

Transient Voltage Suppressor

● Features

- IEC 61000-4-2(ESD) $\pm 15\text{KV}$ (air), $\pm 8\text{KV}$ (contact)
- IEC61000-4-5(Lightning) 4.5 A (8/20 μS)
- Low operating voltage and low clamping
- Package optimized for high-speed lines
- Moisture sensitivity level: Level 3
- Ultra-small package: DFN1006-2L

Exterior



DFN1006-2L


Application Information

- Portable Electronics
- Desktops, servers and Notebooks
- Cellular Phones
- Digital Ports

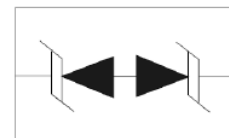
Package (top view)



Agency Approvals

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

Schematic Symbol



Part Number and Electrical Parameter

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}@I_{\text{R}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{①}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{①}}$		$\text{Co}^{\text{②}}$	$\text{Co}^{\text{②}}$
	μA	V	V	mA	V	A	V	A	pF	pF
	MAX		MIN		MAX		MAX		TYP	MAX
BV-FA05ZC	1.0	5.0	6.0	1	11.0	1	15	4.5	10	15

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

① Surge Waveform: 8/20 μS .

② Off-state capacitance is measured in $V_{\text{DC}}=0\text{V}$, $f=1\text{MHz}$

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Part Numbering System

Mark

BV FA 05 Z C
(1) (2) (3) (4) (5)

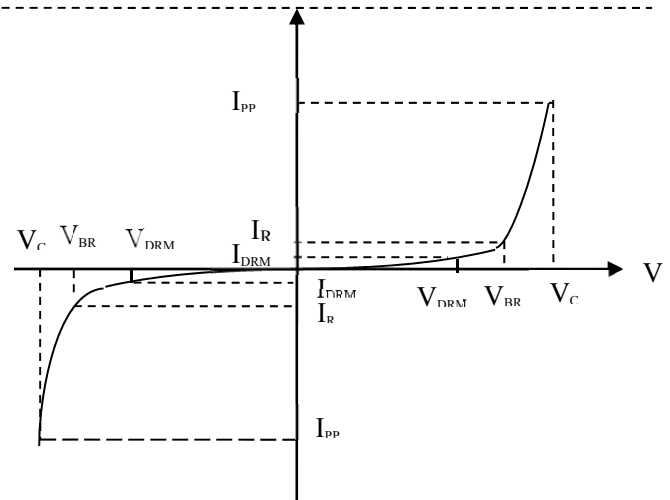


PB: Part Number

- (1) Bencent Transient Voltage Suppressor
- (2) Package: DFN1006
- (3) Stand-off Voltage: 5V
- (4) Normal Capacitance
- (5) Bidirectional

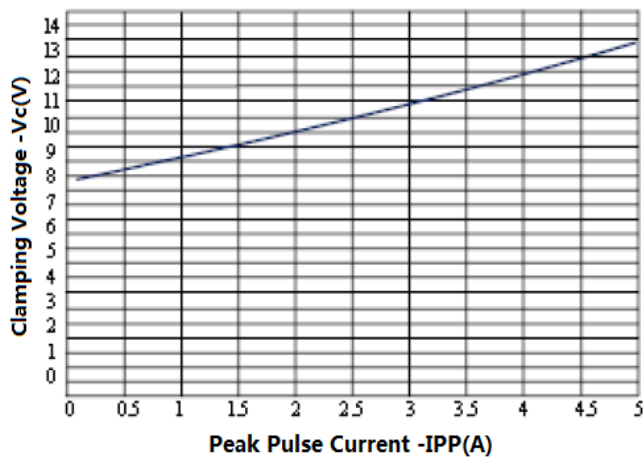
V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{PP}	Peak pulse current
V_{DRM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
I_{DRM}	Reverse Leakage Current
I_R	Test current
P_{pp}	Peak Pulse Power Dissipation

