

## Transient Voltage Suppressor

Version: A2 2023-11-30

### Features

- IEC 61000-4-2 (ESD)  $\pm 30\text{KV}$  (air),  $\pm 30\text{KV}$  (contact)
- IEC61000-4-5(surge): 35A (8/20 $\mu\text{s}$ )
- 600Watts peak pulse power (tp=8/20 $\mu\text{s}$ )
- Low clamping voltage
- Small package: DFN1006-2L
- MSL 1

### Exterior



DFN1006-2L


### Application Information

- Cellular handsets
- Tablets
- Other portable devices

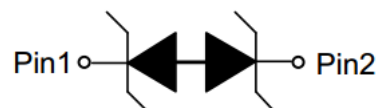
### Package (top view)



### Agency Approvals

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

### Schematic(top view)



### 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		TYP	MAX
BV-FA4.5ZCA	1	4.5	4.6	1	7	1	15	35	65	75

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

①  $I_{\text{DRM}}$  is measured at  $V_{\text{DRM}}=4.5\text{V}$ ;  $V_{\text{BR}}$  is measured at  $I_{\text{R}}=1\text{mA}$

② Surge Waveform: 8/20 $\mu\text{s}$ , pin 1 to pin2 and pin2 to pin1

③ Off-state capacitance is measured in  $V_{\text{DC}}=0\text{V}$ ,  $f=1\text{MHz}$

## Transient Voltage Suppressor

Part Numbering System

Mark

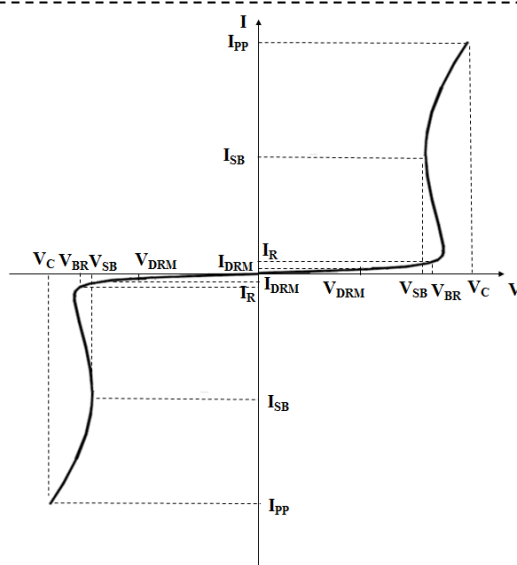
BV FA 4.5 Z C A  
(1) (2) (3) (4) (5) (6)

- (1) Bencent Transient Voltage Suppressor
- (2) Package:DFN1006-2L
- (3) Off-state Voltage: 4.5V
- (4) Normal Capacitance
- (5) Bi-directional
- (6) Bencent intenal code

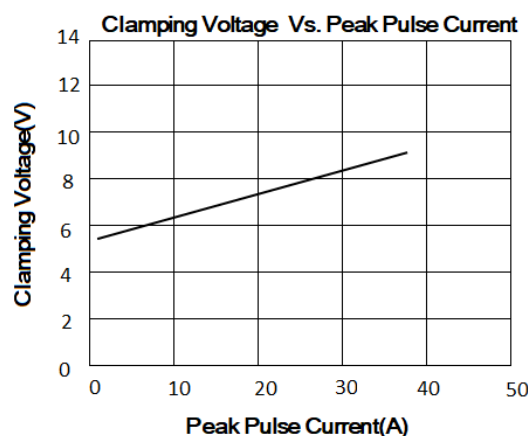
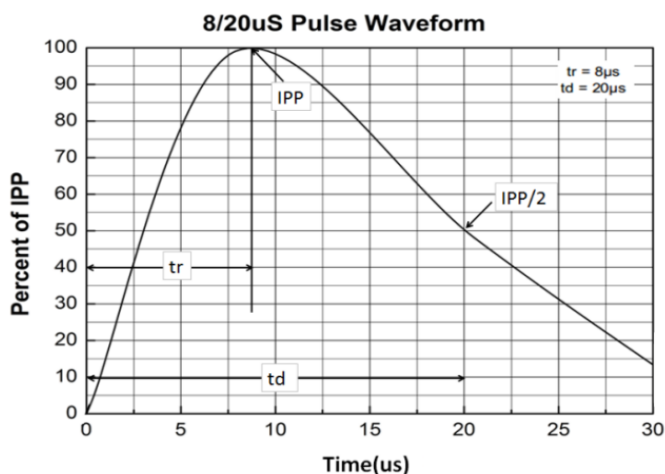


### V-I Curve

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



### Typical Characteristics



### Thermal Considerations

symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-40 to +85	$^{\circ}$ C
$T_S$	Storage Temperature Range	-55 to +150	$^{\circ}$ C

