

## 1. Description

The RCLAMP4041ZA(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 contact discharge method.

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## 2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 160W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- RoHS compliant
- Protecting one bi-directional line
- Ultra Low Junction capacitance: 0.43pF Typ.

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## 3. Applications

- Control & monitoring systems
- USB Ports
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals

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## 4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
RCLAMP4041ZA(ES)	CSP0603-2L	AH	Halogen free	Tape & Reel	10,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

## 5. Pin Configuration and Functions

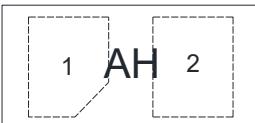
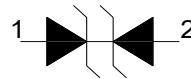
Pin	Name	Description	Outline	Circuit Diagram
1,2	IO	Connect to IO		

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°C	$P_{pk}$	-	160	W
Peak pulse current (tp=8/20us)@25°C	$I_{PP}$		20	A
ESD (IEC61000-4-2 air discharge) @25°C	$V_{ESD}$	-	$\pm 30$	kV
ESD (IEC61000-4-2 contact discharge) @25°C	$V_{ESD}$	-	$\pm 30$	kV
Junction temperature	$T_J$	-	150	°C
Operating temperature	$T_{OP}$	-40	125	°C
Storage temperature	$T_{STG}$	-55	150	°C
Lead temperature	$T_L$	-	260	°C