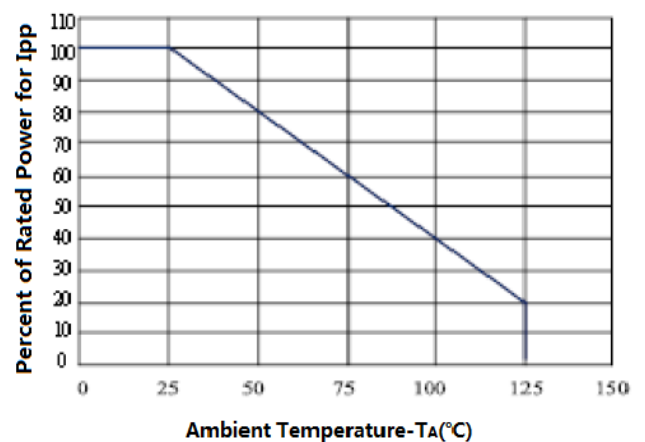


Typical Characteristics

Clamping Voltage vs. Peak pulse Current



Power Derating Curve



Transient Voltage Suppressor

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Thermal Considerations

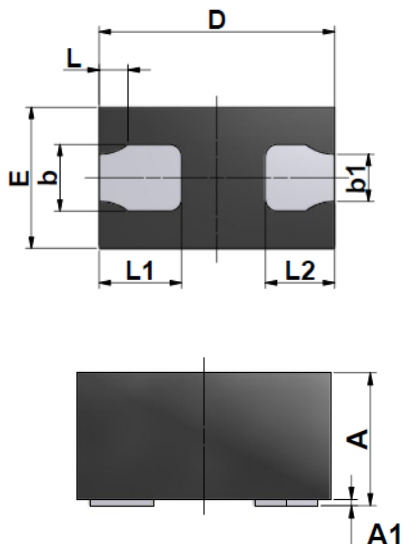
symbol	Parameter	Value	Unit
T_j	Operating Junction Temperature Range	-55 to+125	°C
T_s	Storage Temperature Range	-55 to+150	°C

Environmental Characteristics

Testing items	Technical standards
HAST	Temperature: $130\pm 2^\circ\text{C}$ Bias= $80\%V_{\text{DRM}}$ Humidity: $85\pm 5\%$ Time:96H
High Temperature Storage Test	Temperature: 150°C Time:168H
High-low Temperature Cycle test	Temperature: From -40°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

Product Dimensions

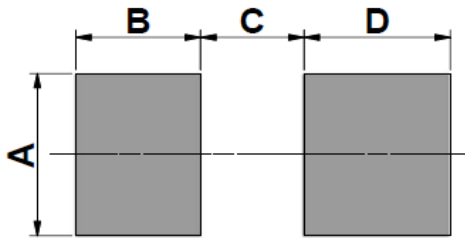


REF	mm	inch
A	0.450-0.550	0.0177-0.0217
A1	0.000-0.050	0.000-0.0020
D	0.950-1.050	0.0374-0.0413
E	0.550-0.650	0.0217-0.0256
b	0.275-0.295	0.0108-0.0116
b1	0.190-0.210	0.0075-0.0083
L	0.095-0.105	0.0037-0.0041
L1	0.330-0.370	0.0130-0.0146
L2	0.280-0.320	0.0110-0.0126

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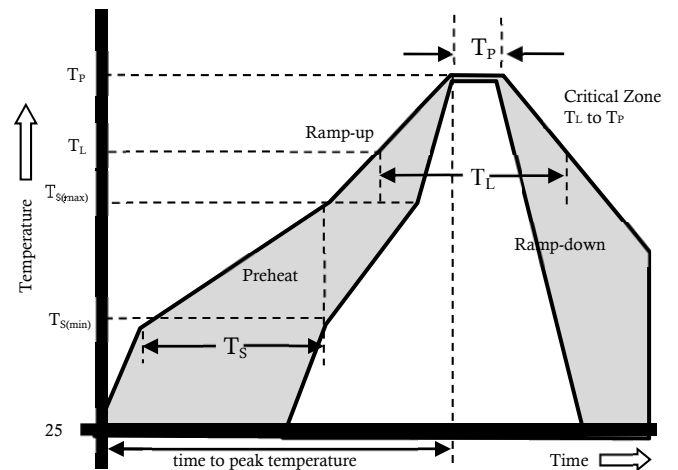
Recommended Soldering Pad