**Transient Voltage Suppressor**

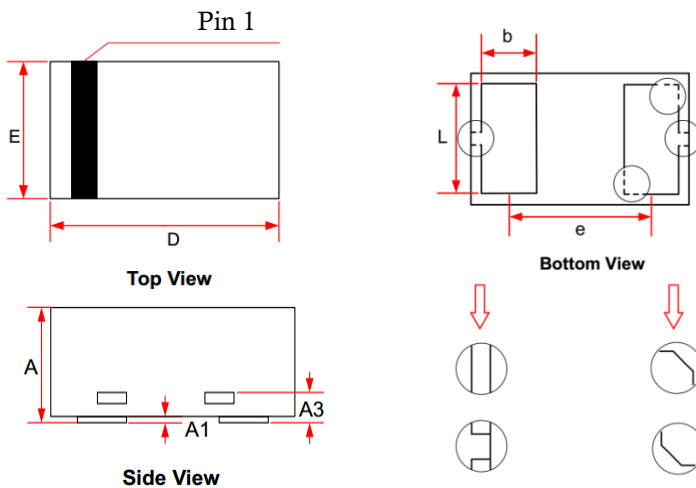
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Environmental Characteristics

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 $-55^{\circ}\text{C}$ to $150^{\circ}\text{C}$ Dwell time: 30min, 100cycles
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

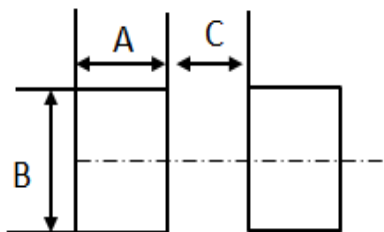
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	0.30~0.55	0.012~0.022
A1	0~0.05	0.000~0.002
A3	0.125 REF	0.020 REF
D	0.95~1.10	0.037~0.043
E	0.55~0.70	0.022~0.028
b	0.20~0.30	0.008~0.012
e	0.65 BSC	0.026 BSC
L	0.45~0.55	0.018~0.022

Recommended Soldering Pad



REF	mm	inch
A	0.35	0.014
B	0.60	0.024
C	0.35	0.014

Notes:

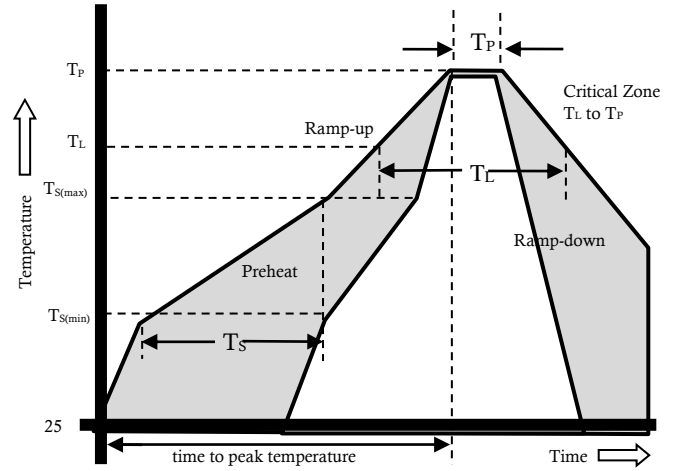
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met

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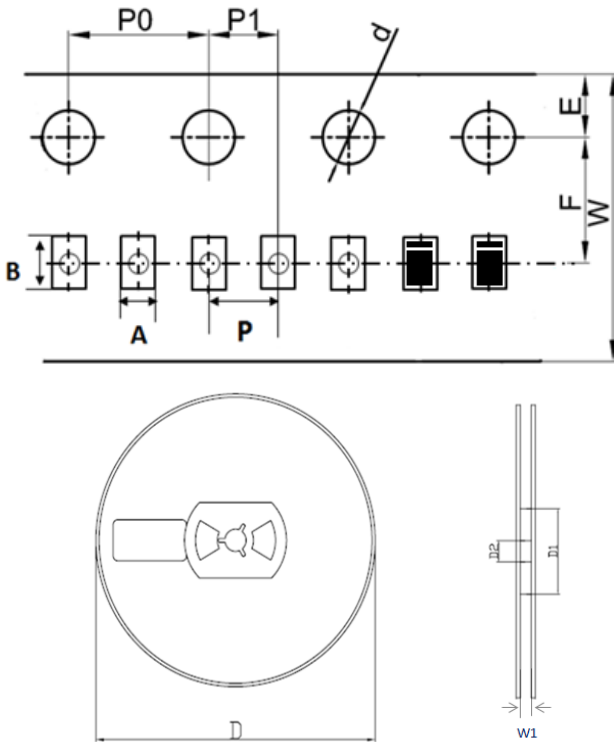
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Reflow Profile

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) Tamp (T <sub>L</sub> ) to peal		3°C/s max
T <sub>S</sub> (max) 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 secs
Peak Temperature (T <sub>P</sub> )		260±0/-5 °C
Time within 5°C of actual peak Temperature (T <sub>P</sub> )		30secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T <sub>P</sub> )		8 mins max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	0.65+/-0.10	0.026+/-0.004
B	1.20+/-0.1	0.047+/-0.004
d	1.50+/-0.1	0.059+/-0.004
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	2.00+/-0.20	0.079+/-0.008
P0	4.00+/-0.20	0.157+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	8.00+/-0.30	0.315+/-0.012
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	10,000	300,000	178	390	370	220

单击下面可查看定价，库存，交付和生命周期等信息

[>>Bencent \(槟城\)](#)