Table-3 Absolute Maximum rating

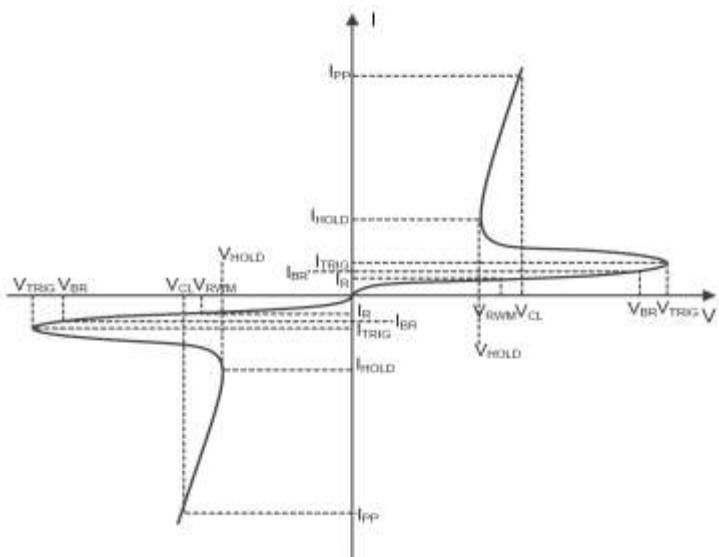
## 6.2. Electrical Characteristics

At  $T_A = 25^\circ\text{C}$  unless otherwise noted

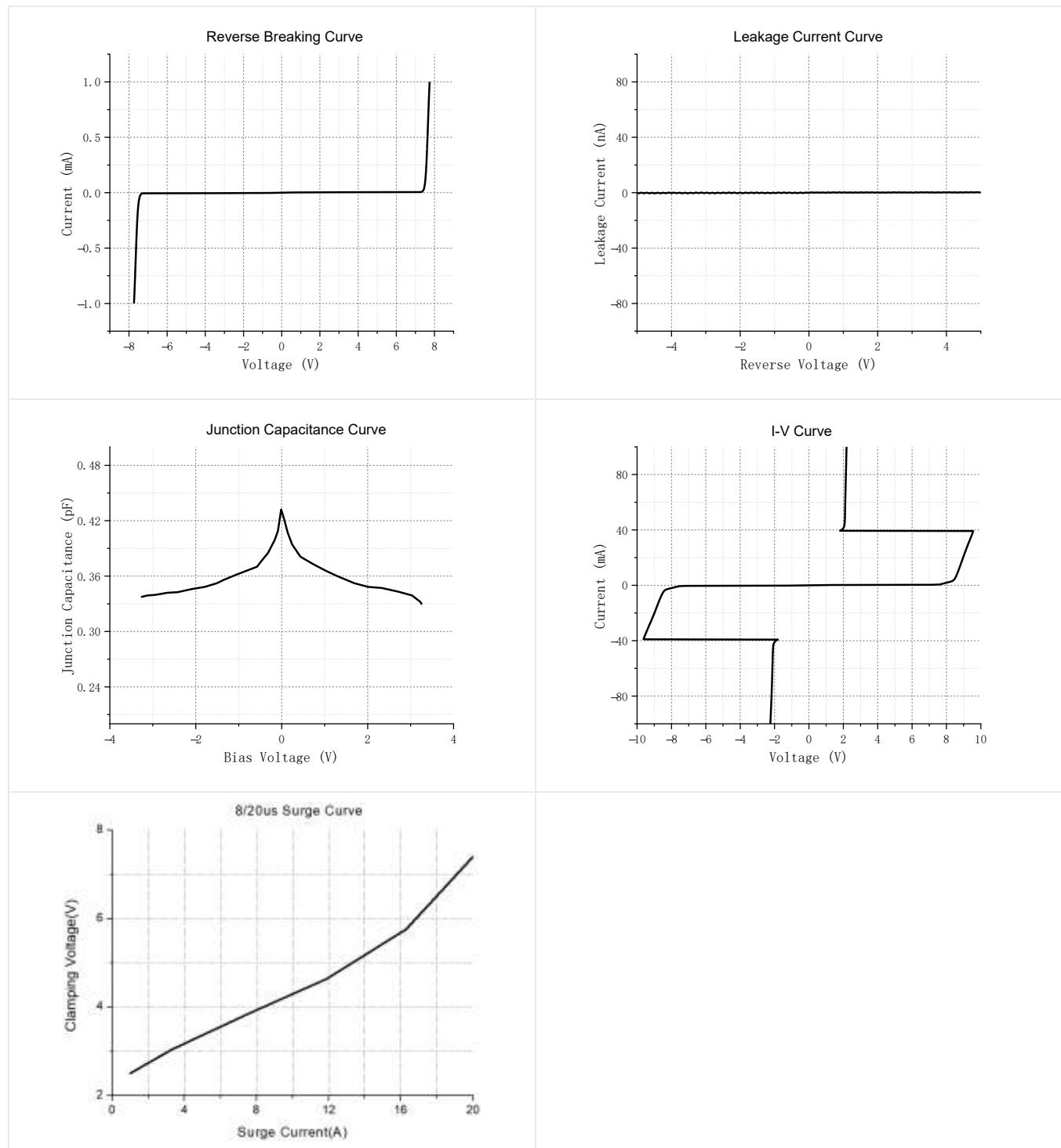
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$IT=1\text{mA}$	6.0	7.8		V
Reverse Leakage Current	$I_R$	$V_{RWM}=3.3\text{V}$			100	nA
Clamping Voltage	$V_{CL}$	$I_{PP}=1\text{A}; tp=8/20\mu\text{s}$		2.5	3.0	V
Clamping Voltage	$V_{CL}$	$I_{PP}=20\text{A}; tp=8/20\mu\text{s}$		7.4	8.0	V
Junction Capacitance	$C_J$	$VR=0\text{V}; f=1\text{MHz}$		0.43	0.45	pF

