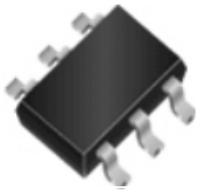
Description

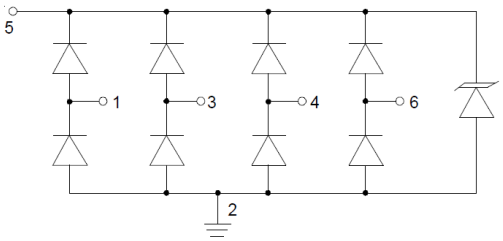
BE6TLC5VU TVS diode is designed to protect high speed data interfaces. It has been specifically designed protect sensitive electronic components which are connected to data and transmission lines from overvoltage caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lighting.

BE6TLC5VU incorporates eight low capacitance steering diodes and a TVS diode in a single package. The BE6TLC5VU is in a SOT23-6L package and will protect four high-speed lines and one VDD line. It may be used to provide ESD protection up to ±20kV Contact and ±25kV air discharge according to IEC61000-4-2 , and withstand peak pulse current up to 40A(5/50ns) according to IEC61000-4-4, 6A (8/20us) according to IEC61000-4-5.

http//:www.szbetterwin.com



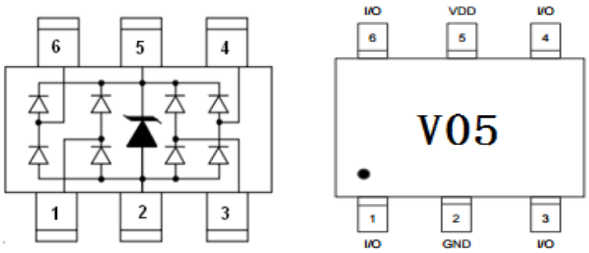
SOT23-6L



Circuit Diagram

Features

- Working voltage: 5V
- Protect four I/O lines and one VDD line
- 90 Watts peak pulse power (t_p=8/20us)
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±25kV (air),
  ±20kV (contact)
  IEC 61000-4-4 (EFT)40A (8/20us)
  IEC 61000-4-5 (Surge)6A (8/20us)
- Low capacitance
- Low clamping voltage
- Low leakage current
- Solid-state silicon-avalanche technology



Marking

Applications

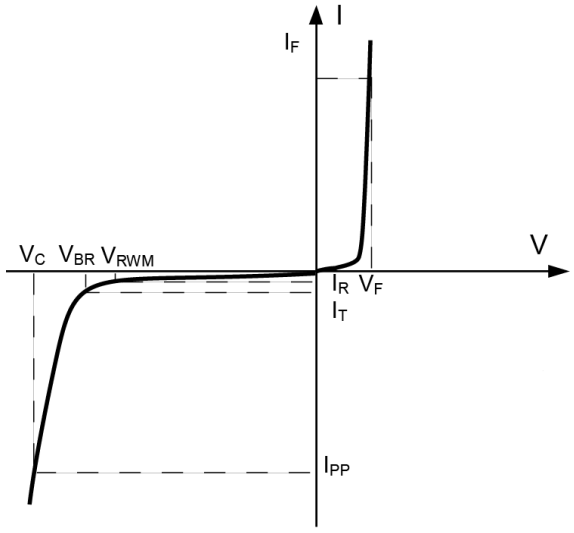
- USB 2.0 Power and Data Line Protection
- Video Graphics Cards
- Digital Visual Interface (DVI)
- 10/1000 Ethernet
- SIM Ports
- Notebook Computer
- Monitors and Flat Panel Displays
- IEEE 1394 Firewire Ports

Order Information

Device	Package	Shipping
BE6TLC5VU	SOT23-6L	3000/Tape&Reel

Definitions of electrical characteristics

Symbol	Parameter
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F
C_j	Junction Capacitance
I_{PP}	Peak Pulse Current



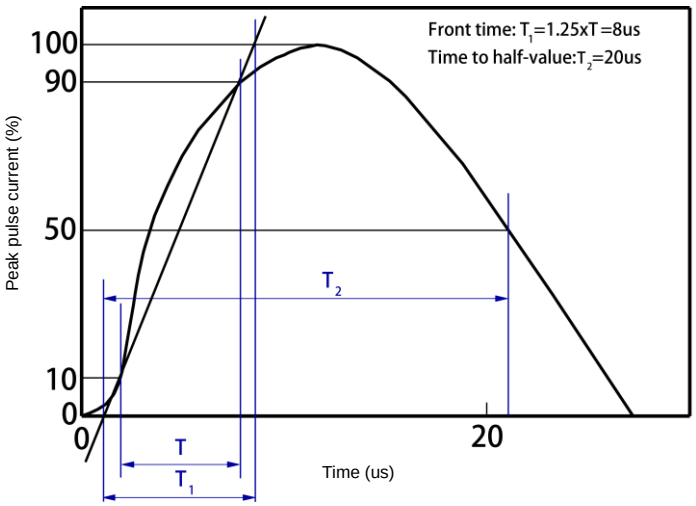
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	90	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±25	kV
ESD according to IEC61000-4-2 contact discharge		±20	kV
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

