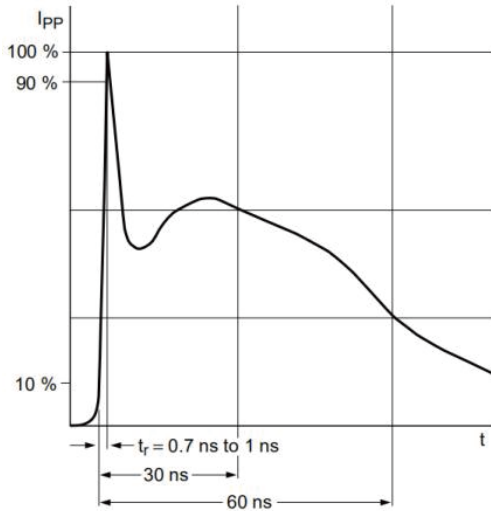
Parameter	Symbol	Value	Unit
Peak Pulse Power (t <sub>p</sub> = 8/20μs)	P <sub>PPM</sub>	55	W
Peak Pulse Current(t <sub>p</sub> = 8/20μs)	I <sub>PPM</sub>	4	A
Maximum lead temperature for soldering during 10s	T <sub>L</sub>	260	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C
Operating Temperature Range	T <sub>OP</sub>	-40 to +125	°C
Maximum junction temperature	T <sub>j</sub>	150	°C
ESD voltage IEC 61000-4-2 (air discharge)	V <sub>ESD</sub>	20	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V <sub>ESD</sub>	15	kV

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

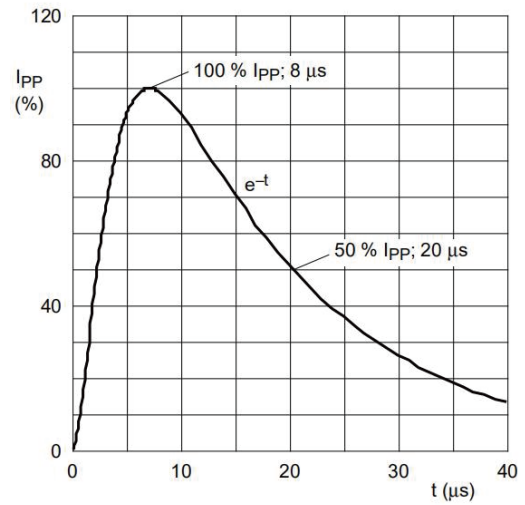
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V <sub>RWM</sub>	--	--	5.0	V	
Breakdown Voltage	V <sub>BR</sub>	6	--	8.5	V	I <sub>T</sub> =1mA
Leakage Current I <sub>Leak</sub>	I <sub>R</sub>	--	--	100	nA	V <sub>RWM</sub> =5V
Clamping Voltage	V <sub>C</sub>	--	--	13.0	V	I <sub>PP</sub> =4A, T <sub>p</sub> =8/20μs
Junction Capacitance	C <sub>J</sub>	--	0.3	0.4	pF	V <sub>R</sub> =0V, f=1MHz I/O to I/O
Junction Capacitance	C <sub>J</sub>	--	0.5	0.7	pF	V <sub>R</sub> =0V, f=1MHz I/O to GND



## Typical Characteristics



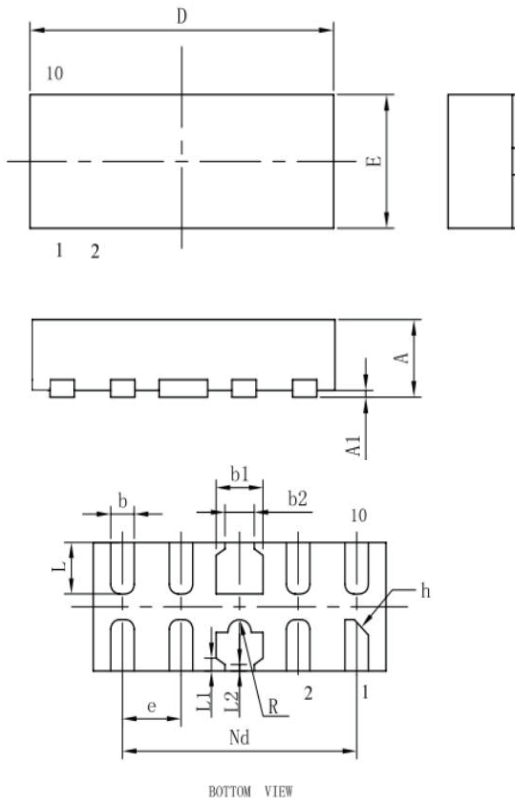
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20μs pulse)

## Package Outline Dimensions

### DFN2510-10L



SYMBOL	Dimensions In Millimet	
	MIN	MAX
A	0.48	0.60
A1	0.00	0.05
b	0.15	0.25
b1	0.35	0.45
b2	0.20	0.30
D	2.45	2.55
e	0.50BSC	
Nd	2.00BSC	
E	0.95	1.05
L	0.33	0.45
L1	0.075REF	
L2	0.05REF	
h	0.08	0.15
R	0.05	0.15