

DESCRIPTION

The JULC0511P is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time, very low capacitance and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JULC0511P complies with the IEC 61000-4-2 (ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into an ultra-small $1.0 \times 0.6 \times 0.5\text{mm}$ lead-free DFN package. The small size and very low capacitance make CLAMP0511T an ideal choice to protect cell phone, digital cameras, audio players, data interface and many other portable applications.

APPLICATIONS

- ✧ Cellular Handsets and Accessories.
- ✧ Personal Digital Assistants.
- ✧ Notebooks and Handhelds.
- ✧ Portable Instrumentation.
- ✧ Digital Cameras.
- ✧ Peripherals.
- ✧ Audio Players.
- ✧ Keypads, Side Keys, USB 2.0, LCD Displays.

FEATURES

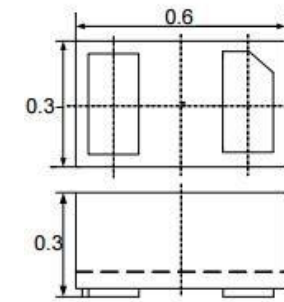
- ✧ Ultra small package: $1.0 \times 0.6 \times 0.5\text{mm}$.
- ✧ Protects one data or power line.
- ✧ Ultra low leakage: nA level.
- ✧ Working voltage: 5V.
- ✧ Low clamping voltage.
- ✧ 2-pin leadless package.
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns).
- ✧ RoHS Compliant.

ORDERING INFORMATION

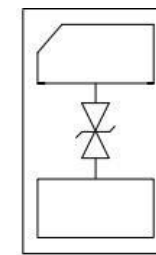
- ✧ Device: JULC0511P.
- ✧ Package: DFN1006-2.
- ✧ Packing: Tape & Reel.
- ✧ Quantity per reel: 5,000pcs .
- ✧ Reel Size : 7 inch.

MACHANICAL DATA

- ✧ Package: DFN1006-2 ($1.0 \times 0.6 \times 0.5\text{mm}$).
- ✧ Lead Finish: NiPdAu.
- ✧ Case Material: "Green" Molding Compound.
- ✧ UL Flammability Classification Rating 94V-0.
- ✧ Moisture Sensitivity: Level 3 per J-STD-020.
- ✧ Terminal Connections: See Diagram Below.
- ✧ Marking Information: See Below.



Package Dimensions

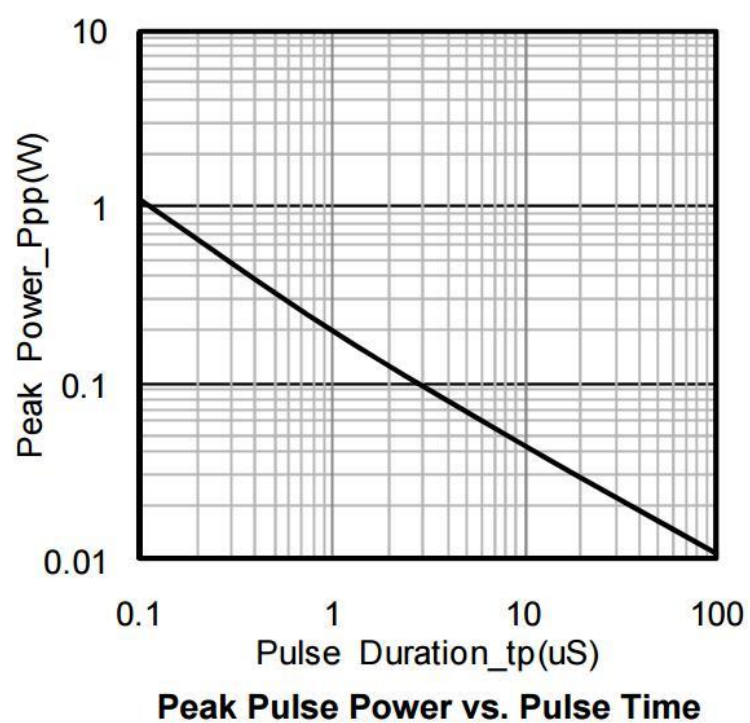
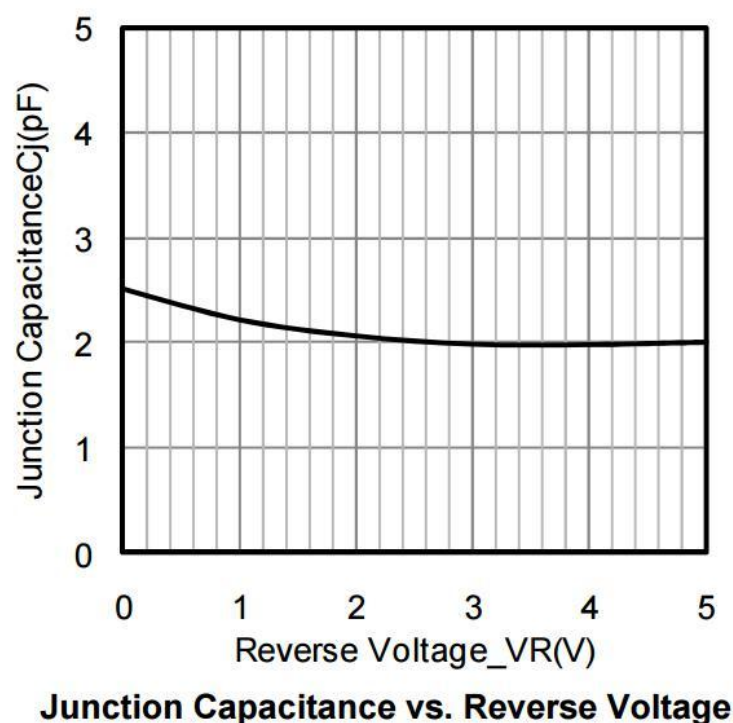


