

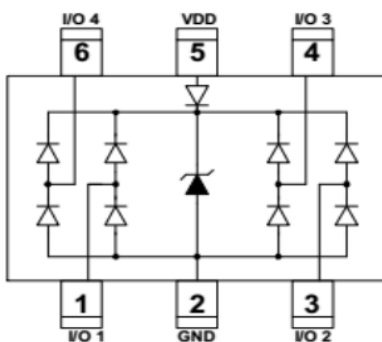
Description

The JE05U4RT20-6 is an ultra 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 JE05U4RT20-6 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a 6-Pin lead-free SOT-23 package. The low capacitance array make it ideal for four high speed data and transmission line. This device is optimized for ESD protection of portable electronics.

Features

- * Ultra low capacitance: 0.3pF typical (I/O to I/O)
- * Operating voltage: 5V
- * Low clamping voltage
- * Up to four data lines and one power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- * RoHS Compliant
- * Package: SOT23-6

Circuit Diagram



Circuit and Pin Schematic

Applications

- * USB 2.0 Power and Data lines protection
- * Digital Visual Interface (DVI)
- * Monitors and Flat Panel Displays
- * Video Graphic Cards
- * Notebook and PC Computers

Ordering Information

Part Number	Packaging	Reel Size
JE05U4RT20-6	3000/Tape & Reel	7 inch

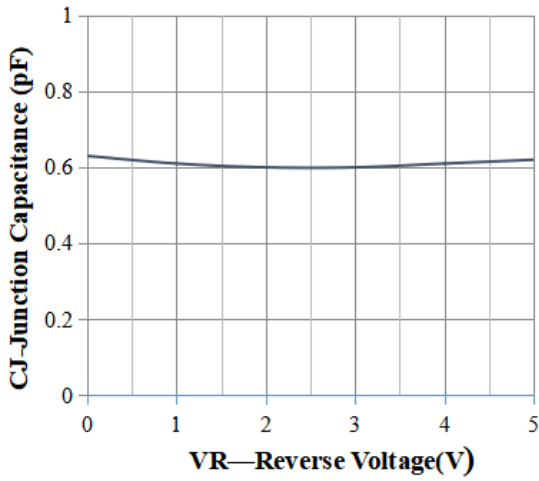
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	65	W
Peak Pulse Current (8/20 μs)	IPP	5	A
ESD per IEC 61000-4-2 (Air)	VESD	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

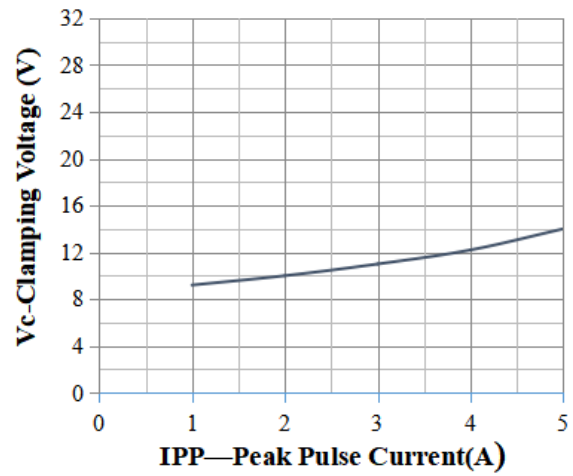
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Any I/O pin to ground			5	V
Breakdown Voltage	V_{BR}	IT = 1mA, any I/O pin to ground	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$, any I/O pin to ground			1	μA
Clamping Voltage	V_C	IPP = 1A (8 x 20 μs pulse), any I/O pin to ground			10	V
Clamping Voltage	V_C	IPP = 5A (8 x 20 μs pulse), any I/O pin to ground			15	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins		0.3	0.4	pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to ground			0.8	pF

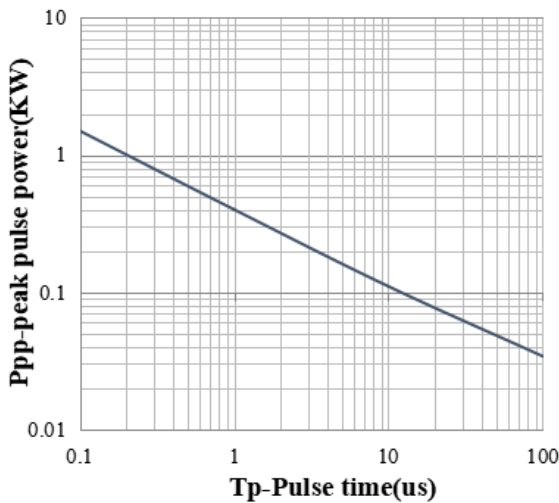
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



