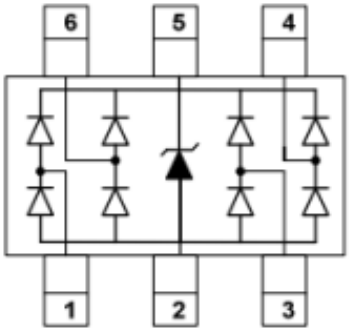
Description

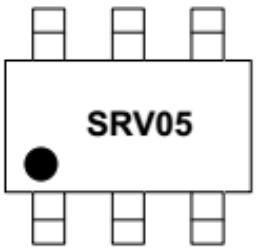
The JLE05UUT2-6B is a low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The JLE05UUT2-6B complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±25kV contact discharge. It is assembled into a 6-lead SOT23-6 lead-free package. The leads are finished with lead-free matte tin. Each device will protect up to four high-speed lines. The combination of small size, low capacitance, and high surge capability makes them ideal for use in applications such as 10/100 Ethernet, USB 2.0, and video interfaces.

Circuit Diagram



Circuit and Pin Schematic

Marking Diagram



Transparent top view

SRV05:Device Marking Code

Features

* Low capacitance:1.5pF typical (I/O to I/O)
* Ultra Low leakage: nA level
* Operating voltage: 5V
* Low clamping voltage
* Up to four lines and one power line protects
* Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±25kV
  – IEC61000-4-5 (Lightning) 25A (8/20μs)
* RoHS Compliant
* Package: SOT23-6

Applications

* USB 2.0 power and data line
* Monitors and flat panel displays
* Set-top box and digital TV
* Video graphics cards
* Digital visual interface (DVI)
* Notebook Computers
* SIM Ports
* 10/100 Ethernet
* IEEE 1394 firewire ports

Ordering Information

Part Number	Packaging	Reel Size
JLE05UUT2-6B	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

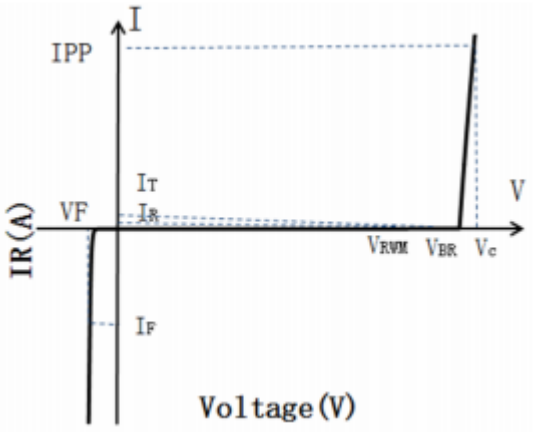
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	500	W
Peak Pulse Current (8/20μs)	IPP	25	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±25	kV
Operating Temperature Range	TJ	−55to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

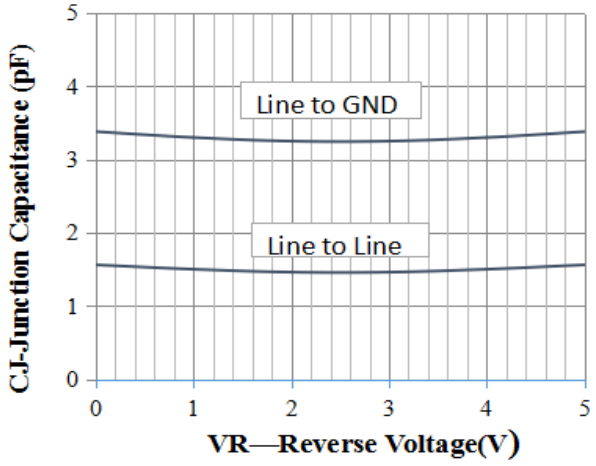
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to Pin 2			5	V
Breakdown Voltage	V_{BR}	I_T = 1mA,Pin 5 to Pin 2	6			V
Reverse Leakage Current	I_R	V_{RWM} = 5V,Pin 5 to Pin 2			1	uA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse),any I/O pin to ground			12	V
Clamping Voltage	V_C	I_{PP} = 25A (8 x 20μs pulse),any I/O pin to ground			20	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz,between I/O pins		1.5		pF
Junction Capacitance	C_J	VR = 0V, f = 1MHz,any I/O pin to ground		3.0	5.0	pF

Portion Electronics Parameter

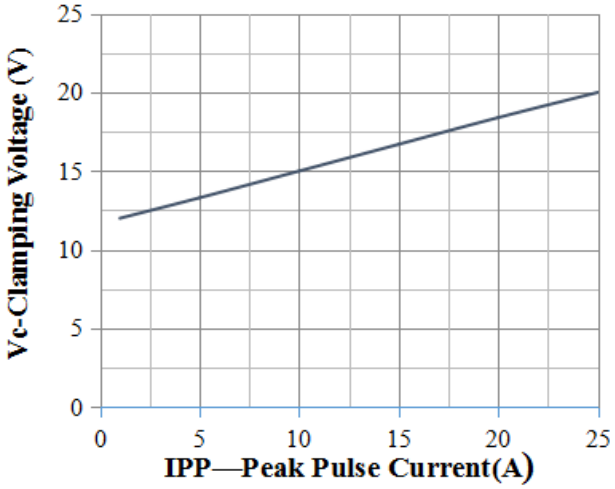
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



