

## DESCRIPTION

The JGUB12D2 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JGUB12D2 complies with the IEC 61000-4-2 (ESD) standard with  $\pm 30$  kV air and  $\pm 30$  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 JGUB12D2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

## APPLICATIONS

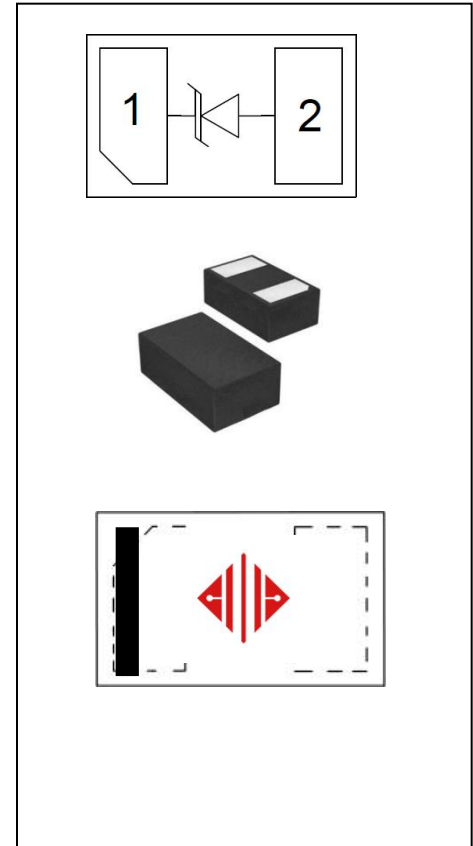
- ✧ Mobile Phones.
- ✧ Battery Protection.
- ✧ Power Line Protection.
- ✧ Vbat pin for Mobile Devices.
- ✧ Hand Held Portable Applications.

## FEATURES

- ✧ Ultra small package: 1.0x0.6x0.5mm.
- ✧ Protects one data or power line.
- ✧ Ultra low leakage: nA level.
- ✧ Low clamping voltage.
- ✧ 2-pin leadless package.
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30$  kV
    - Contact discharge:  $\pm 30$  kV
  - IEC61000-4-4 (EFT) 80A (5/50ns)
  - IEC61000-4-5 (Lightning) 50A (8/20 $\mu$ s).
- ✧ RoHS Compliant.

## MECHANICAL CHARACTERISTICS

- ✧ DFN1006-2(0402) Package.
- ✧ Tape & Reel : 10,000pcs.
- ✧ Reel Size : 7 inch.



**DEVICE CHARACTERISTICS**
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

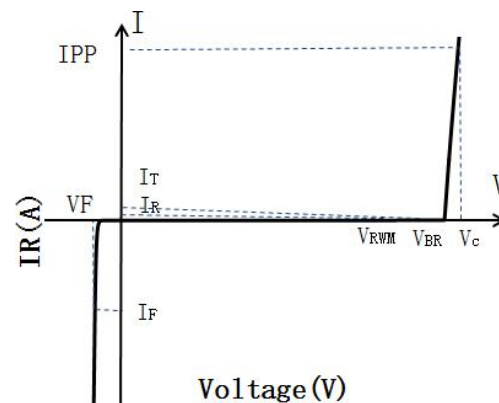
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppp	1500	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	50	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

