1. Description

The RCLAMP3374N(ES) is Transient Voltage Suppressor that designed to protect components which are connected to data and transmission lines against electrostatic discharge (ESD), electrical fast transient (EFT), and lighting. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 1250W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- RoHS compliant
- Protecting 4 unidirectional lines
- Ultra Low Junction capacitance: 3.0 pF TYP. (IO-GND)

3. Applications

- USB & HDMI Interfaces
- Portable electronics
- Servers, notebooks, and desktop PCs
- Display Port 1.3, eSATA
- Digital Visual Interface (DVI)
- PoE

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
RCLAMP3374N(ES)	DFN2030-10L	.30F3V4UA/LOT	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7inches

Table-1   Ordering information

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5. Pin Configuration and Functions

Pin	Name	Description	Outline	Circuit Diagram
1,2,4,5, 6,7,9,10	IO	Connect to IO		
3,8	GND	Connect to GND		
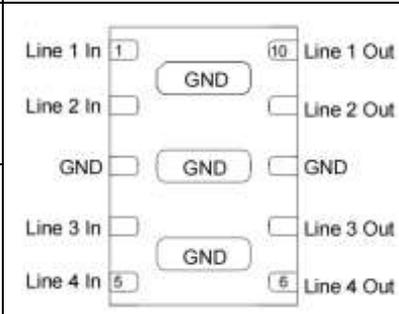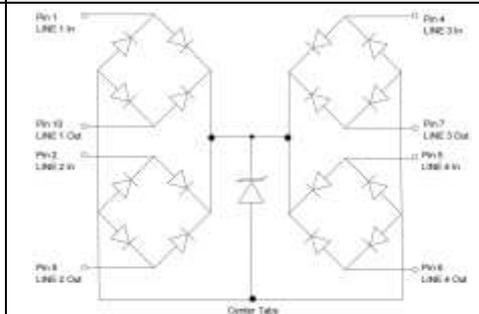
Table-2   Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	1250	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		50	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3   Absolute Maximum rating

6.2. Electrical Characteristics

At TA = 25℃ unless otherwise noted

| Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA, IO-GND	3.5			V
Reverse Leakage Current	I_R	V_{RWM}=3.3V			0.2	uA
Clamping Voltage	V_{CL}	I_{PP}=1A, tp=8/20us, Any I/O to Ground			10	V
Clamping Voltage	V_{CL}	I_{PP}=30A, tp=8/20us, Any I/O to Ground			18	V
Clamping Voltage	V_{CL}	I_{PP}=50A, tp=8/20us, Line-to-Line, two I/O pins connected together on each line (Note 1)			25	V
Junction Capacitance	C_J	VR=0V, f=1MHz, Any I/O to Ground		3.0	5.0	pF
		VR=0V, f=1MHz, Between I/O pins		1.8	3.0	

