

Transient Voltage Suppressor

Version: A1 2023-11-30

Features

- IEC 61000-4-2(ESD) $\pm 30\text{KV}(\text{air})$, $\pm 30\text{KV}(\text{contact})$
- 1300 Watts peak pulse power (tp=8/20 μS)
- Low clamping voltage
- Moisture sensitivity level: level 3
- Small package saves board space (1610)

Exterior



DFN1610-2L

Application Information

- Power supplies
- Cellular phones
- Digital cameras
- Portable devices

Agency Approvals

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

Part Number and Electrical Parameter

Part Number	$I_{\text{DRM}}@ V_{\text{DRM}}$		$V_{\text{BR}}^{\text{①}}@ I_{\text{R}}$		$V_{\text{c}}@ I_{\text{pp}}^{\text{②}}$		$C_{\text{o}}^{\text{③}}$
	μA	V	V	mA	V	A	pF
	MAX		MIN		MAX		MAX
BV-FE07ZCA	1	7	7.5	1	13	100	1000

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

① V_{BR} is measured at $I_{\text{R}} = 1\text{mA}$

② Surge Waveform: 8/20 μS .

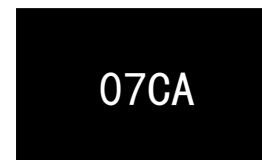
③ Off-state capacitance is measured in Bias=0V, f=1MHz

Part Numbering System

BV FE 07 Z C A
(1) (2) (3) (4) (5) (6)

- (1) Bencent Transient Voltage Suppressor
- (2) Package: DFN1610
- (3) Stand off Voltage: 7.0V
- (4) Normal Capacitance
- (5) Bidirectional
- (6) Bencent Internal Code

Mark

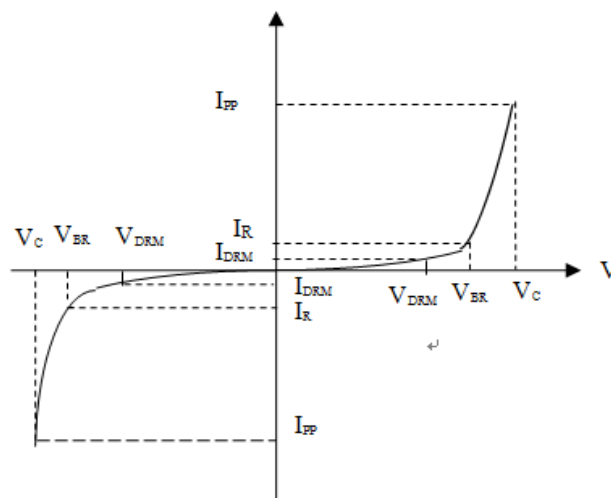


Transient Voltage Suppressor

Version: A1 2023-11-30

V-I Curve

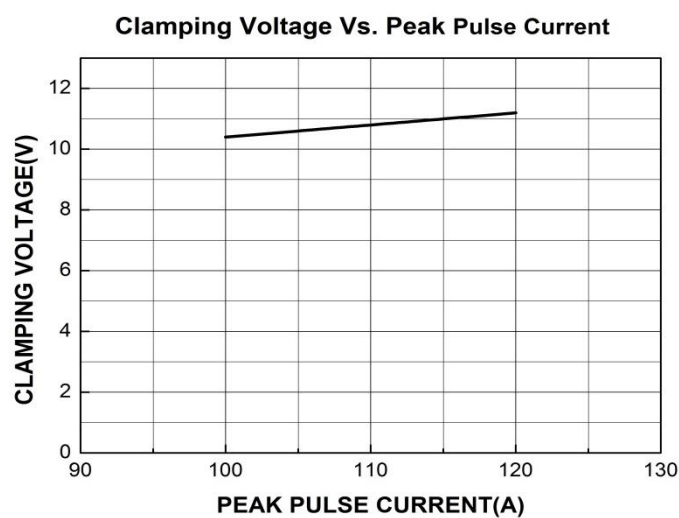
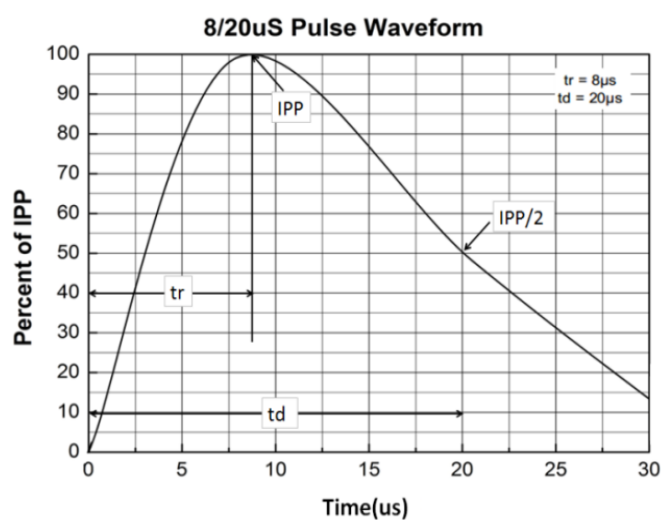
Parameters	Definition
V_C	Clamping voltage
I_{PP}	Surge waveform 8/20us
V_{DRM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
I_{DRM}	Reverse Leakage Current
I_R	Test current
P_{pp}	Peak Pulse Power Dissipation



