

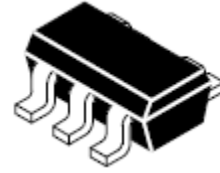
Transient Voltage Suppressor

Version: A1 2022-05-27

Features

- Small SOT23-6L packaging
- IEC 61000-4-2(ESD) $\pm 30\text{KV}$ (air), $\pm 30\text{KV}$ (contact)
- IEC61000-4-5(Lightning) 38A (8/20 μs)
- 950 Watts peak pulse power ($t_p=8/20\mu\text{s}$)
- Low leakage current 1 μA (Max) at 5V
- Moisture sensitivity level: Level 1

Exterior



SOT23-6L

Application Information

- USB 2.0
- Video Graphics Cards
- DVI
- IEEE 1394
- Monitors and Flat Panel Displays
- Notebooks
- 10/100/1000M Ethernet

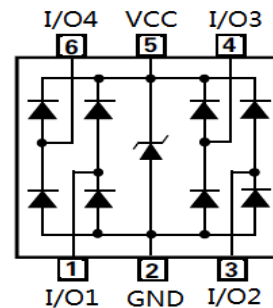
Package (top view)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

Schematic Symbol



Part Number and Electrical Parameter

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}^{\text{①}}@I_{\text{R}}$		$V_{\text{C}}@I_{\text{pp}}^{\text{②}}$		$R_{\text{DYN}}@ \text{TLP}^{\text{③}}$	$V_{\text{C}}@I_{\text{pp}} \text{ TLP}^{\text{③}}$		$C_{\text{O}}^{\text{④}}$	
	μA	V	V	mA	V	A	Ω	V	A	pF	
	MAX		MIN		MAX		TYP	TYP		TYP	MAX
BV-SRV05-4B	1.0	5.0	6.0	1.0	25	38	0.12	10	16	4.5	6.5

Absolute maximum ratings measured at $T = 25^{\circ}\text{C}$ RH = 45%-75% (unless otherwise noted).

① V_{BR} is measured at $I_{\text{R}}=1\text{mA}$,

② Surge Waveform: 8/20 μs . Pin 1,3,4,6 to Pin 2.

③ TLP parameter: $Z_0 = 50\Omega$, $t_p = 100\text{ns}$, $t_r = 1\text{ns}$, R_{DYN} is calculated from 4A to 16A

④ Off-state capacitance is measured in $V_{\text{DC}}=0\text{V}$, $V_{\text{RMS}}=0.3\text{V}$, $f=1\text{MHz}$, Pin 1,3,4,6 to Pin 2.

Transient Voltage Suppressor

Part Numbering System

Mark

BV SRV05-4B

(1) (2)

(1) Bencent Transient Voltage Suppressor

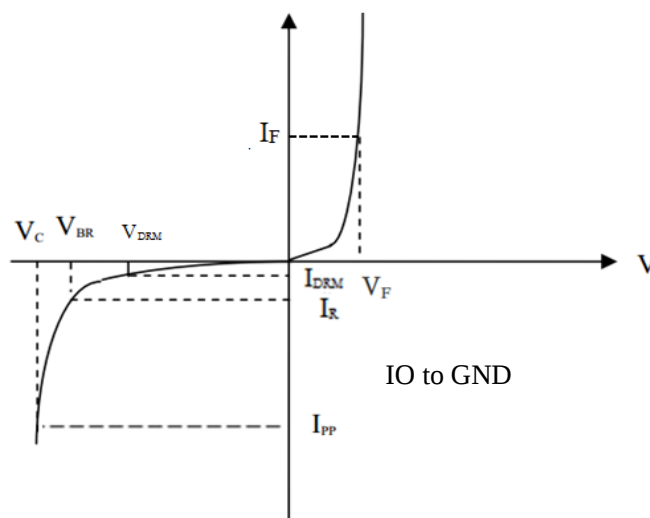
(2) Series: SRV05-4B etc.