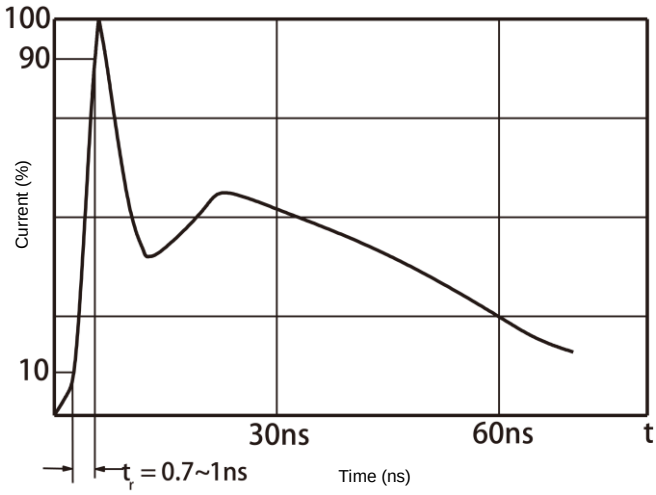
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0			V
Reverse Leakage Current	I_R	V_{RWM} =5V			1.0	μA
Forward voltage	V_F	I_T=10mA		0.8	1.0	V
Peak Pulse Current	I_{PP}	t_P = 8/20μs			6	A
Clamping Voltage (I/O pin to Ground)	V_C	I_{PP}=1A t_P = 8/20μs		9.5	11	V
		I_{PP}=6A t_P = 8/20μs		12.5	15	V
Junction Capacitance	$C_{I/O - GND}$	V_R=0V f = 1MHz, V_{DD}= floated, any I/O to GND	0.5	0.7	0.9	pF
	$C_{I/O - I/O}$	V_R=0V f = 1MHz, any I/O to I/O	0.25	0.35	0.5	pF

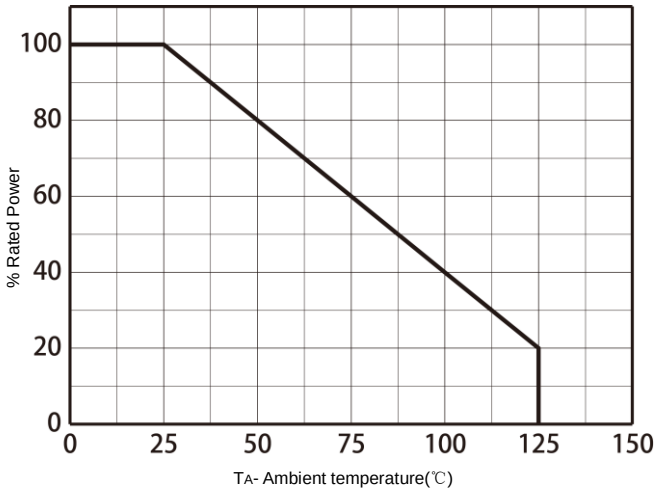
Typical Characteristics (Ta=25℃, unless otherwise noted)



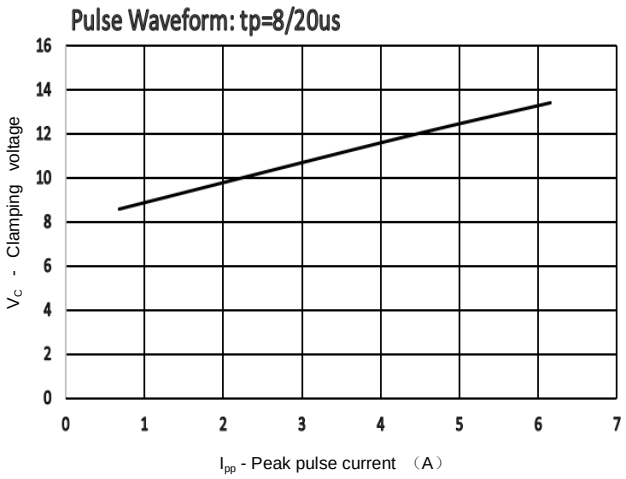
8/20 us waveform per IEC61000-4-5



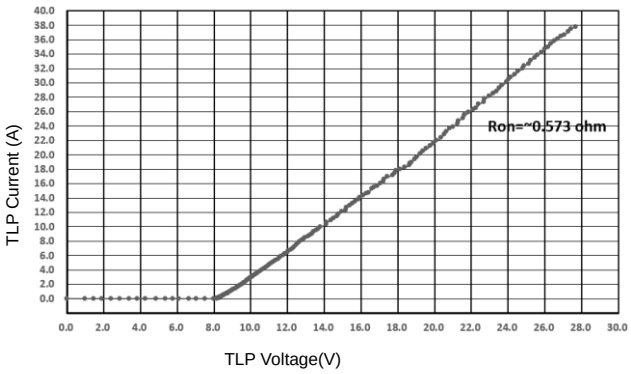
Contact discharge current waveform per IEC61000-4-2



