

Features

- Ultra low leakage: nA level
- Ultra low capacitance: 0.30pF typical (I/O to I/O)
- Operating voltage: 5V
- Low clamping voltage
- Up to 4 lines protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{V}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

- Package: DFN2510-10 (2.5 $\times$ 1.0 $\times$ 0.5mm)
- Case Material: "Green" Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- HDMI 1.3 & 1.4, USB 3.0 & 3.1 and MDDI ports
- Monitors and flat panel displays
- Set-top box and Digital TV
- Video graphics cards
- HDMI 2.0
- Digital Visual Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports

Ordering Information

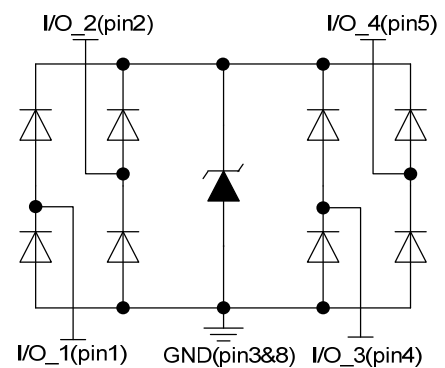
Part Number	Packaging	Marking
ULC0524P	3000/Tape & Reel	0524P

Portion Electronics Parameter

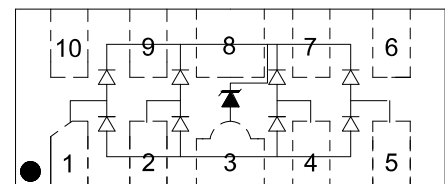
Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



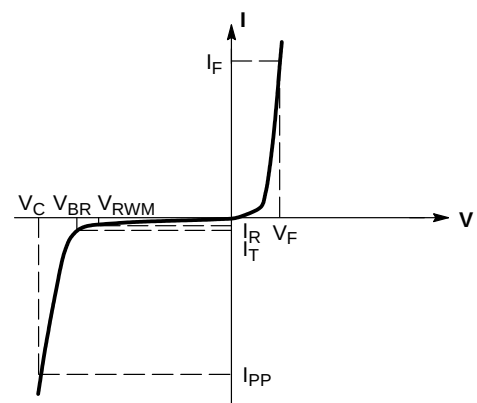
DFN2510-10



Pin configuration



Top view



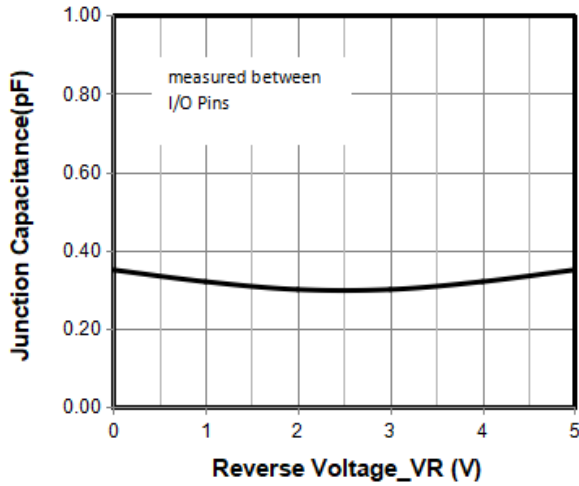
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu\text{s}$)	P_{Pk}	70	W
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 25 ± 20	kV
Operating Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

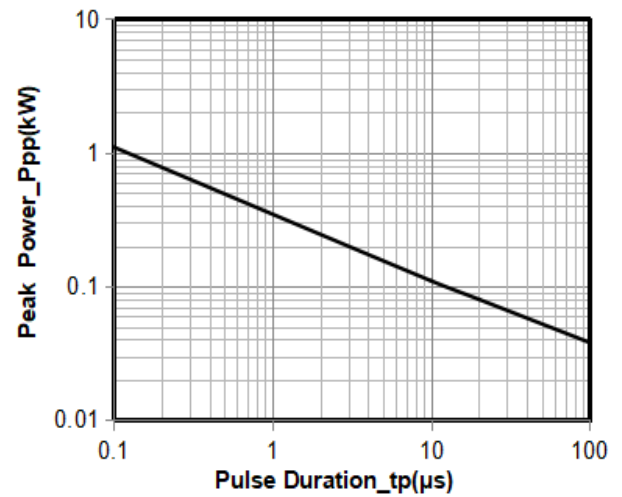
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V_{BR}	6			V	$I_T = 1\text{mA}$, any I/O pin to ground
Reverse Leakage Current	I_R		0.01	0.5	μA	$V_{RWM} = 5\text{V}$, any I/O pin to ground
Clamping Voltage	V_C			10	V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V_C			18	V	$I_{PP} = 4\text{A}$ (8 x 20 μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.3	0.4	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins
Junction Capacitance	C_J			0.8	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to ground

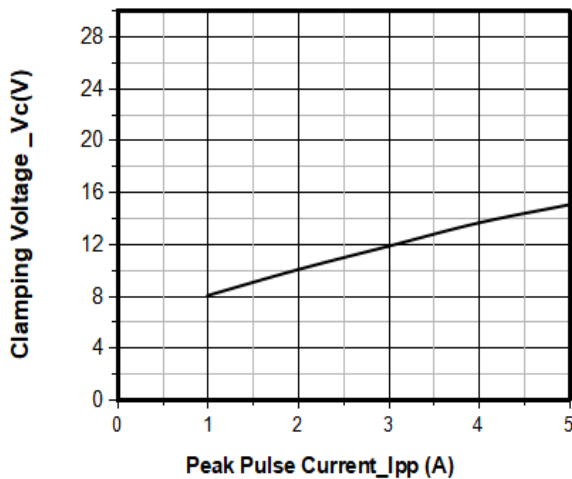
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