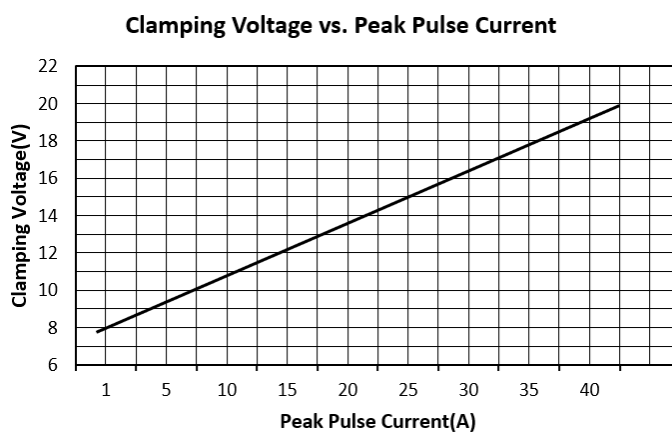
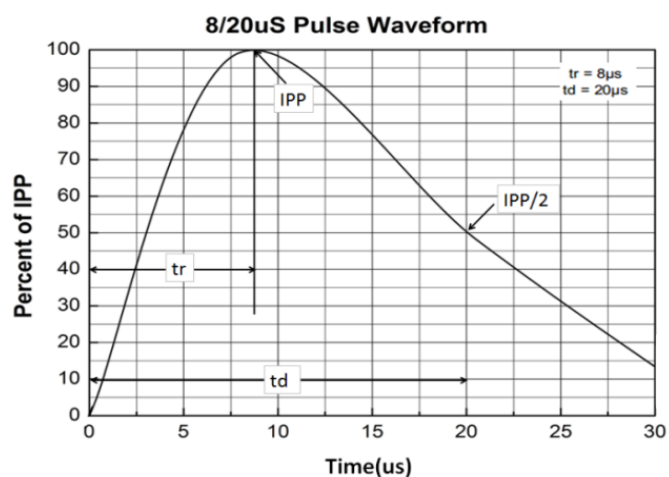
V05C: Part Number

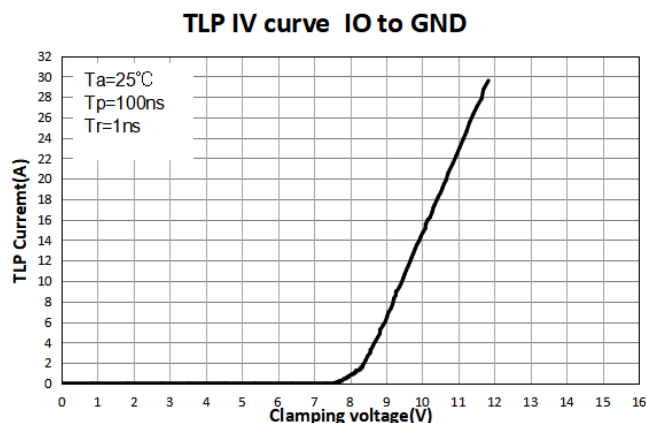
V-I Curve

Parameters	Definition
V_C	Clamping Voltage
I_{PP}	Surge Waveform 8/20 μ s
V_{DRM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
V_F	Forward Voltage
I_{DRM}	Reverse Leakage Current
I_R	Test Current
I_F	Test Current
P_{pp}	Peak Pulse Power Dissipation



Typical Characteristics





Thermal Considerations

symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +150	$^{\circ}\text{C}$
T_S	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$

Environmental Characteristics

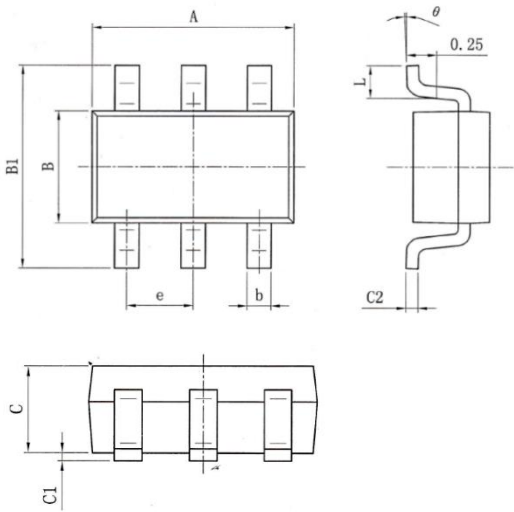
Testing items	Technical standards
High Temperature Reverse Bias Test	Temperature: $150\pm 5^{\circ}\text{C}$ Bias= $80\%V_{\text{DRM}}$ Time: 168H
High Temperature Storage Test	Temperature: 150°C Time: 168H
High-low Temperature Cycle test	Temperature: From -55°C to 125°C Dwell time : 30min, 100cycles
High Temperature & High Humidity Test	Temperature: 85°C Humidity: 85% Time: 168H
Pressure cooker Test	Temperature: 121°C , 2atm. Humidity: 100% Time: 24H
Resistance of soldering heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

