

DESCRIPTION

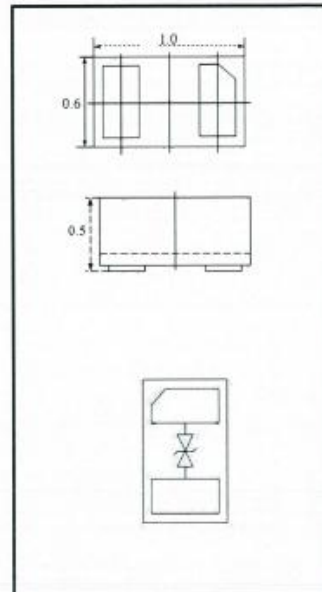
The JULC0501P is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JULC0501P complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 15 kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size and high ESD surge protection make JULC0501P an ideal choice to protect cell phone, digital cameras, audio play-ers 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

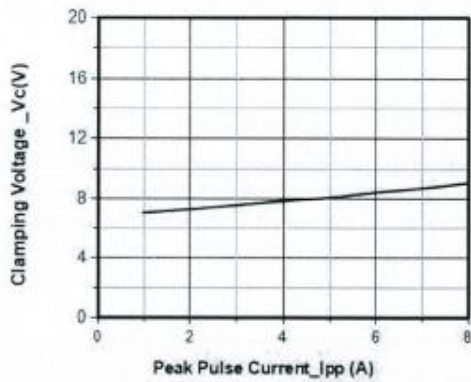
- ◇ Ultra small package: 1.0x0.6x0.5mm.
- ◇ Protects one data or power line.
- ◇ Ultra low leakage: nA level.
- ◇ Working voltage: 5V.
- ◇ Low clamping voltage.
- ◇ 2-pin leadless package.
- ◇ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test Air discharge: ± 30 kV
 - Contact discharge: ± 15 kV
 - IEC61000-4-4 (EFT) 40A (5/50ns).
- ◇ RoHS Compliant.


ORDERING INFORMATION

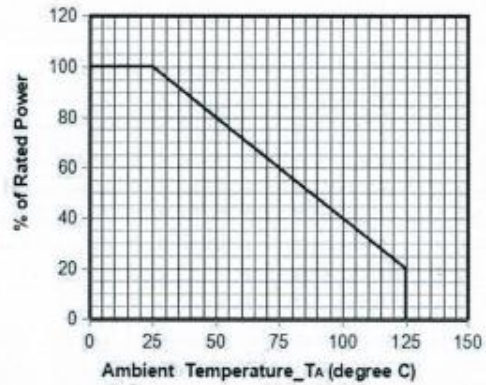
- ◇ Device: JULC0501P.
- ◇ Package: DFN1006-2.
- ◇ Packing: Tape & Reel.
- ◇ Quantity per reel: 10,000pcs .
- ◇ Reel Size : 7 inch.

MACHANICAL DATA

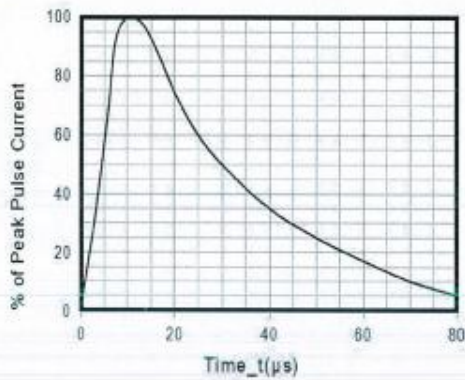
- ◇ Package: DFN1006-2 (1.0x0.6x0.5mm).
- ◇ Case Material: "Green" Molding Compound.
- ◇ Moisture Sensitivity: Level 3 per J-STD-020.
- ◇ Terminal Connections: See Diagram Below.
- ◇ Marking Information: See Below.



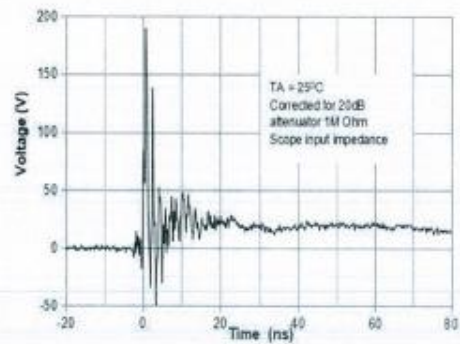
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu s$)



Power Derating Curve



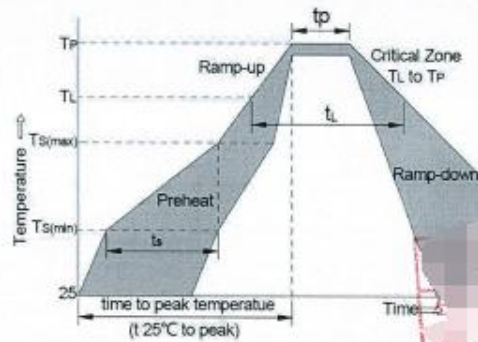
8 X 20µs Pulse Waveform



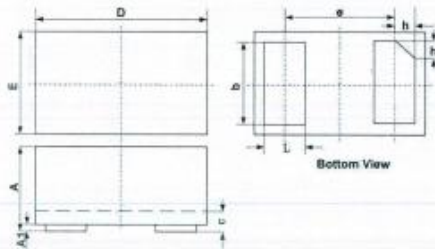
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

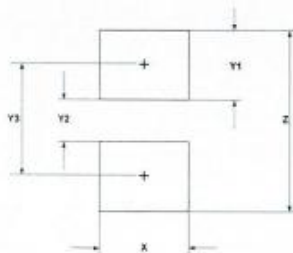
SOLDERING PARAMETERS



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (T_s (min))	+150°C
	-Temperature Max (T_s (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 (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 (tp)		30 secs. Max
Ramp-down Rate		6 °C/secs. Max
xTime 25°C to Peak Temp (T_r)		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

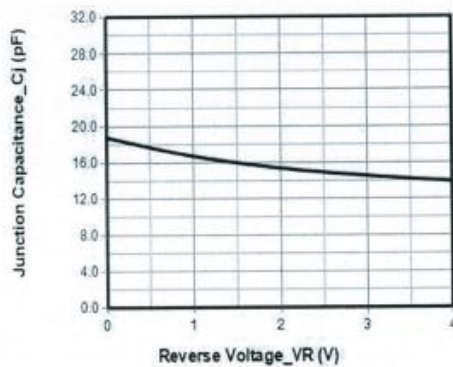
Website: <http://www.jksemi.com> For additional information,
 please contact your local Sales Representative.
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DEVICE CHARACTERISTICS

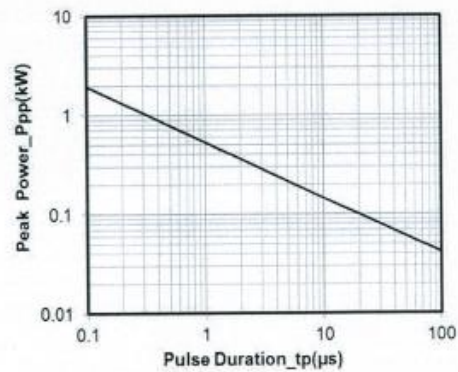
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	100	W
Peak Pulse Current (8/20 μ s)	IPP	8	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 15	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6		8	V	It = 1mA
Reverse Leakage Current	IR			0.5	μ A	VRWM = 5V
Clamping Voltage	VC			8	V	IPP = 1A
Clamping Voltage	VC			12	V	IPP = 8A
Junction Capacitance	CJ		15		pF	VR = 0V, f = 1MHz

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


Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time