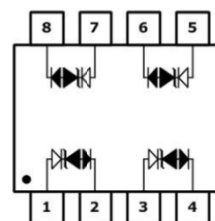


## Transient Voltage Suppressor

### Features

- Low reverse current
- Low Junction capacitance
- IEC 61000-4-2(ESD)  $\pm 30\text{KV}$ (air),  $\pm 30\text{KV}$ (contact)
- 450 Watts peak pulse power ( $t_p=8/20\mu\text{S}$ )


### Exterior



### Application information

- Ethernet Secondary side

### Agency Approvals

Icon	Description
<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003
	Mean lead free

### Part Number and Electrical Parameter

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}^{\text{①}}@I_{\text{R}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{②}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{②}}$		$C_{\text{o}}^{\text{③}}$
	$\mu\text{A}$	V	V	mA	V	A	V	A	pF
	MAX		MIN		MAX		MAX		MAX
BV-3304P8	0.1	3.3	3.5	1	5.8	1	18	25	2

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

①  $V_{\text{BR}}$  is measured at  $I_{\text{R}}=1\text{mA}$ , Pin1to2, Pin3to4, Pin5to6, Pin7to8;

② Surge Waveform: 8/20  $\mu\text{S}$ , Pin1to2, Pin3to4, Pin5to6, Pin7to8;

③ Off-state capacitance is measured in  $V_{\text{DC}}=0\text{V}$ ,  $V_{\text{RMS}}=1\text{V}$ ,  $f=1\text{MHz}$ , Pin1to2, Pin3to4, Pin5to6, Pin7to8;

### Part Numbering System

BV    33    04    P8  
(1)   (2)   (3)   (4)

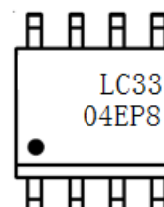
(1) Bencent TVS

(2)  $V_{\text{DRM}}=3.3\text{V}$

(3) 4 lines protect

(4) SOP-8 Package

### Mark

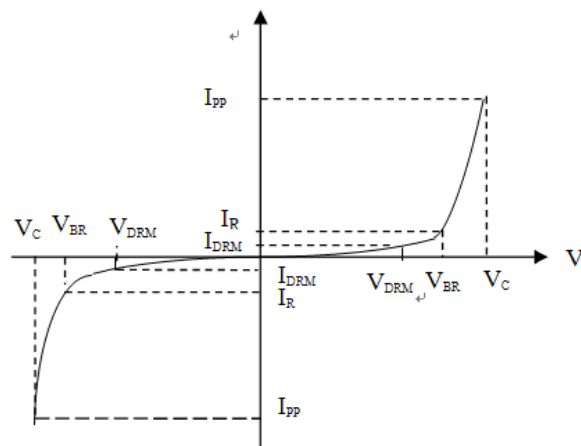


Part Number

## Transient Voltage Suppressor

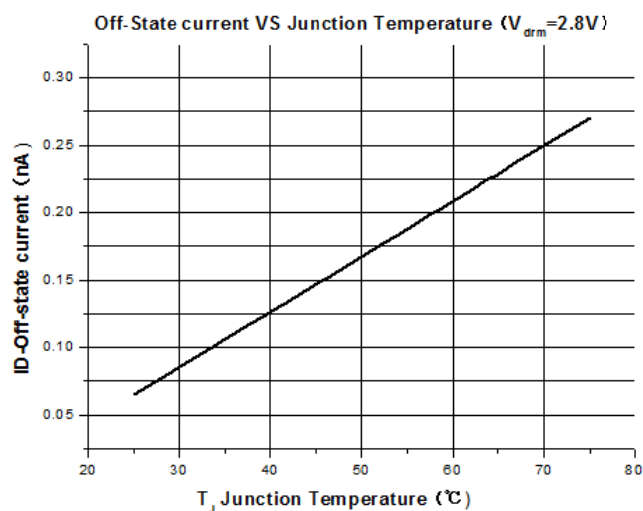
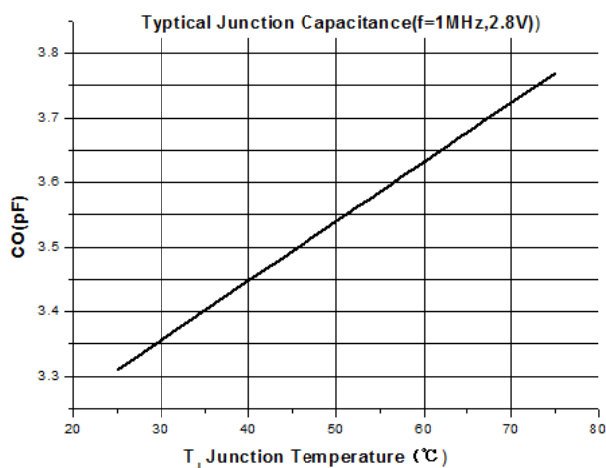
### V-I Curve

Parameters	Definition
$V_C$	Clamping voltage
$I_{PP}$	Surge waveform 8/20 $\mu$ s
$V_{DRM}$	Stand-off Voltage
$V_{BR}$	Breakdown Voltage
$I_{DRM}$	Reverse Leakage Current
$I_R$	Test current for $V_{BR}$
$P_{pp}$	Peak Pulse Power Dissipation



Pin 1&8 to 2&7; Pin 3&6 to 4&5

### Typical Characteristics



### Thermal Considerations

symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-55 to +150	°C
$T_S$	Storage Temperature Range	-55 to +150	°C