Note: The above testing items can be specified by customer's special request

Transient Voltage Suppressor

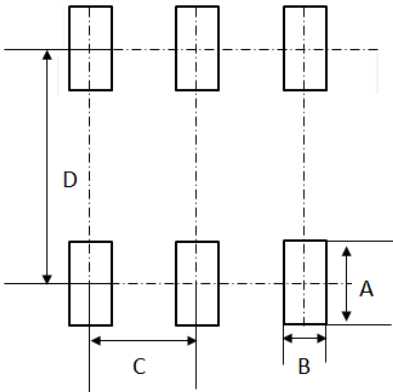
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Product Dimensions



REF	mm	inch
A	2.826~3.026	0.111~0.119
B	1.526~1.726	0.060~0.068
B1	2.600~3.000	0.102~0.118
C	1.000~1.200	0.039~0.047
C1	0.000~0.150	0.000~0.006
C2	0.080~0.200	0.003~0.008
L	0.300~0.600	0.012~0.024
b	0.300~0.500	0.012~0.020
e	0.95BSC	0.037BSC
θ	0°~8°	0°~8°

Recommended Soldering Pad

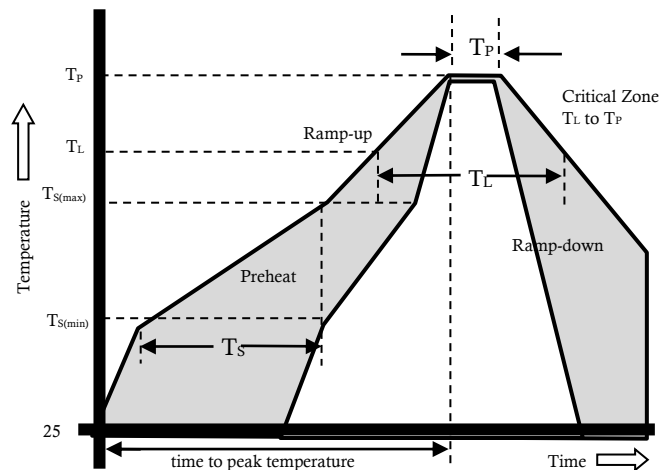


REF	mm	inch
A	1.2	0.047
B	0.6	0.024
C	0.95	0.037
D	2.5	0.098

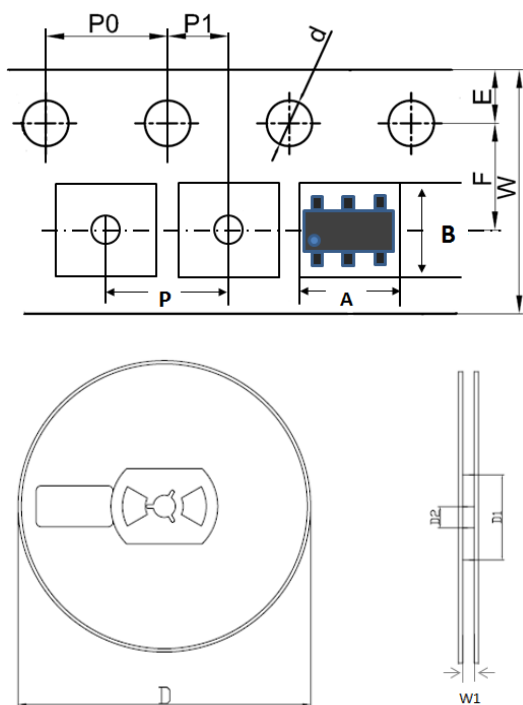
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Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (Min to Max)	60 – 180 secs
Average ramp up rate (Liquid)		3°C/s Max
Tamp (T _L) to peal		
T _S (max) to T _L - Ramp-up Rate		3°C/s Max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 secs
Peak Temperature (T _P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (T _P)		30secs
Ramp-down Rate		6°C/s Max
Time 25°C to peak Temperature (T _P)		8 mins Max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	3.20+/-0.20	0.126+/-0.008
B	3.20+/-0.20	0.126+/-0.008
d	1.50+0.1/-0	0.059+0.004/-0
D	178.00+/-2.00	7.008+/-0.079
D1	55.00+/-3.00	2.165+/-0.118
D2	13.00+/-0.50	0.512+/-0.020
E	1.75+/-0.10	0.069+/-0.004
F	3.50+/-0.20	0.138+/-0.008
P	4.00+/-0.20	0.157+/-0.008
P0	4.00+/-0.20	0.157+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	8.00+/-0.20	0.315+/-0.008
W1	9.50+/-1.00	0.374+/-0.039

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3000	90,000	178	380	220	205