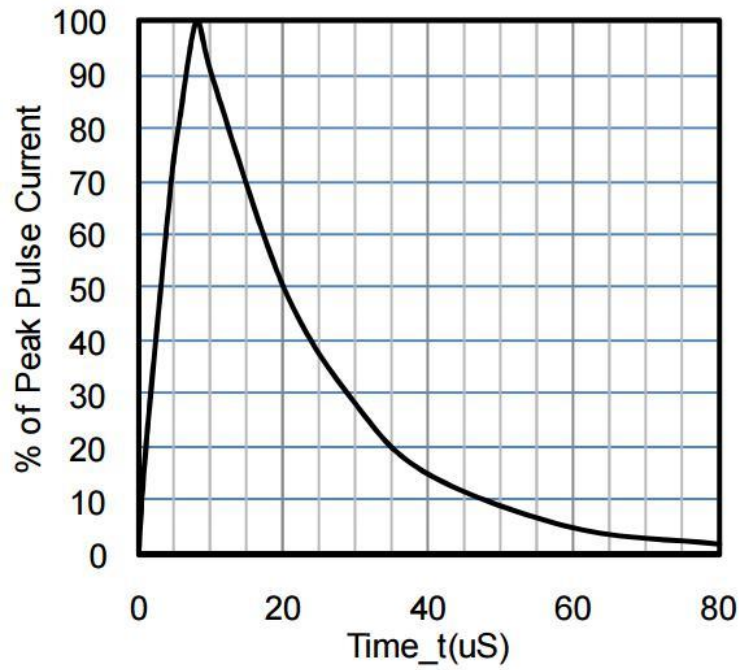
DEVICE CHARACTERISTICS

ABSOLUTE MAXIMUM RATING			
Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	± 15	kV
	ESD per IEC 61000-4-2 (Contact)	± 8	
T_J	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

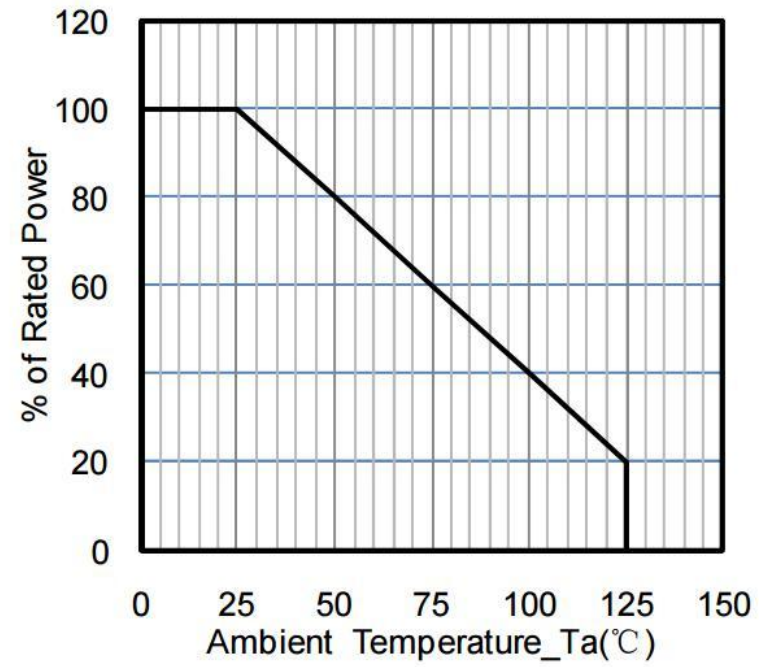
ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	6.0			V
I_R	Reverse Leakage Current	$V_{RWM} = 5\text{V}$			0.2	μA
V_C	Clamping Voltage 1	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			9.8	V
C_J	Junction Capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$		2.5		pF