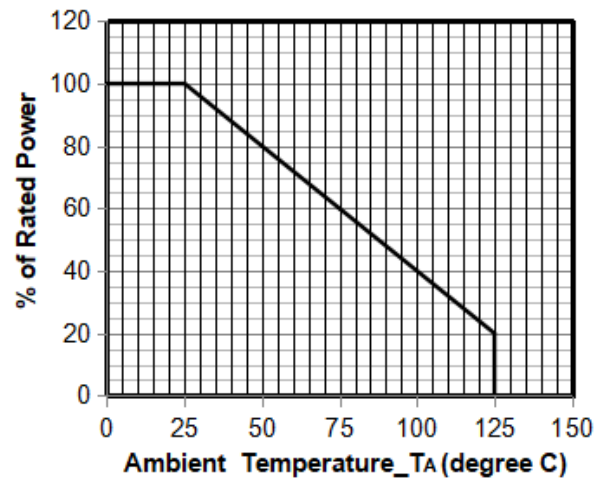
Junction Capacitance vs. Reverse Voltage



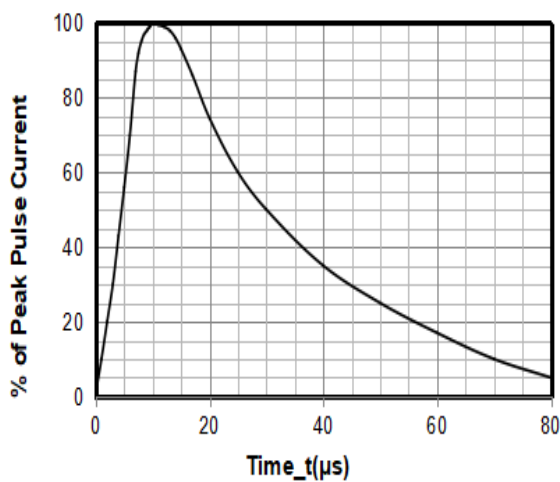
Peak Pulse Power vs. Pulse Time



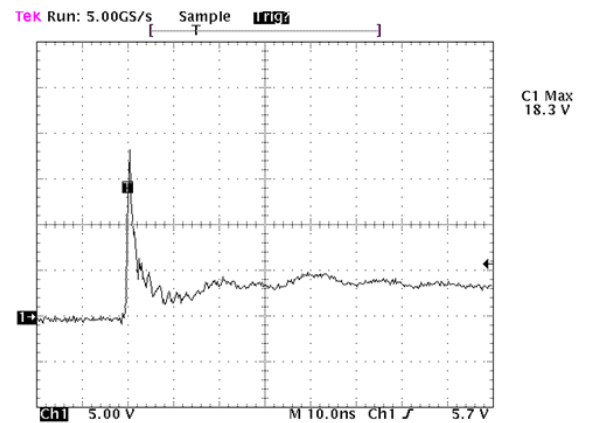
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

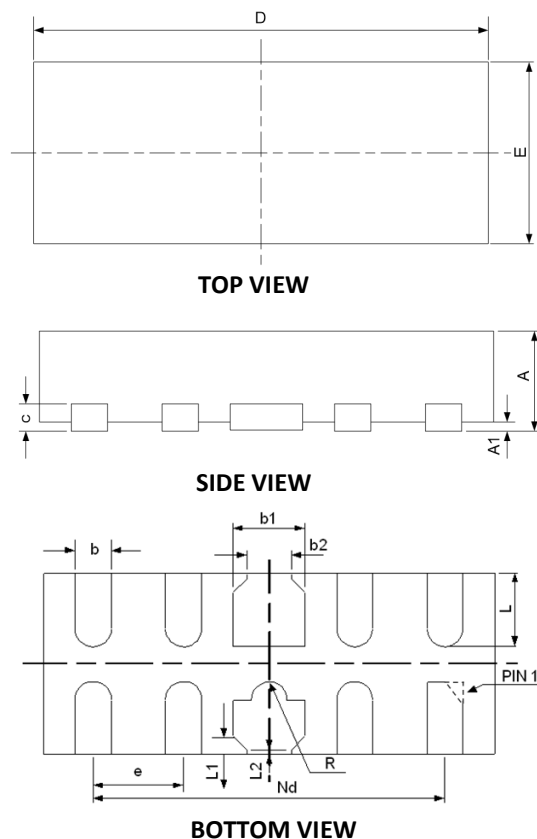


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

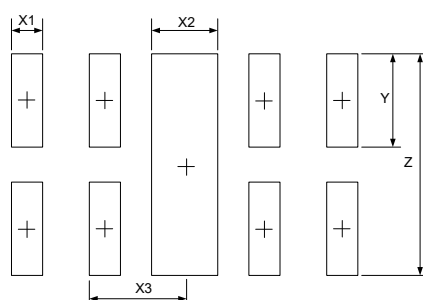
8 kV Contact per IEC61000-4-2

DFN2510-10 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	-	0.60	0.018	-	0.024
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.15	0.20	0.25	0.006	0.008	0.010
b1	0.35	0.40	0.45	0.014	0.016	0.018
b2	0.20	0.25	0.30	0.008	0.010	0.012
c	0.10	0.15	0.20	0.004	0.006	0.008
D	2.45	2.50	2.55	0.098	0.100	0.102
e	0.50BSC			0.020BSC		
Nd	2.00BSC			0.080BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.33	-	0.45	0.013	-	0.018
L1	0.075REF			0.003REF		
L2	0.050REF			0.002REF		
R	0.05	0.10	0.15	0.002	0.004	0.006

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X1	0.200	0.008
X2	0.400	0.016
X3	0.600	0.024
Y	0.600	0.024
Z	1.400	0.056