Table-4 Electrical Characteristics

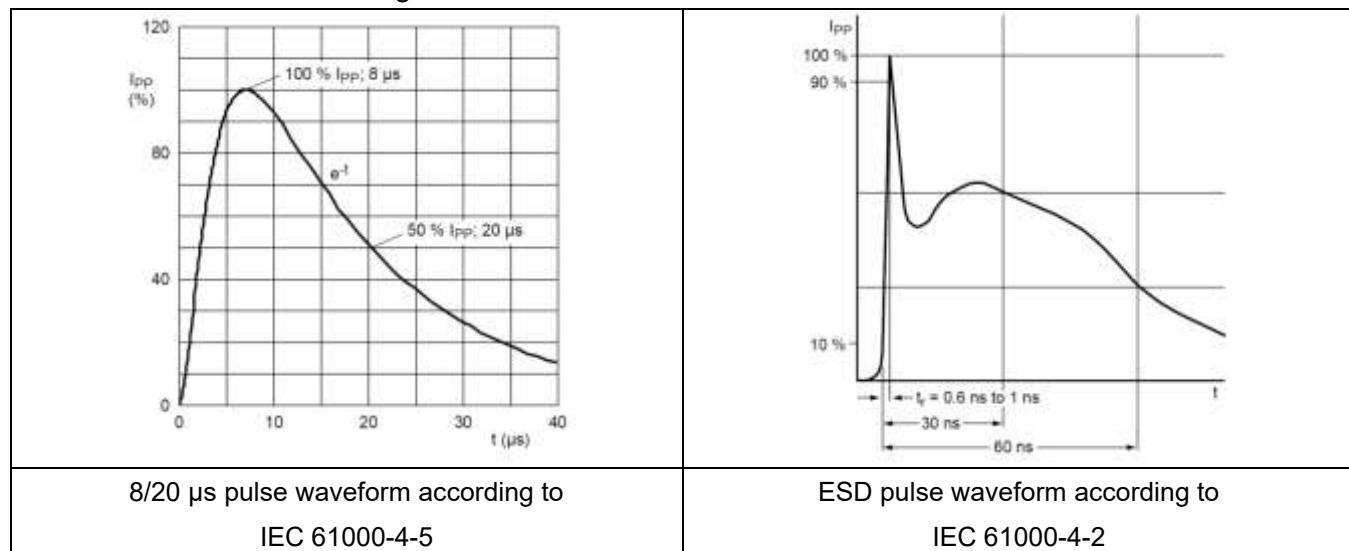
Symbol	Parameters
$V_{RWM}$	Reverse stand-off voltage
$I_R$	Reverse leakage current
$V_{BR}$	Reverse breakdown voltage
$I_{BR}$	Reverse breakdown current
$V_{CL}$	Clamping voltage
$V_{TRIG}$	Reverse trigger voltage
$I_{TRIG}$	Reverse trigger current
$V_{HOLD}$	Reverse holding voltage
$I_{HOLD}$	Reverse holding current
$I_{PP}$	Peak pulse current



## 7. Typical Characteristic

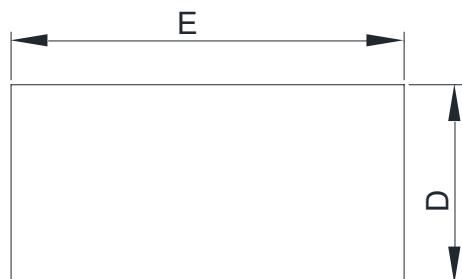


## Measurement Wave According to IEC Standard

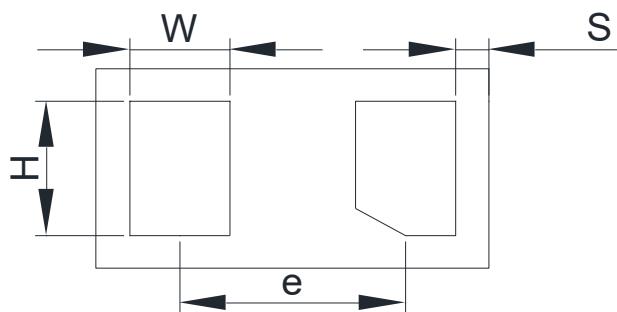


## 8. Dimension (CSP0603-2L)

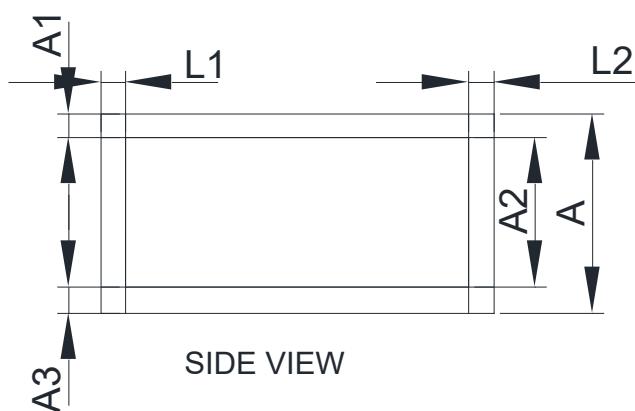
POD(T)



