RCLAMP3324P-N

ESD Protection Diode Array

»Features

- 25Watts peak pulse power (tp = 8/20μs)
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (Cj=0.3pF typ. I/O to I/O)
- IEC 61000-4-2 ±10kV contact ±12kV air
- Low clamping voltage: VCL = 5.3V typ @ IPP =16A (TLP)
- IEC 61000-4-5 (Lightning) 5A (8/20μs)

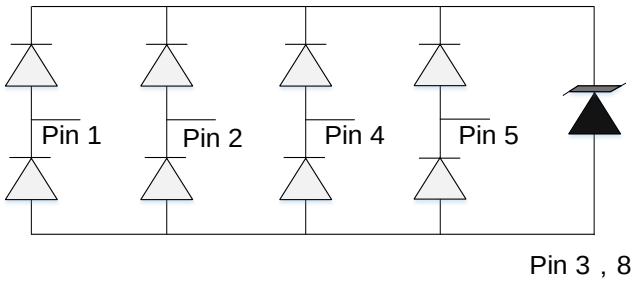
»Applications

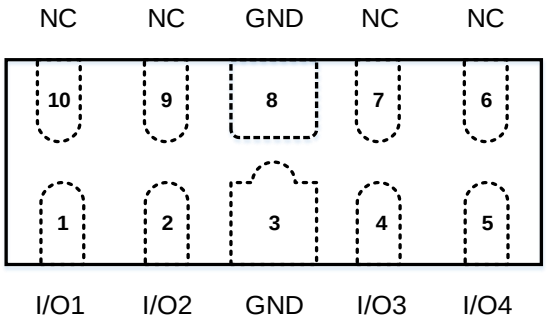
- USB 3.0 and USB3.1
- HDMI1.3,HDMI1.4 and HDMI2.0
- Very sensitive interface lines
- Notebooks, Desktops, and Servers
- Industrial equipment

»Mechanical Data

- Tiny DFN10L(2.5mmx1.0mm) package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

»Schematic & PIN Configuration





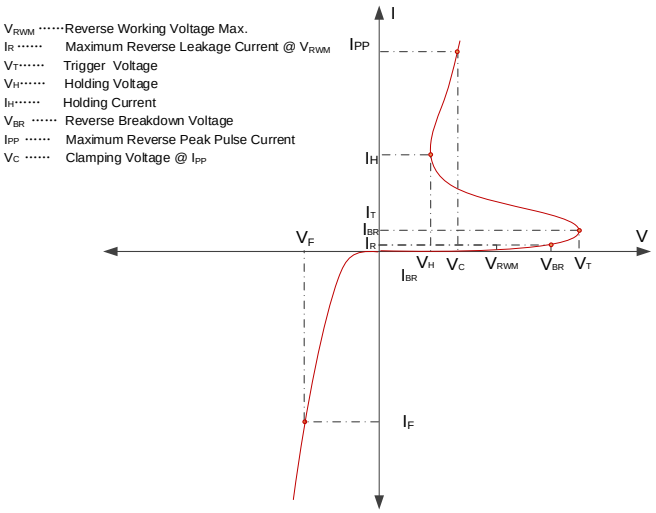
»Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	25	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{PP}	5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	12 10	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 125	℃

»Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				3.3	V
Holding Voltage	V_H		2.0		3.3	V
Reverse Leakage Current	I_R	V_{RWM}=3.3V,T=25℃			500	nA
Trigger Voltage	V_T			8.0		
Clamping Voltage	V_{CL}	I_{PP}=16A,t_p=100ns		5.3	6	V
Clamping Voltage	V_C	I_{PP}=5A,t_p=8/20μs			5	V
dynamic resistance	R_{dyn}	T_{amb}=25℃, I_R=10A		0.3	0.4	Ω
Junction Capacitance	C_j	V_R = 0V, f = 1MHz I/O to I/O		0.3		pF
		V_R = 0V, f = 1MHz I/O to GND		0.55		pF

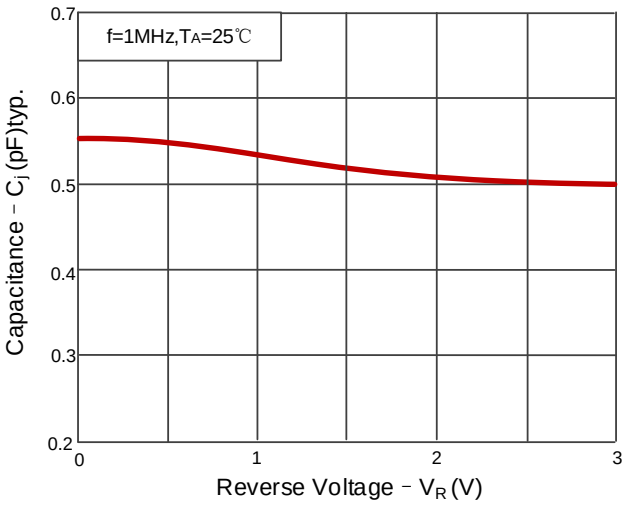
»Electrical Parameters (I/O to GND,TA = 25°C unless otherwise noted)



