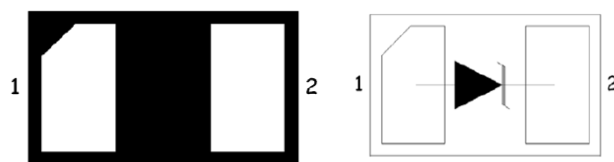


## Transient Voltage Suppressor

### Features

- IEC 61000-4-2(ESD)±30KV(air), ±30KV(contact)
- 1800 Watts peak pulse power (tp=8/20μS)
- Low clamping voltage
- Moisture sensitivity level: level 3
- Small package saves board space (1610)

### Exterior




DFN1610-2L

### Application Information

- Cellular Phones
- I<sup>2</sup>C Bus Protection

### 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 <sub>DRM</sub> @ V <sub>DRM</sub>		V <sub>BR</sub> <sup>①</sup> @ I <sub>R</sub>		V <sub>c</sub> @I <sub>pp</sub> <sup>②</sup>		V <sub>c</sub> @I <sub>pp</sub> <sup>②</sup>		Co <sup>③</sup>
	uA	V	V	mA	V	A	A	A	pF
	MAX		MIN		MAX		MAX		MAX
BV-FE05ZA	1	5	6	1	9	100	13	140	2000

Absolute maximum ratings measured at T<sub>A</sub>= 25°C RH = 45%-75% (unless otherwise noted).

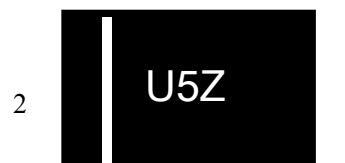
- ① V<sub>BR</sub> is measured at I<sub>R</sub>=1mA
- ② Surge Waveform: 8/20μ S.
- ③ Off-state capacitance is measured in Bias=0V, f=1MHz

### Part Numbering System

BV FE 05 Z A  
(1) (2) (3) (4) (5)

- (1) Bencent Transient Voltage Suppressor
- (2) Package: DFN1610
- (3) Stand off Voltage: 5.0V
- (4) Capacitance level: Normal Capacitance
- (5) Higher IPP (140A), Lower VC(<9V@100A)

### Mark



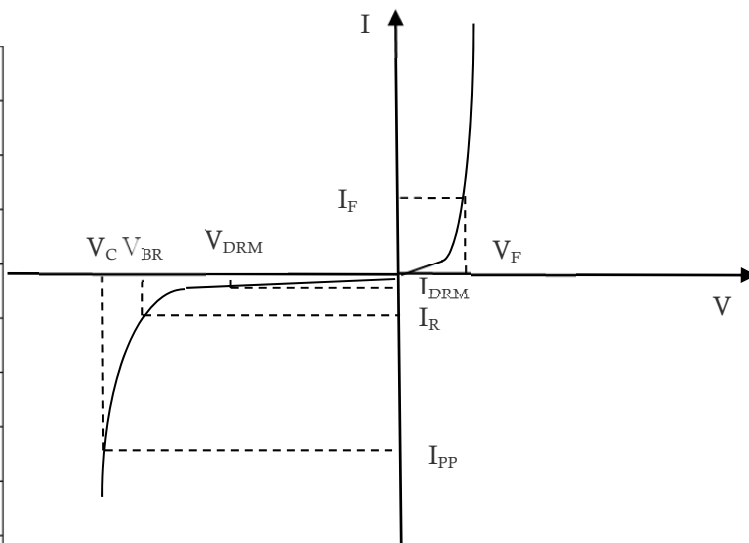
U5Z: Part Number

## Transient Voltage Suppressor

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### V-I Curve

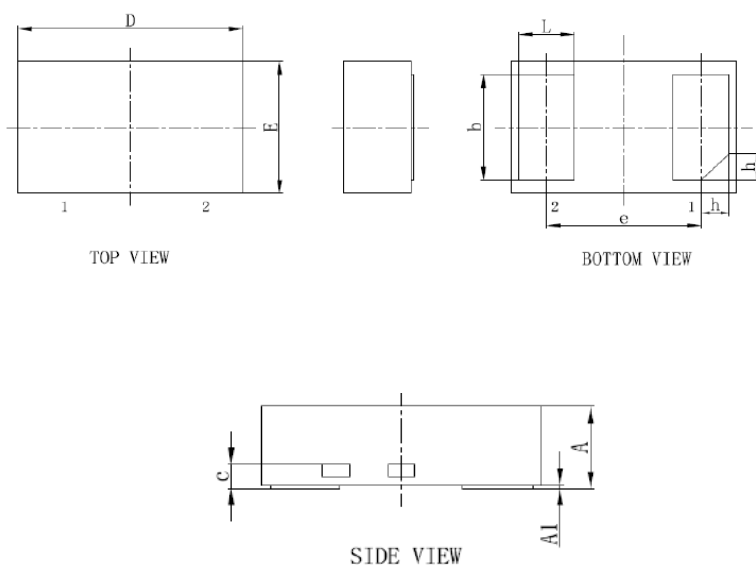
Parameters	Definition
$V_C$	Clamping Voltage
$I_{PP}$	Surge Waveform 8/20 $\mu$ s
$V_{DRM}$	Stand-off Voltage
$I_{DRM}$	Reverse Leakage Current
$V_{BR}$	Breakdown Voltage
$I_R$	Test Current
$V_F$	Forward Voltage
$I_F$	Test Current
$P_{pp}$	Peak Pulse Power Dissipation



