

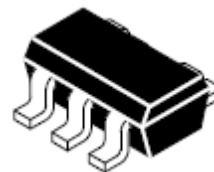
Transient Voltage Suppressor

Version: A0 2020-09-21

Features

- IEC 61000-4-2(ESD) $\pm 15\text{KV}$ (air), $\pm 10\text{KV}$ (contact)
- Low leakage current $1\mu\text{A}$ (Max) at 3.3V
- Small package: SOT23-6

Exterior



SOT23-6

Application Information

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

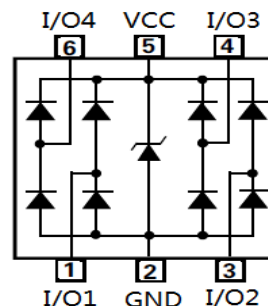
Package (top view)



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	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}@I_{\text{R}}$		$V_{\text{C}}@I_{\text{pp}}^{\text{①}}$		$V_{\text{C}}@I_{\text{pp}}^{\text{①}}$		$\text{Co}^{\text{②}}$	
	μA	V	V	mA	V	A	V	A	pF	
	MAX		MIN		MAX		MAX		TYP	MAX
BV-T603U4CA	1	3.3	4.5	1	8.5	1.0	15	4.0	0.7	0.8

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

① Surge Waveform: $8/20\mu\text{S}$. Pin 1,3,4,6 to Pin 2.

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

Transient Voltage Suppressor

Part Numbering System

BV T6 03 U 4 C A
(1) (2) (3) (4) (5) (6) (7)

- (1) Bencent Transient Voltage Suppressor
- (2) Package:SOT23-6
- (3) Off-state Voltage: 3.3V
- (4) Low capacitance
- (5) 4 Lines protection
- (6) Bi-directional
- (7) Bencent intenal code

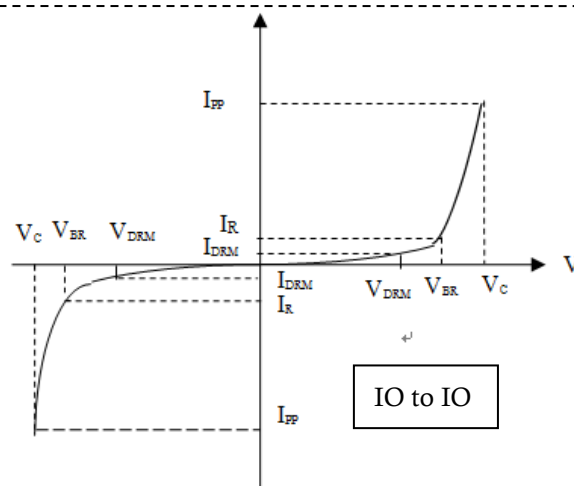
Mark



BC03: 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
I_{DRM}	Reverse Leakage Current
I_R	Test Current
P_{pp}	Peak Pulse Power Dissipation



Thermal Considerations

symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +125	$^{\circ}\text{C}$
T_S	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$

Environmental Characteristics

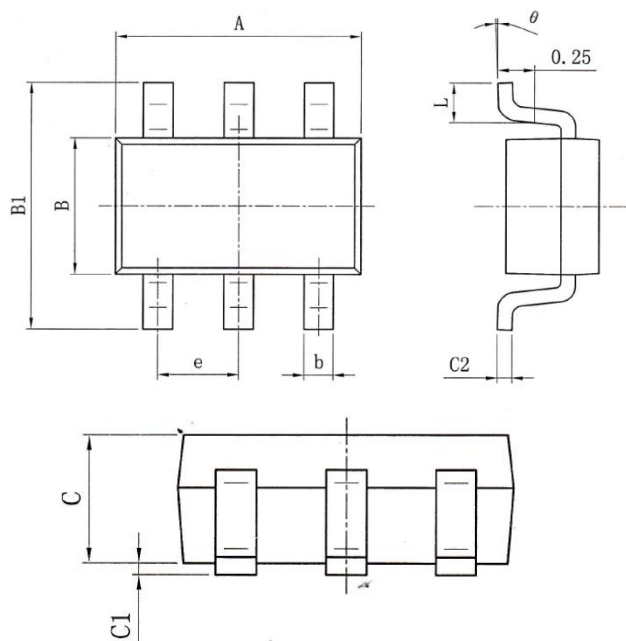
Testing items	Technical standards
High Temperature Reverse Bias Test	Temperature: $150 \pm 5^{\circ}\text{C}$ Bias=80% V_{DRM} . Time:168H
High Temperature Storage Test	Temperature: 150°C Time:168H
High-low Temperature Cycle test	Temperature: From -55°C to 125°C Dwell time : 30min,100cycles
High Temperature &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