Table-4 Electrical Characteristics

Note 1: Ratings with 2 pins connected together per the recommended configuration (ie pin 1 connected to pin 10, pin 2 connected to pin 9, pin 4 connected to pin 7, and pin 5 connected to pin 6).
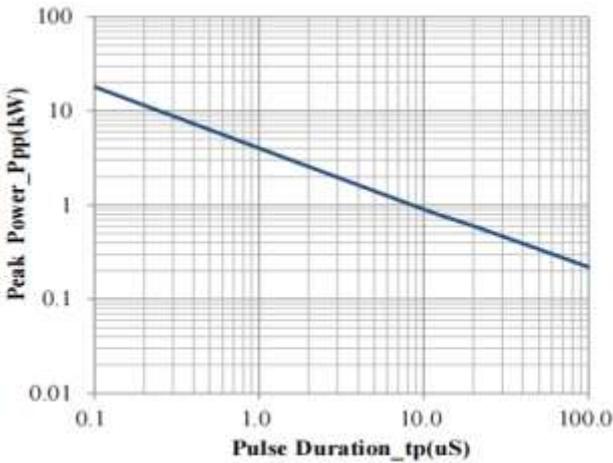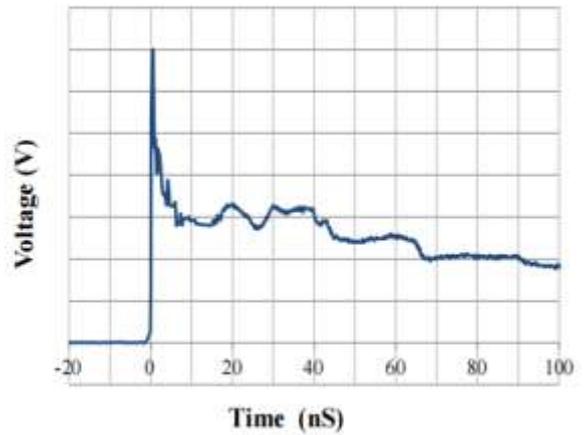
7. Typical Characteristic
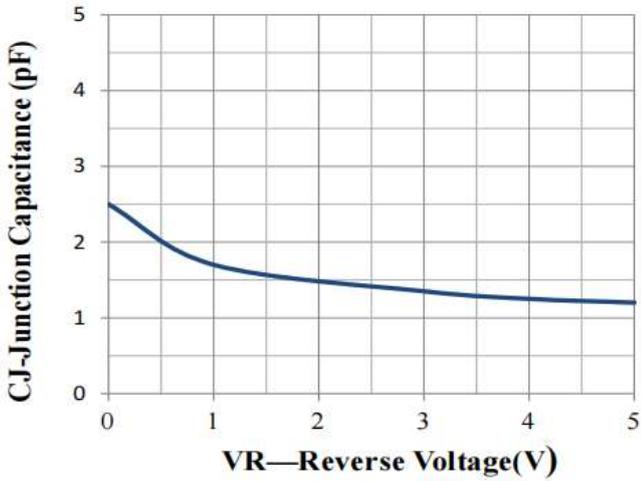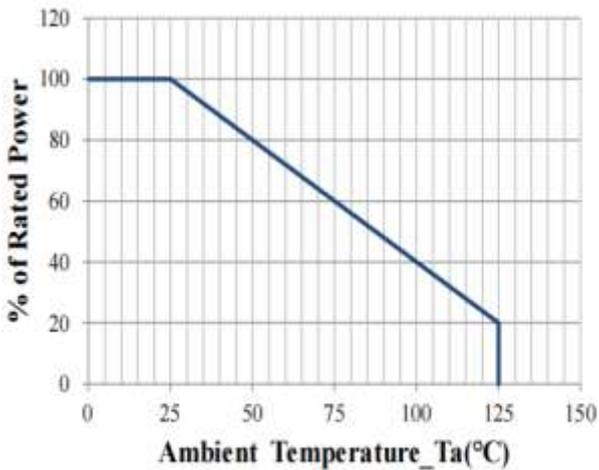
Junction Capacitance vs. Reverse Voltage
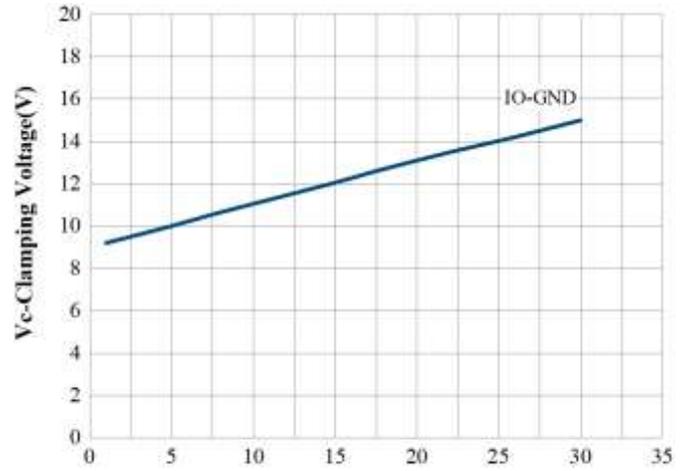
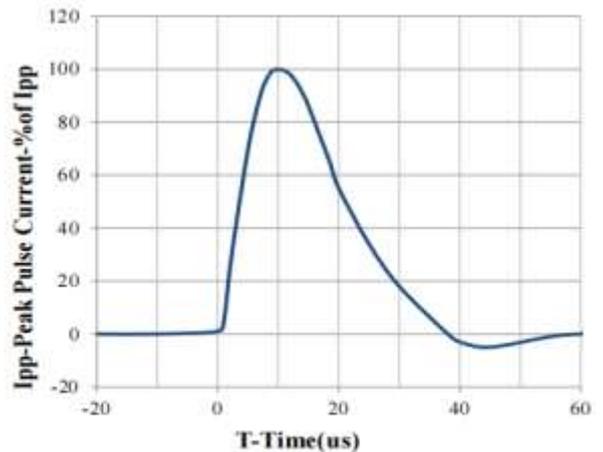**Clamping Voltage vs. Peak Pulse Current**