### Thermal Considerations

symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-40 to +125	$^{\circ}$ C
$T_S$	Storage Temperature Range	-55 to +150	$^{\circ}$ C

### Product Dimensions

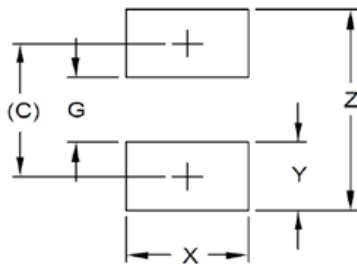


REF	mm	inch
A	0.450-0.550	0.0177-0.0217
A1	0.000-0.050	0.000-0.0020
b	0.750-0.850	0.0295-0.0335
c	0.100-0.200	0.0039-0.0079
D	1.550-1.650	0.0610-0.0650
e	1.10BSC	0.0433BSC
E	0.950-1.050	0.0374-0.0413
L	0.350-0.450	0.0138-0.0177
h	0.150-0.250	0.0059-0.0098

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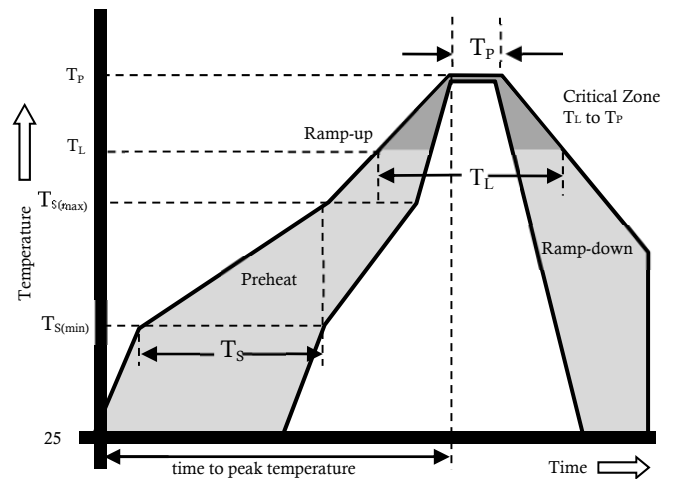
**Recommended Soldering Pad**



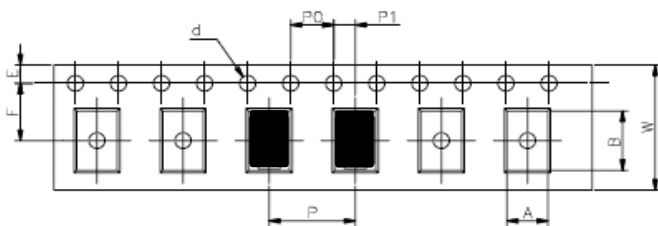
REF	mm	inch
C	1.225	0.048
G	0.600	0.024
X	1.000	0.039
Y	0.625	0.025
Z	1.850	0.073

**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(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
Ts(max) to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature ( $T_L$ ) (Liquidus)	+217°C
	- Temperature ( $T_L$ )	60 – 150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5) °C
Time within 5°C of actual Peak Temp ( $T_P$ )		25
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C



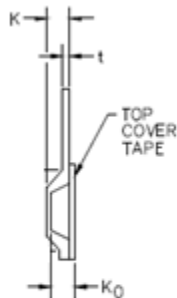
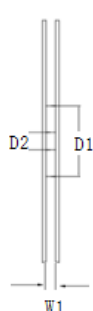
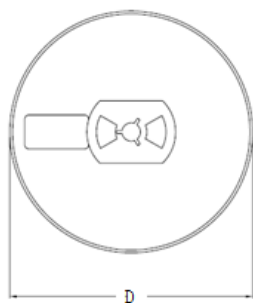
**Package Reel Information**



REF	mm	inch
A	1.25+/-0.1	0.049+/-0.004
B	1.80+/-0.1	0.071+/-0.004
d	1.5+0.1/-0	0.061+0.004/-0
W	8.0+/-0.2	0.315+/-0.008
E	1.75+/-0.1	0.069+/-0.004
F	3.5+/-0.1	0.138+/-0.004
P	4.0+/-0.1	0.158+/-0.004

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P0	4.0+/-0.1	0.158+/-0.004
P1	2.0+/-0.1	0.079+/-0.004
K	2.4 max	0.094 max
K0	0.8+/-0.2	0.031+/-0.008
t	1.6+/-0.6	0.063+/-0.024
D	178+/-2.0	7.009+/-0.078
D1	55+/-3.0	2.165+/-0.118
D2	13+/-0.5	0.512+/-0.020
W1	8.6+/-0.1	0.339+/-0.04

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3000	90,000	178	390	370	220