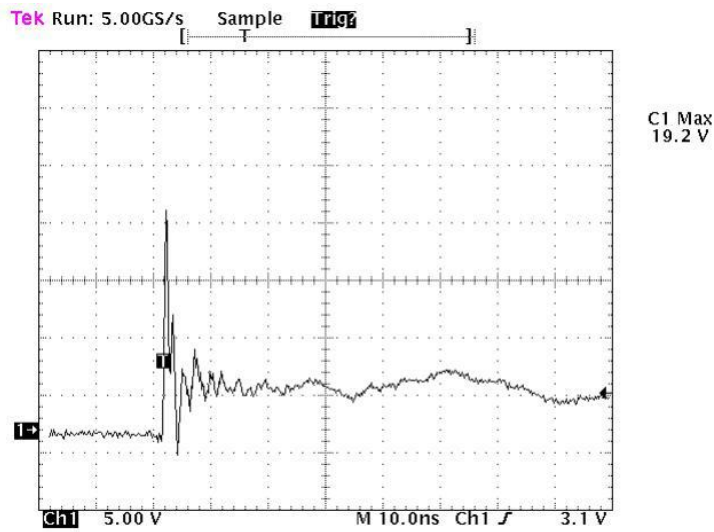
ELECTRICAL PERFORMANCE CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)




8 X 20uS Pulse Waveform



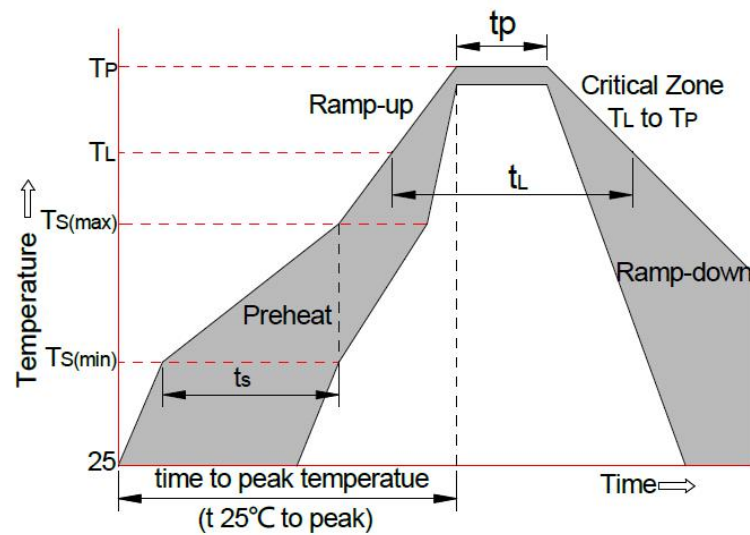
Power Derating Curve



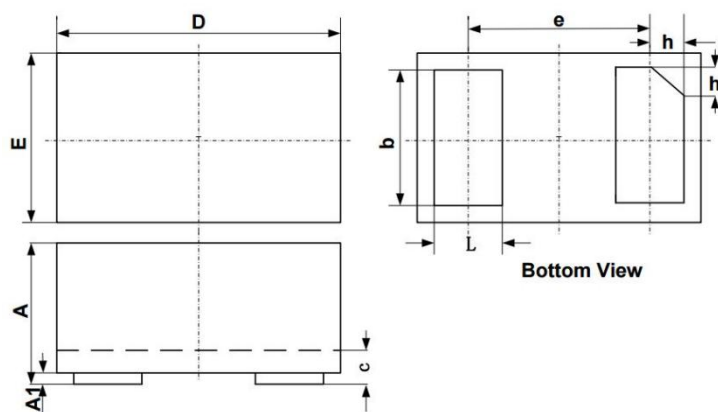
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

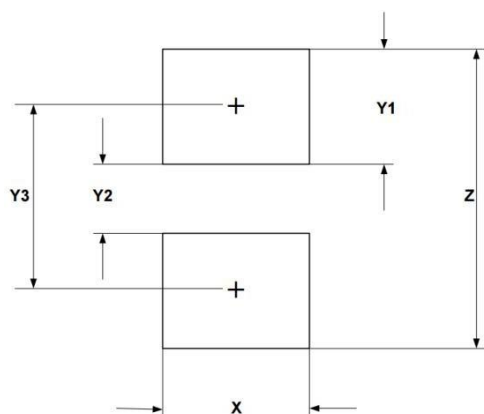
SOLDERING PARAMETERS



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{s \text{ (min)}}$)	+150°C
	-Temperature Max ($T_{s \text{ (max)}}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs
Average ramp up rate(Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{S \text{ (max)}}$ to T_L -Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L) (Liquid us)	+217°C
	-Temperature (t_L)	60-150 secs
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6 °C/secs. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

DFN1006-2 PACKAGE OUTLINE DIMENSIONS


SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

SUGGESTED LAND PATTERN


SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

Website: <http://www.jksemi.com> For additional information,
 please contact your local Sales Representative.

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