**Transient Voltage Suppressor**

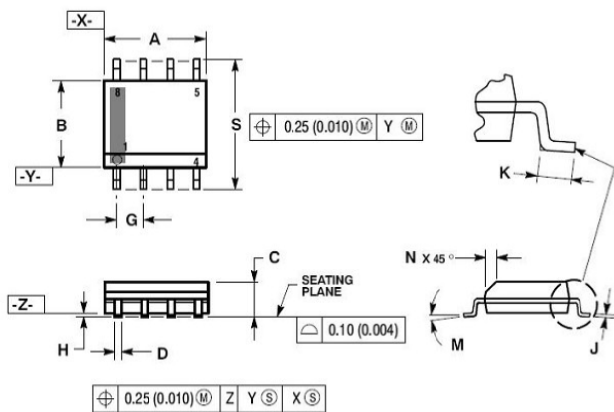
Version: A1 2015-8-10

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $150\pm 3^{\circ}\text{C}$ Bias= $80\%V_{\text{DRM}}$ Time:168H
High Temperature Life Test	Temperature: $150^{\circ}\text{C}$ Time:168H
High-low Temperature Cycle test	Temperature: From $-40^{\circ}\text{C}$ to $125^{\circ}\text{C}$ Dwell time : 30min,10cycles
High Temperature &High Humidity Test	Temperature: $85^{\circ}\text{C}$ Humidity:85% Time:168H
Pressure cooker Test	Temperature: $121^{\circ}\text{C}$ , 2atm. Humidity:100% Time:24H
Resistance of soldering heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

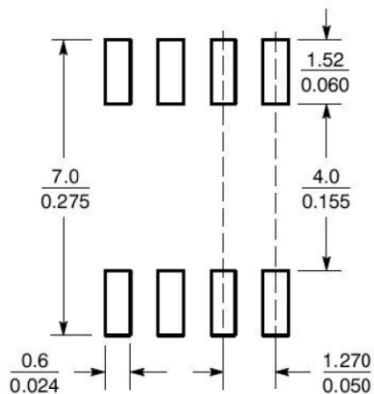
Note: The above testing items can be specified by customer's special request

Product Dimensions



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27BSC		0.05BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.015	0.050
M	$0^{\circ}$	$8^{\circ}$	$0^{\circ}$	$8^{\circ}$
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244

Recommended Soldering Pad

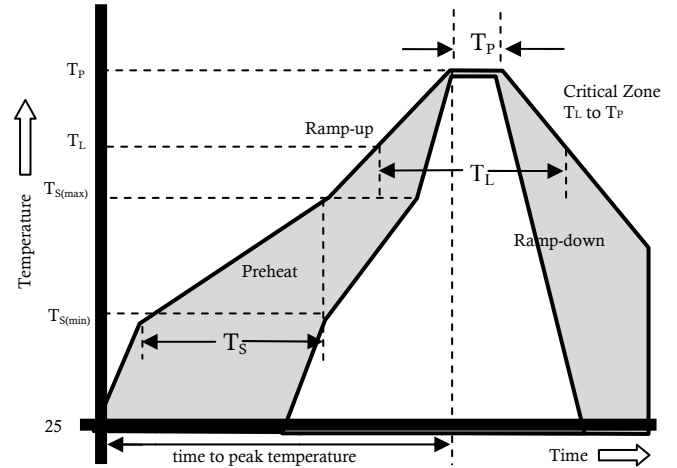


Transient Voltage Suppressor

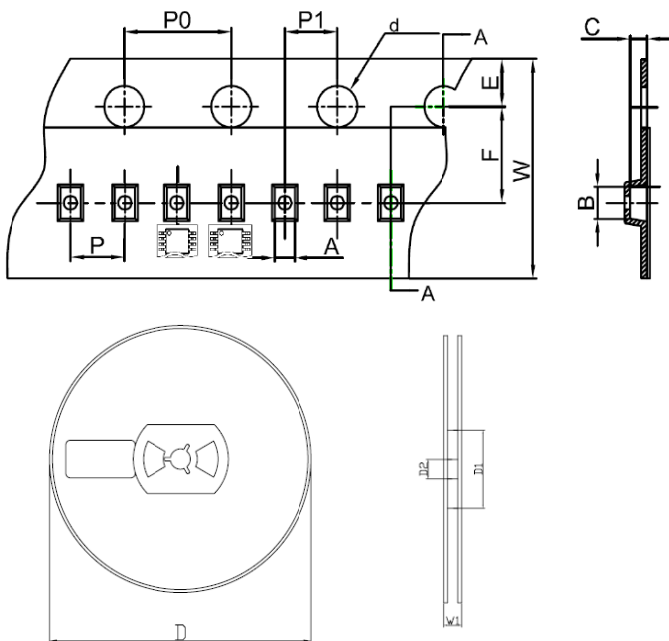
Version: A1 2015-8-10

Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 sec
Average ramp up rate (Liquid) T <sub>amp</sub> (T <sub>L</sub> ) to peak		3°C/s max
T <sub>S(max)</sub> to T <sub>L</sub> - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T <sub>L</sub> ) (Liquid)	217°C
	- Temperature (T <sub>L</sub> )	60 – 150 sec
Peak Temperature (T <sub>P</sub> )		260±0/-5 °C
Time within 5°C of actual peak Temperature (T <sub>P</sub> )		8– 15secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T <sub>P</sub> )		8 min Max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	6.4±0.1	0.252±0.004
B	5.2±0.1	0.205±0.004
d	1.5±0.1	0.059±0.004
D	178±1.0	7.01±0.039
D1	55±3	2.165±0.118
D2	13±0.5	0.512±0.020
E	1.75±0.1	0.069±0.004
F	5.5±0.1	0.217±0.004
P	8±0.1	0.315±0.004
P0	4.0±0.1	0.158±0.008
P1	2.0±0.1	0.079±0.004
W	12.0±0.2	0.472±0.008
W1	14.4±0.5	0.567±0.020

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	500	15,000	177	360	370	220