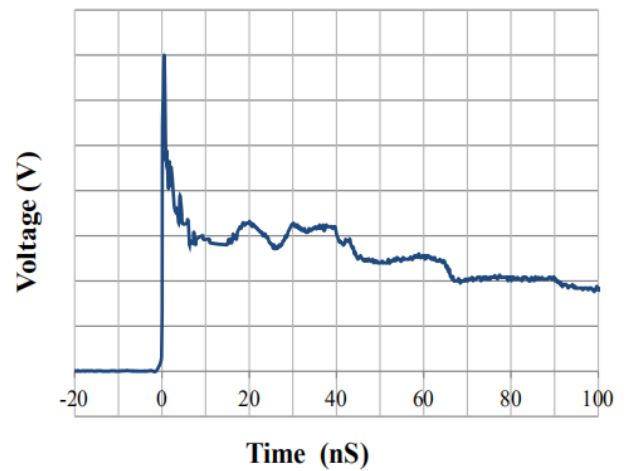
Junction Capacitance vs. Reverse Voltage



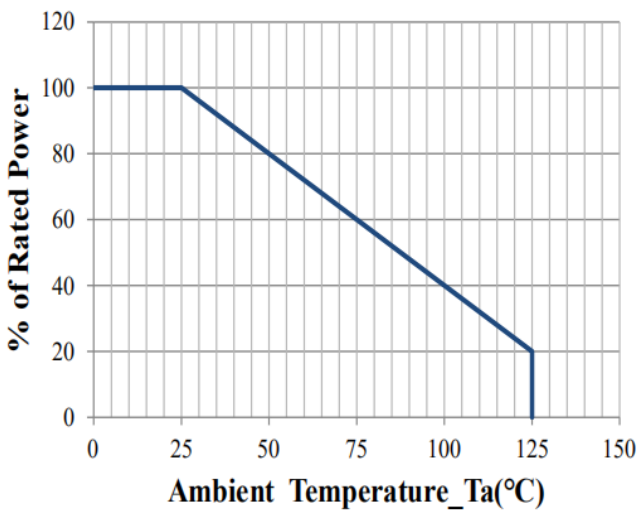
Clamping Voltage vs. Peak Pulse Current



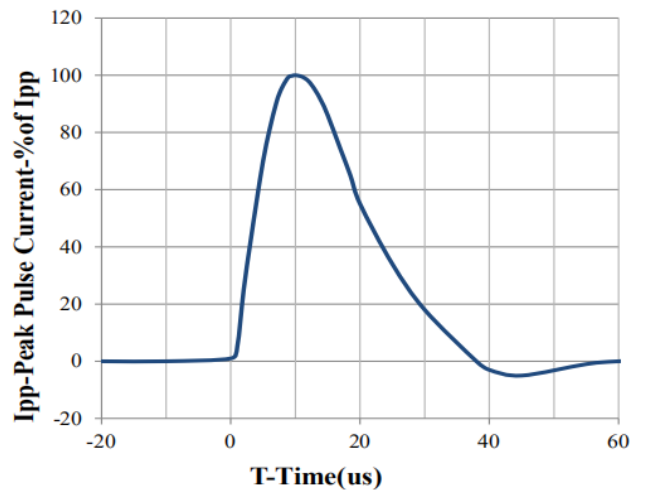
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

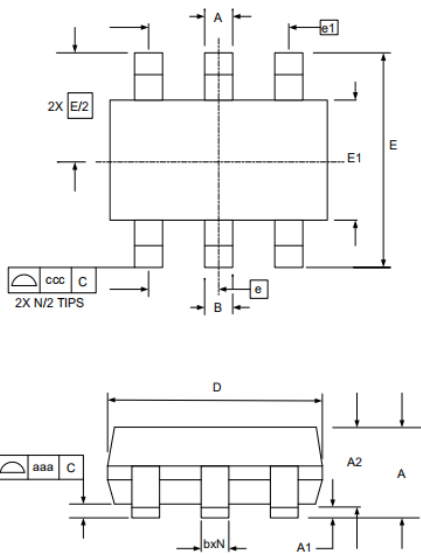


Power Derating Curve



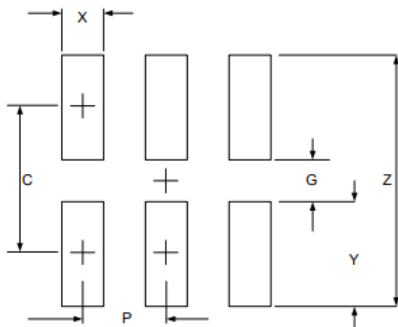
8 X 20us Pulse Waveform

SOT23-6 Package Outline Drawing



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

Jelan-Link reserves the right to make changes without further notice to any products here in.

Only obligations are those in the Jelan-Link Standard Terms and Conditions of Sale and in no case will Jelan-Link be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.