

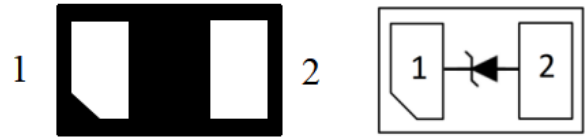
Transient Voltage Suppressor

Version: A2 2024-11-7

Features

- IEC 61000-4-2(ESD) $\pm 30\text{KV}$ (air), $\pm 30\text{KV}$ (contact)
- IEC61000-4-4(EFT) 40A (5/50ns)
- 2640 Watts peak pulse power ($t_p=8/20\mu\text{s}$)
- Low clamping voltage
- Moisture sensitivity level: level 3
- Small package saves board space (1610)

Exterior



DFN1610-2L

Application Information

- Cellular Phones
- I²C Bus Protection

Agency Approvals

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

Part Number and Electrical Parameter

Part Number	I _{DRM} @ V _{DRM}		V _{BR} ^① @ I _R		V _C @I _{pp} ^②		R _{DYN} @ TLP ^③	V _C @I _{pp} TLP ^③		Co ^④
	uA	V	V	mA	V	A	Ω	V	A	pF
	MAX		MIN		MAX		TYP	TYP		TYP
BV-FE18ZS	1	18	19	1	33	80	0.17	23	16	300

Absolute maximum ratings measured at T_A= 25°C RH = 45%-75% (unless otherwise noted).

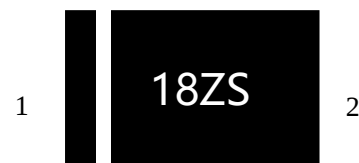
- ① V_{BR} is measured at I_R=1mA, pin1 to pin2;
- ② Surge Waveform: 8/20μs, pin1 to pin2;
- ③ TLP parameter: Z₀ = 50Ω, t_p = 100ns, t_r = 1ns, R_{DYN} is calculated from 4A to16A
- ④ Off-state capacitance is measured in V_{DC}=0V, V_{RMS}=0.3V, f=1MHz, pin1 to pin2

Part Numbering System

BV FE 18 Z S
(1) (2) (3) (4) (5)

- (1) Bencent Transient Voltage Suppressor
- (2) Package: DFN1610
- (3) Stand off Voltage:18V
- (4) Capacitance level: Normal Capacitance
- (5) Bencent internal code