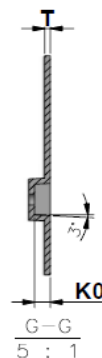
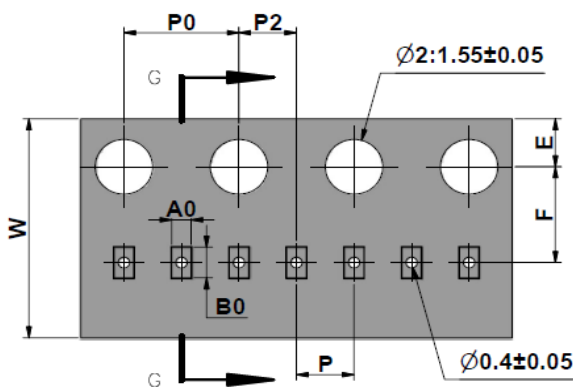
REF	mm	inch
A	0.60	0.024
B	0.55	0.022
C	0.30	0.012
D	0.55	0.022

Reflow Profile

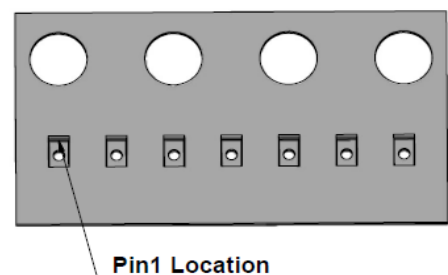
Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (Min to Max)	60 – 180 secs
Average ramp up rate (Liquid T _{amp} (T _L) to peak		3°C/s Max
T _{S(max)} to T _L - Ramp-up Rate		3°C/s Max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 –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

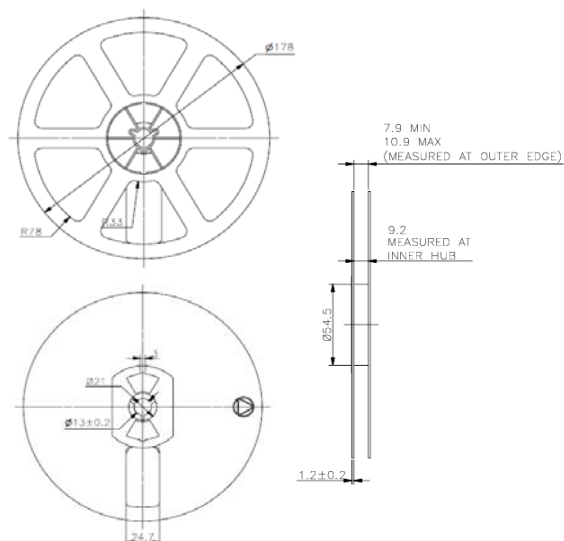


Package Reel Information



Device Orientation In Tape





REF	mm	inch
A0	0.70 \pm 0.10	0.028 \pm 0.004
B0	1.15 \pm 0.10	0.045 \pm 0.004
K0	0.55 \pm 0.05	0.022 \pm 0.002
T	0.22 \pm 0.05	0.009 \pm 0.002
P	2.00 \pm 0.10	0.079 \pm 0.004
P0	4.00 \pm 0.10	0.157 \pm 0.004
P2	2.00 \pm 0.10	0.079 \pm 0.004
E	1.75 \pm 0.10	0.069 \pm 0.004
F	3.50 \pm 0.10	0.138 \pm 0.004
W	8.00 \pm 0.20	0.315 \pm 0.008

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	10,000	300,000	178	390	370	220

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