Peak Pulse Power vs. Pulse Time
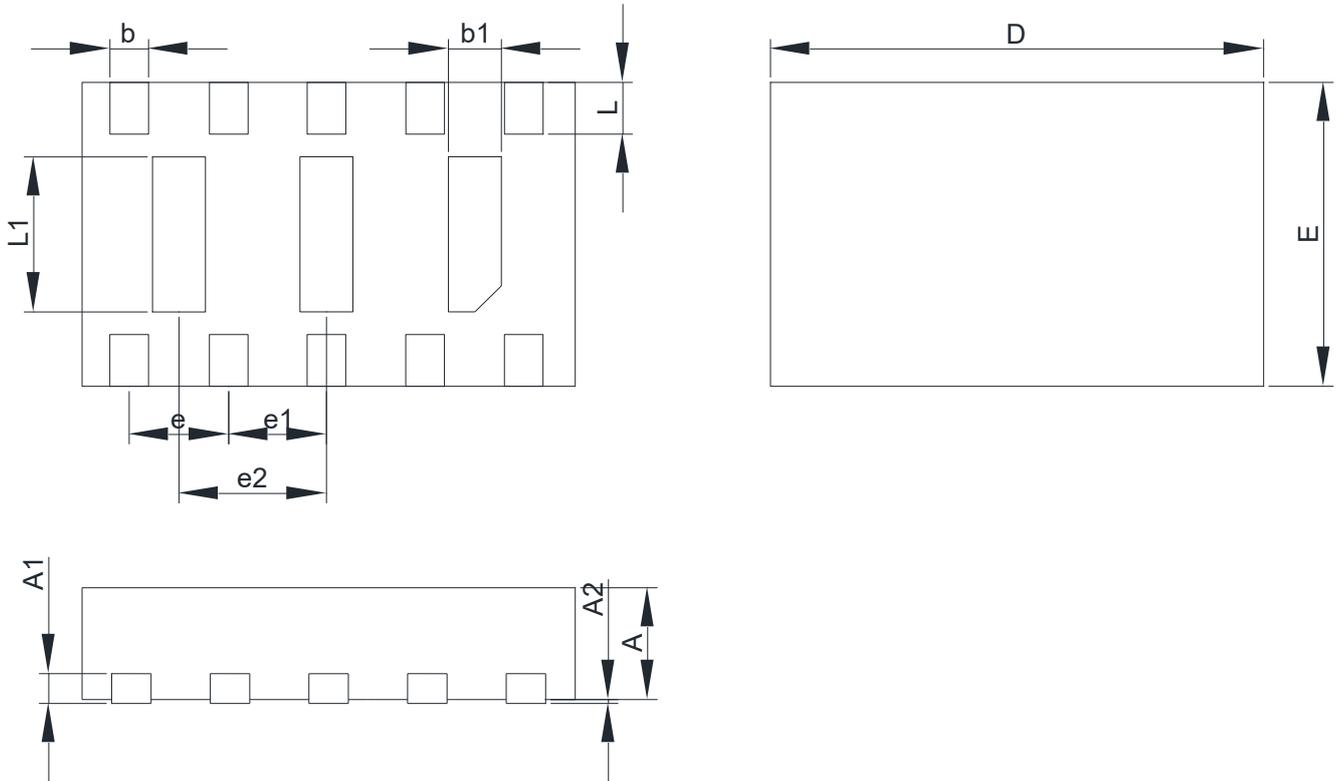
IEC61000-4-2 Pulse Waveform
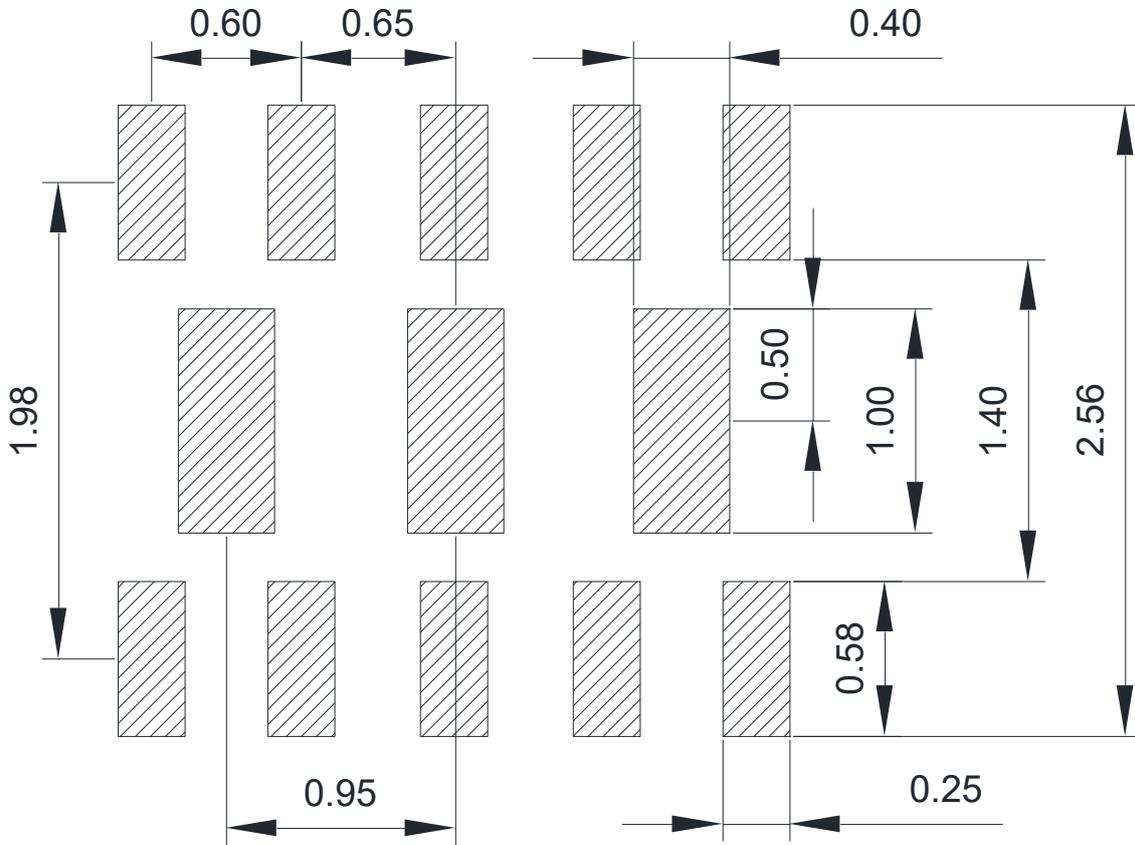
Power Derating Curve

8 X 20us Pulse Waveform

8. Dimension (DFN2030-10L)

POD (T)

Dimensions in Millimeter							
Symbol	Min.	Nom.	Max.	Symbol	Min.	Nom.	Max.
D	2.95	3.00	3.05	e	0.60BSC		
E	1.95	2.00	2.05	e1	0.65BSC		
b	0.15	0.20	0.25	e2	0.95BSC		
L	0.25	0.30	0.35	A	0.45	0.50	0.55
b1	0.30	0.35	0.40	A1	0.15REF		
L1	0.95	1.00	1.05	A2	0.00	-	0.05

9. Recommended Soldering Footprint

DIMENSIONS: MILLIMETERS

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