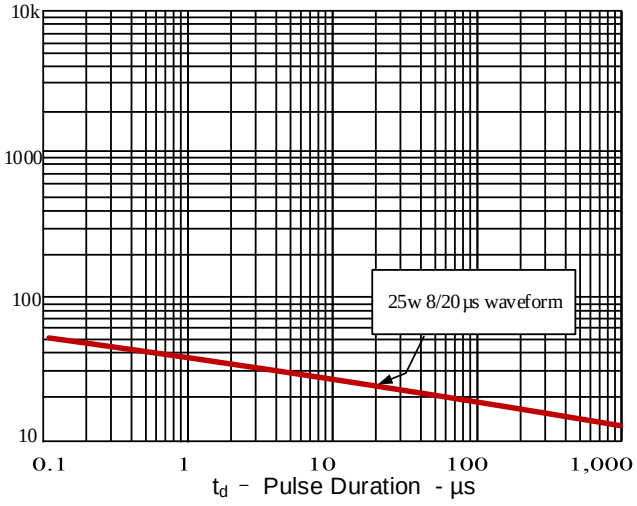
Note: 8/20μs pulse waveform.

»Typical Characteristic Curves

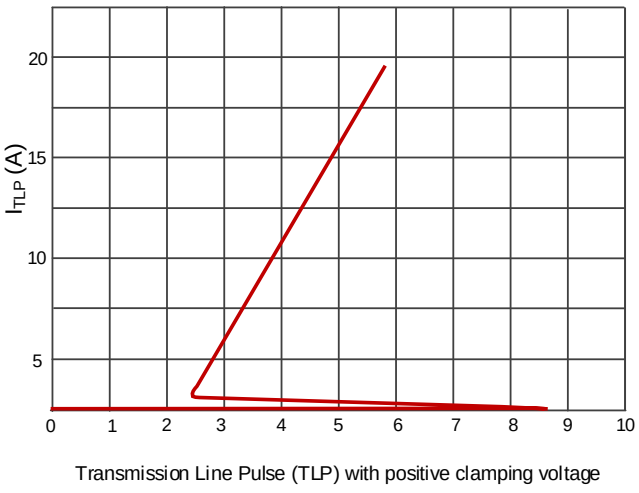
Capacitance vs. Reverse Voltage



Peak Pluse Power vs. Pluse Time

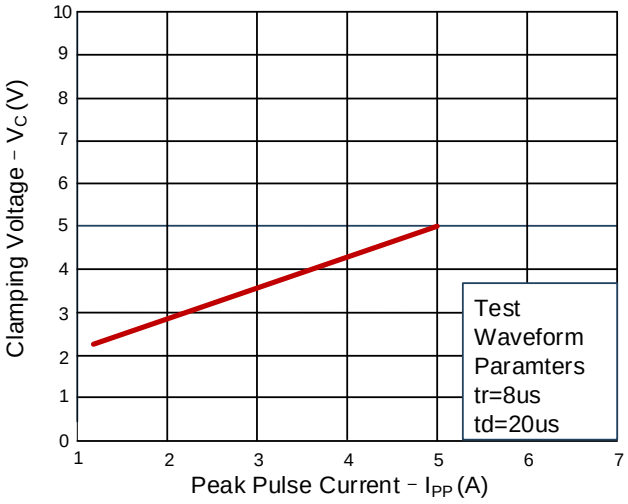


Positive Clamping voltage (TLP)