Thermal Considerations

symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-40 to +125	°C
T_S	Storage Temperature Range	-55 to +150	°C

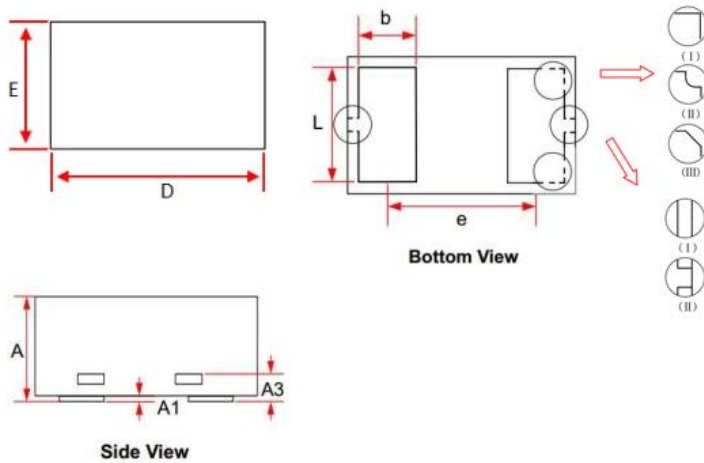
Typical Characteristics



Transient Voltage Suppressor

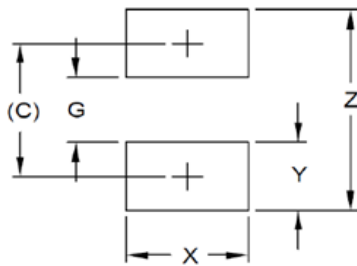
Version: A1 2023-11-30

Product Dimensions



REF	mm	inch
A	0.40~0.60	0.016~0.024
A1	0.00~0.05	0.000~0.002
b	0.35~0.45	0.014~0.018
A3	0.10~0.20	0.004~0.008
D	1.55~1.65	0.061~0.065
e	1.00~1.15 BSC	0.039~0.045 BSC
E	0.95~1.05	0.037~0.041
L	0.75~0.95	0.030~0.037

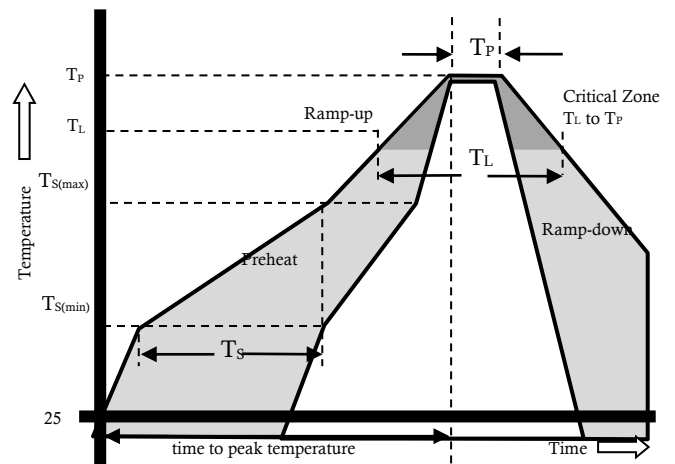
Recommended Soldering Pad



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

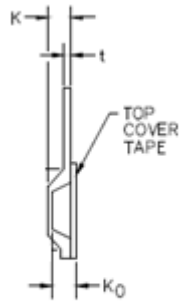
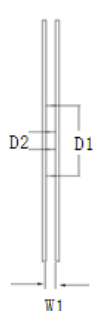
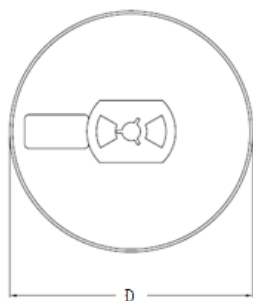
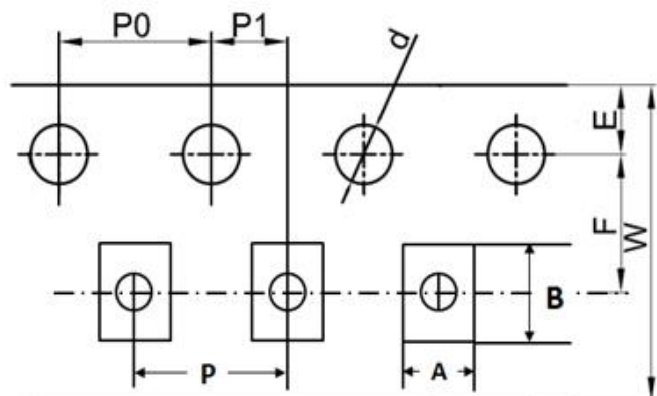
Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 secs.
Average ramp up rate(Liquidus Temp(T _L) to peak)		3°C/sec. Max.
Ts(max) to T _L - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature (T _L) (Liquidus)	+217°C
	- Temperature (T _L)	60 – 150 secs.
Peak Temp (T _P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T _P)		30
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T _P)		8 min. Max.
Do not exceed		+260°C



Transient Voltage Suppressor

Version: A1 2023-11-30

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
P0	4.0+/-0.1	0.158+/-0.004
P1	2.0+/-0.1	0.079+/-0.004
K	1.50 max	0.059 max
K0	0.90+/-0.25	0.035+/-0.01
t	0.35max	0.014max
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	9.50+/-0.10	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