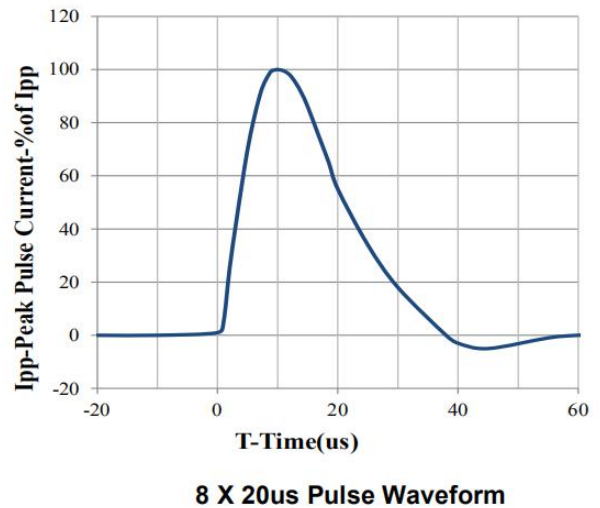
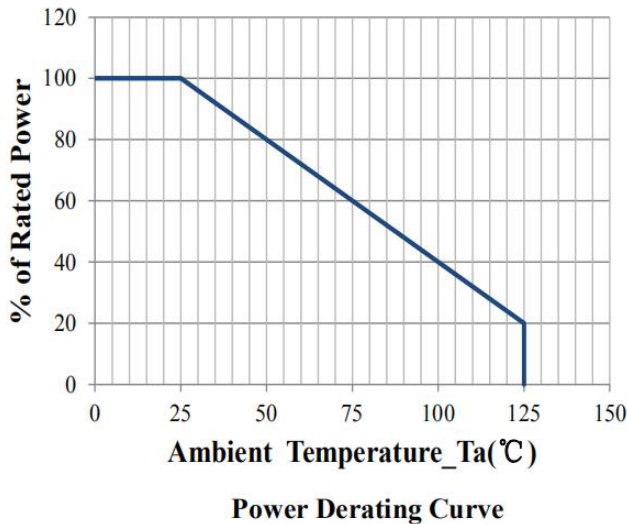
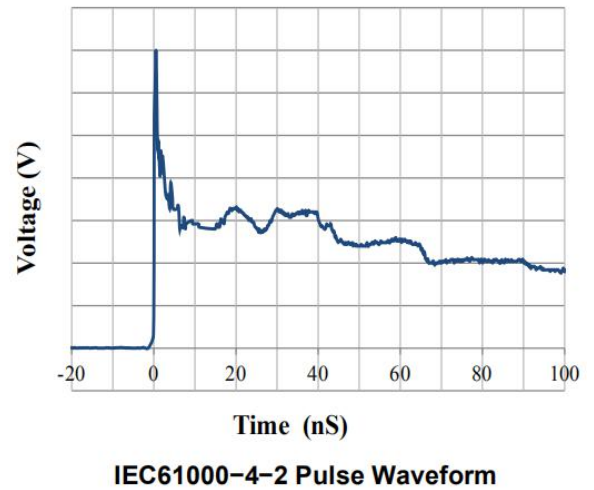
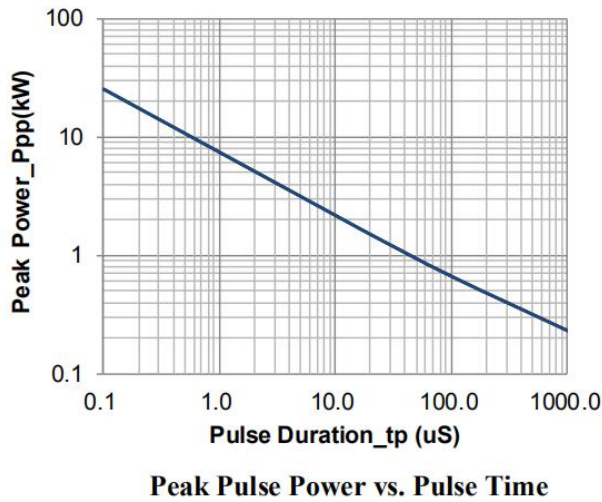
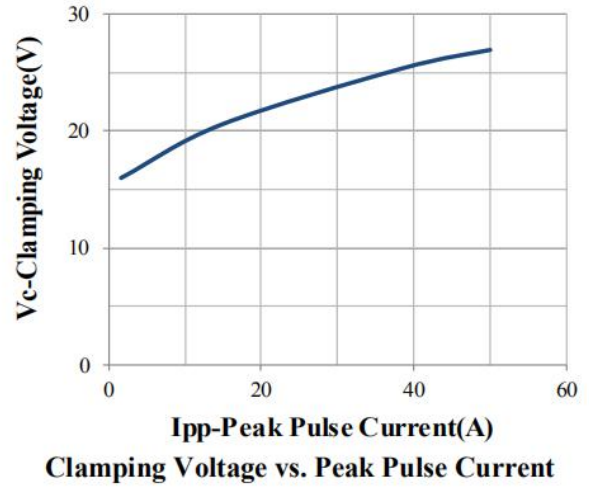
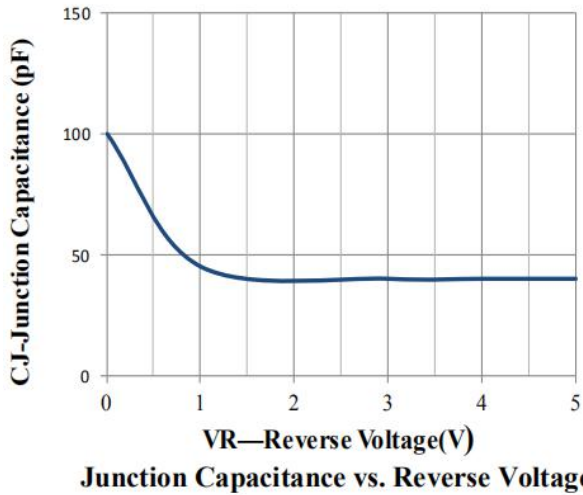
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	13	14	16.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12\text{V}$			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 20\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		22	24	V
Clamping Voltage	$V_C$	$I_{PP} = 50\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		26	30	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		100	150	pF

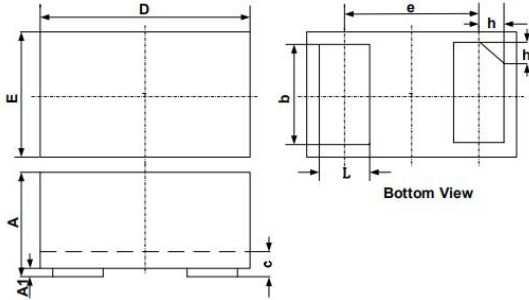
**ELECTRICAL PARAMETER**

Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$

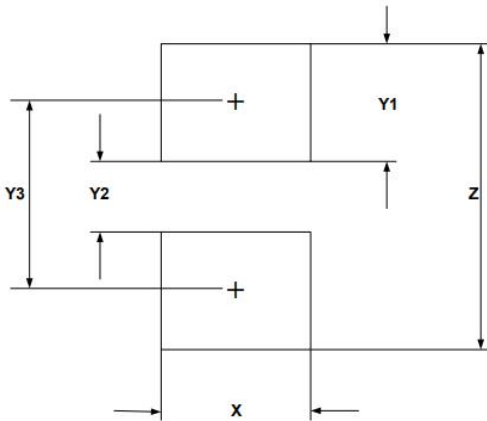


**TYPICAL CHARACTERISTICS**( $T_A=25^\circ\text{C}$  unless otherwise Specified)



**DFN1006-2(0402) 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>

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