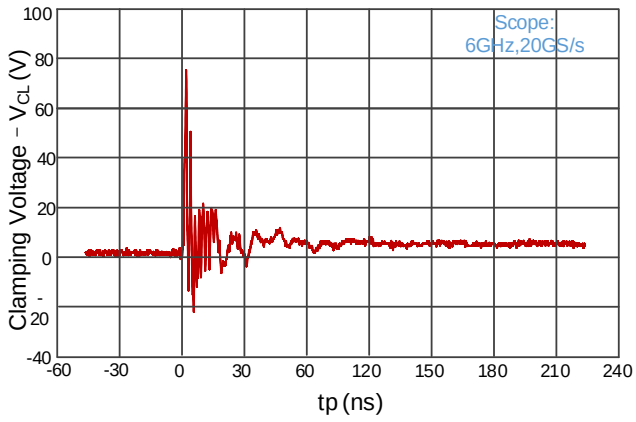


Transmission Line Pulse (TLP) with positive clamping voltage

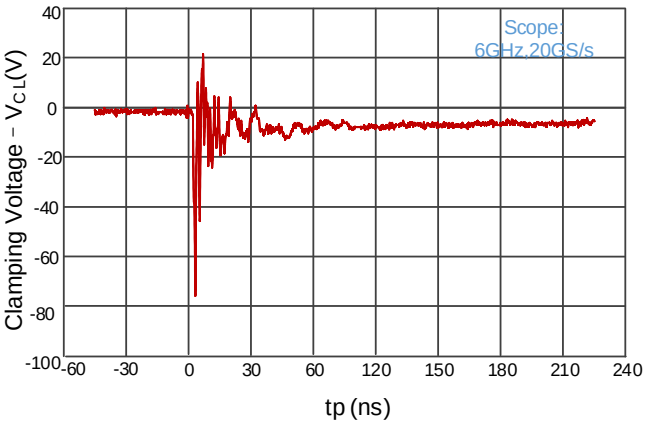
Reverse Clamping Voltage vs. Peak Pulse Current



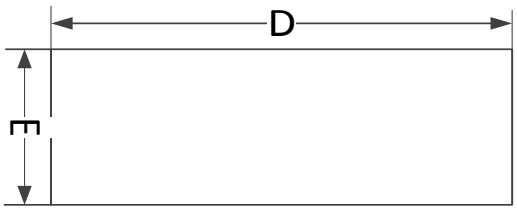
IEC61000-4-2 : 8 kV positive pulse(I/O to GND)



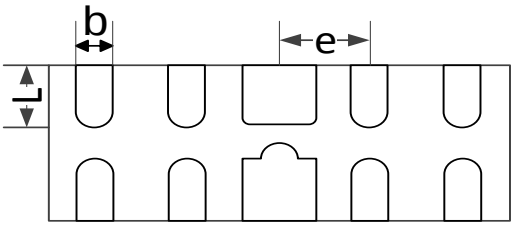
IEC61000-4-2 : 8 kV positive pulse(GND to I/O)



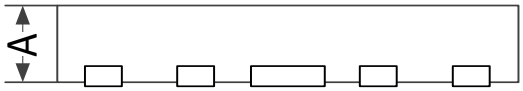
»Package information – DFN10L(2.5mmx1.0mm)



TOP VIEW



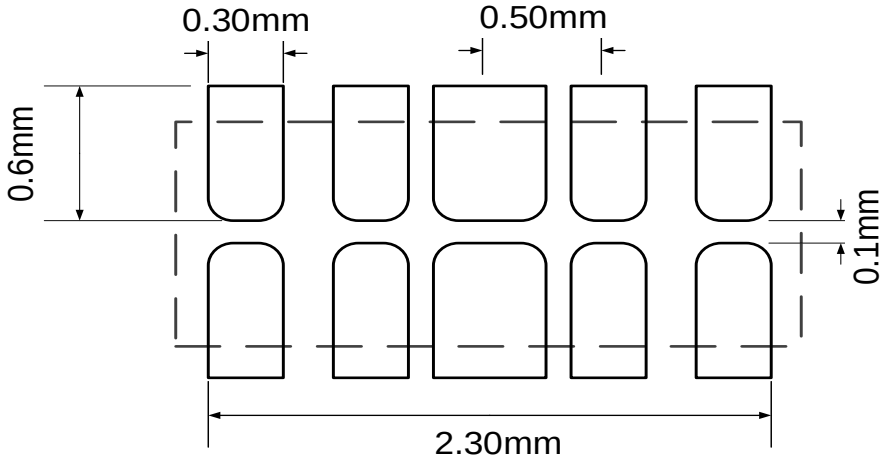
BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (mm)			
PKG	DFN2510-10L		
REF.	MIN.	NOM.	MAX.
A	0.450	0.500	0.600
b	0.150	0.200	0.250
D	2.450	2.500	2.550
E	0.950	1.000	1.050
e	0.500BSC		
L	0.350	0.400	0.450

»Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only.

»Marking

»Ordering information

Order code	Package	Base qty	Delivery mode
RCLAMP3324P-N	DFN10L(2.5mmx1.0mm)	3k	Tape and reel