Power derating vs. Ambient temperature

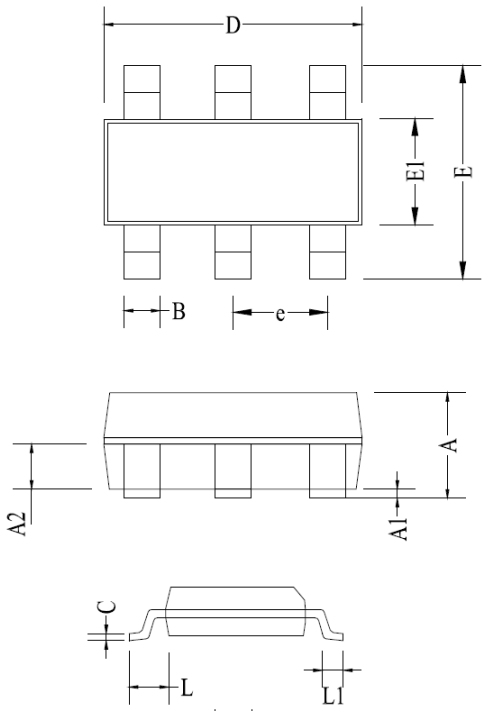


Clamping Voltage vs. Peak pulse current



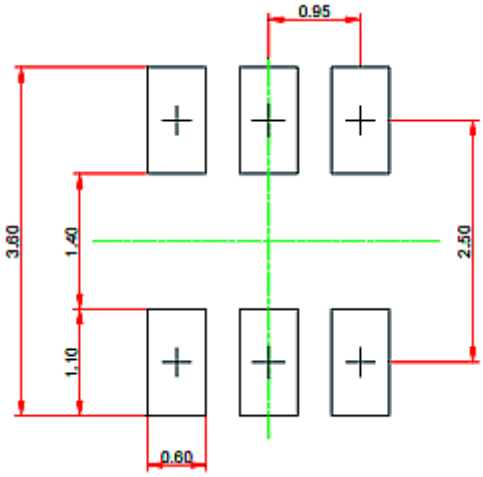
TLP Measurement

Package Outline Dimensions (SOT23-6L)



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	0.90	1.45	0.035	0.057
A1	0.00	0.15	0.000	0.006
A2	0.45	0.65	0.017	0.026
B	0.35	0.50	0.010	0.020
C	0.08	0.20	0.003	0.007
D	2.80	3.00	0.110	0.122
e	0.69	1.02	0.032	0.043
E1	1.50	1.75	0.0060	0.0069
E	2.80BSC		0.110BSC	
L1	0.35	0.60	0.013	0.024
L	0.60		0.024	

Recommend Land Pattern (Unit: mm)



Note:
This recommended land pattern is for reference purpose only.

苏州倍特力电子科技有限公司 RoHS2.0 及 REACH 符合性自我声明表

材料名称	有毒有害物质或元素										
	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr(VI)）	多溴联苯（PBB）	多溴二苯醚（PBDE）	邻苯二甲酸二丁基酯（DBP）	邻苯二甲酸甲苯基丁酯（BBP）	邻邻苯二甲酸二（2-乙基已基）酯（DEHP）	邻苯二甲酸二异丁酯（DIBP）	备注
Wafer	○	○	○	○	○	○	○	○	○	○	○
Lead Frame	○	○	○	○	○	○	○	○	○	○	○
Epoxy	○	○	○	○	○	○	○	○	○	○	○
Wire	○	○	○	○	○	○	○	○	○	○	○
Mold Compound	○	○	○	○	○	○	○	○	○	○	○
……											
……											
拆分部件 n											

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 2011/65/EU 规定的限量要求以下。

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 2011/65/EU 规定的限量要求。

（供应商应将其原材料按要求进行拆分，并按照此表格进行详细标注，对不能满足标准要求的零部件进行具体的原因描述）

苏州倍特力电子科技有限公司 研发部

倍特力
BETTERWIN

整体部件			是否符合(EC) No 1907/2006 标准要求
	SVHC（高关注物质）		符合
	禁止和限制物质“附件 17”		
原材料部件			是否符合(EC) No 1907/2006 标准要求
	Wafer	SVHC（高关注物质）	符合
		禁止和限制物质“附件 17”	
	Lead Frame	SVHC（高关注物质）	符合
		禁止和限制物质“附件 17”	
	Epoxy	SVHC（高关注物质）	符合
		禁止和限制物质“附件 17”	
	Wire	SVHC（高关注物质）	符合
		禁止和限制物质“附件 17”	
	Mold Compound	SVHC（高关注物质）	符合
		禁止和限制物质“附件 17”	
	……		
	……		

注：

1、根据(EC) No 1907/2006 标准要求进行管控 SVHC（高关注物质）及禁止和限制物质。 如果在标准值以内填写是，反之则填写否。

2、请在页面加盖公司印章。

深圳市倍特力电子股份有限公司 研发部