TOP VIEW



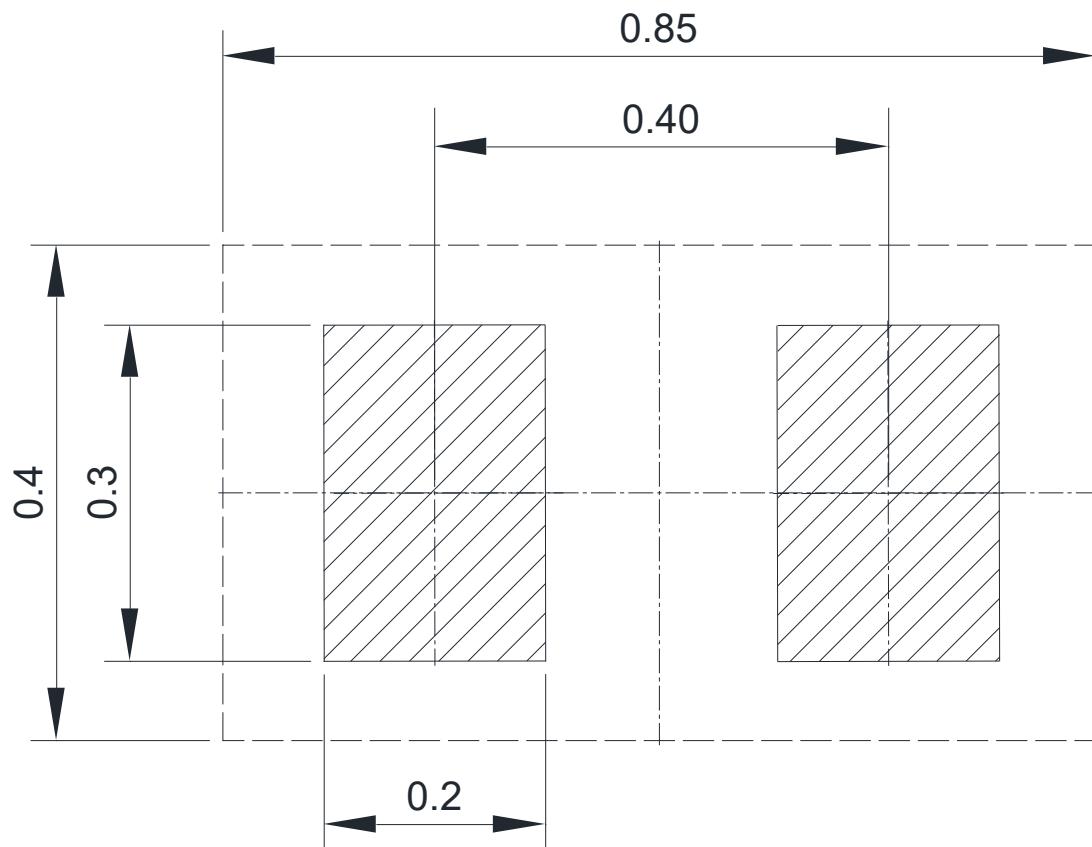
BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER							
SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	0.290	0.315	0.340	W		0.145	
A1	0.020	0.035	0.050	H		0.190	
A2	0.210	0.230	0.250	S		0.052	
A3	0.043	0.050	0.057	e		0.346	
L1	0.010	0.020	0.030	D	0.265	0.295	0.325
L2	0.010	0.020	0.030	E	0.565	0.595	0.625

## 9. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

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