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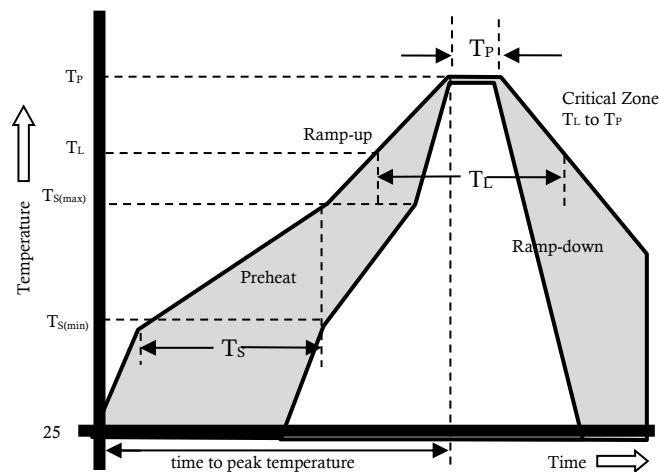
Product Dimensions



REF	mm	inch
A	2.80~3.00	0.110~0.118
B	1.50~1.70	0.059~0.067
B1	2.65~3.05	0.104~0.120
C	1.00~1.20	0.039~0.047
C1	0.00~0.10	0.000~0.004
C2	0.08~0.20	0.003~0.008
L	0.30~0.60	0.012~0.024
b	0.30~0.50	0.012~0.020
e	0.95BSC	0.037BSC
θ	0°~8°	0°~8°

Reflow Profile

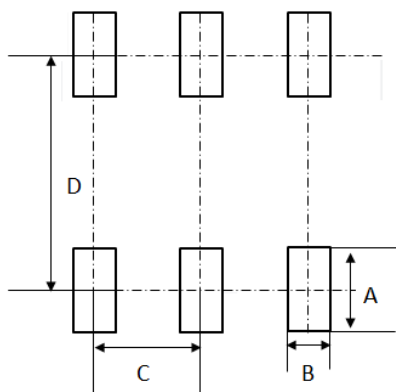
Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (Min to Max)	60 – 180 secs
Average ramp up rate (Liquid)		3°C/s Max
Tamp (T _L) to peak		
T _S (max) to T _L - Ramp-up Rate		3°C/s Max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 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



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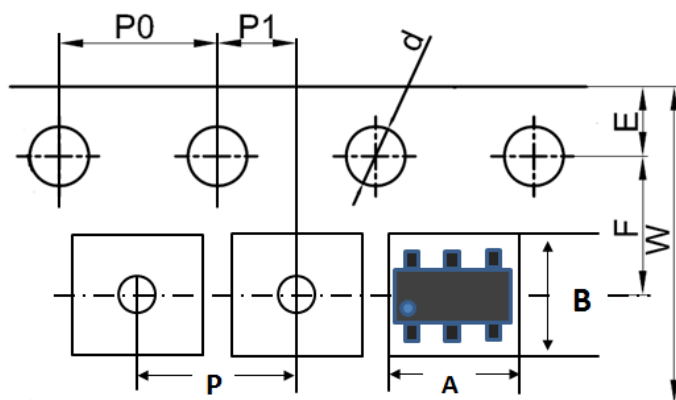
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Recommended Soldering Pad

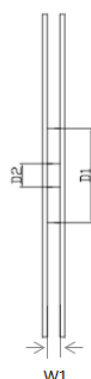
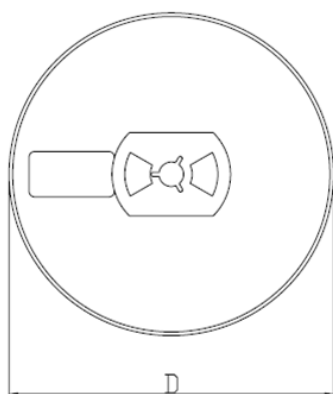


REF	mm	inch
A	1.2	0.047
B	0.6	0.024
C	0.95	0.037
D	2.3	0.091

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	390	370	220