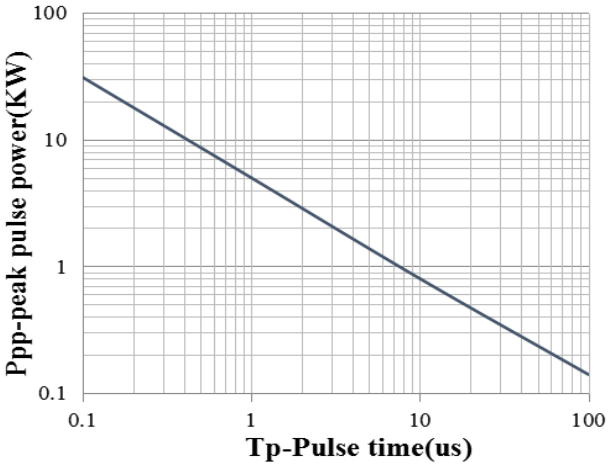
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



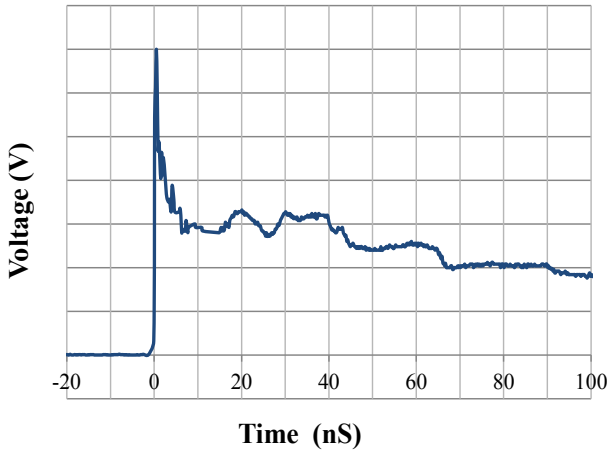
Junction Capacitance vs. Reverse Voltage



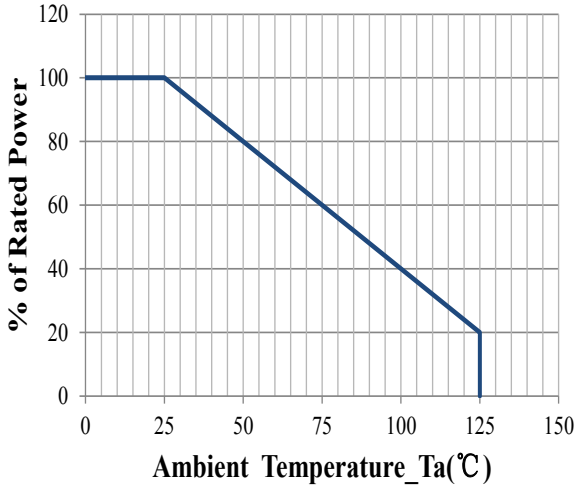
Clamping Voltage vs. Peak Pulse Current



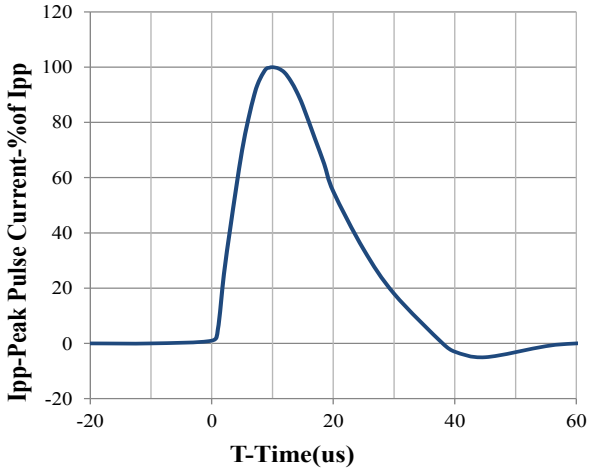
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

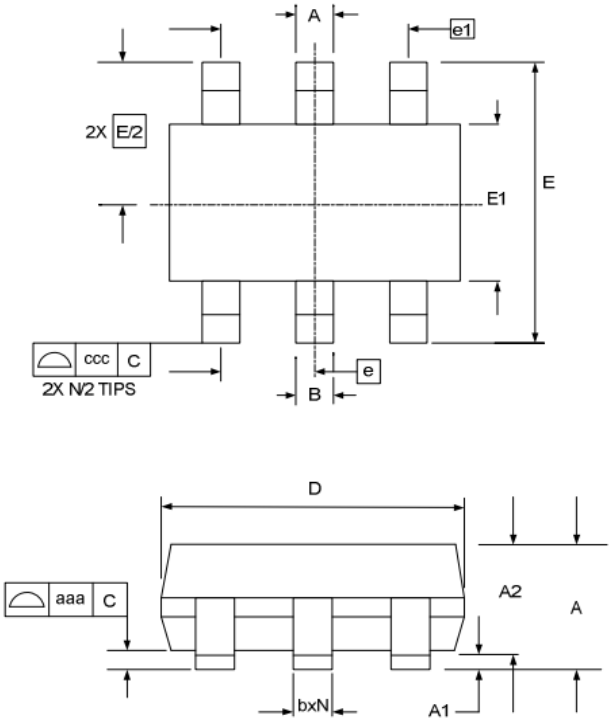


Power Derating Curve



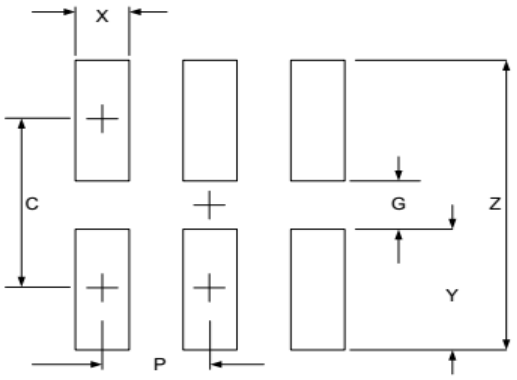
8 X 20us Pulse Waveform

SOT23-6 Package Outline Drawing (Dimensions in millimeters)



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141

NOTICE

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