Mark



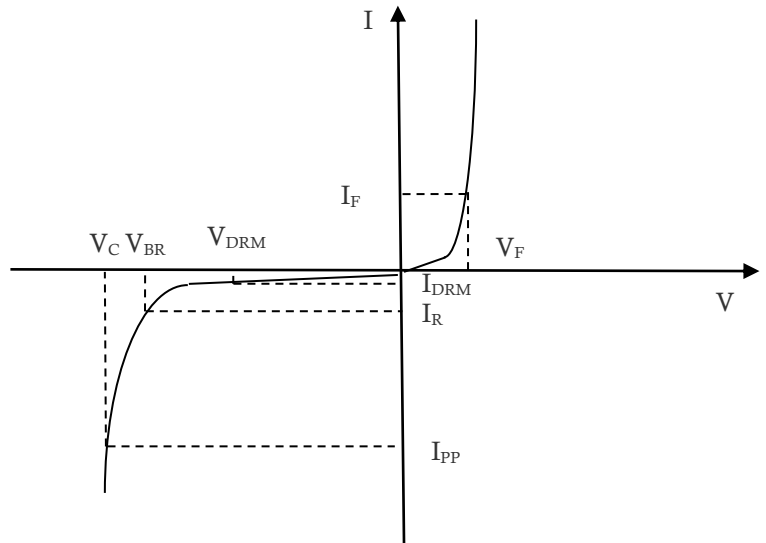
18ZS: Part Number

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V-I Curve

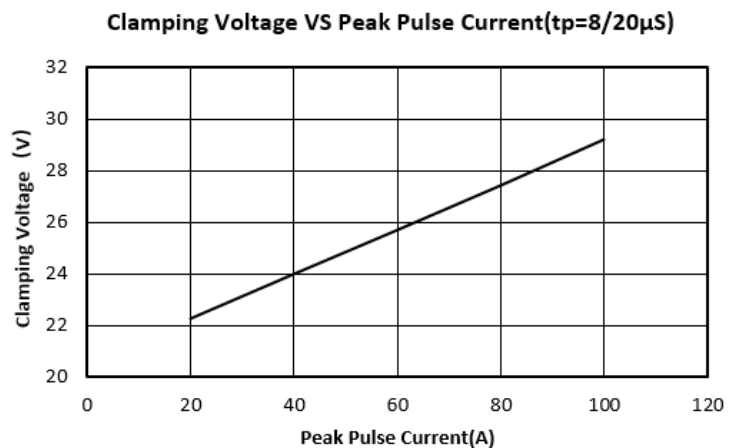
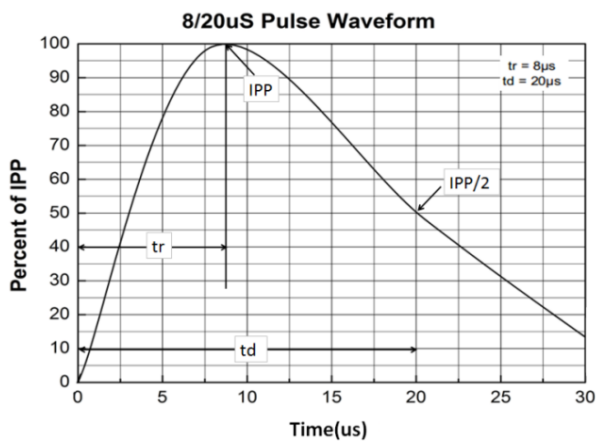
Parameters	Definition
V_C	Clamping Voltage
I_{PP}	Surge Waveform 8/20 μ s
V_{DRM}	Stand-off Voltage
I_{DRM}	Reverse Leakage Current
V_{BR}	Breakdown Voltage
I_R	Test Current
V_F	Forward Voltage
I_F	Test Current
P_{pp}	Peak Pulse Power Dissipation



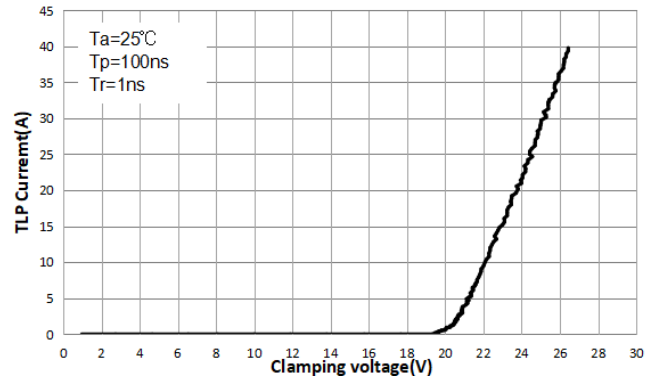
Thermal Considerations

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

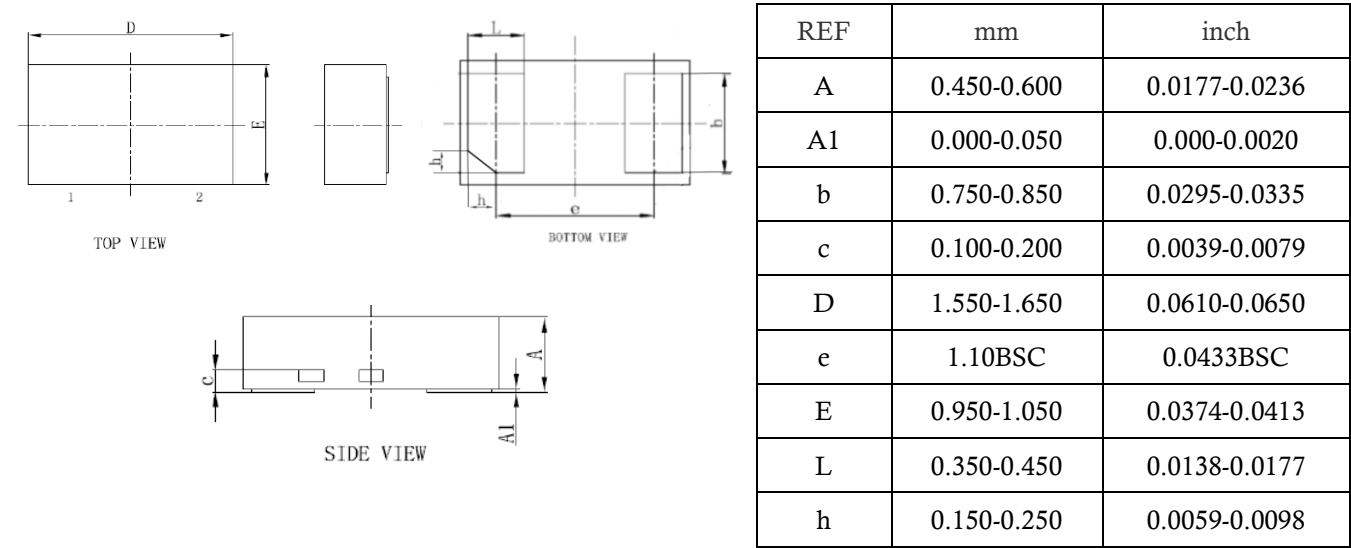
Typical Characteristics



TLP IV curve Pin1 to Pin2



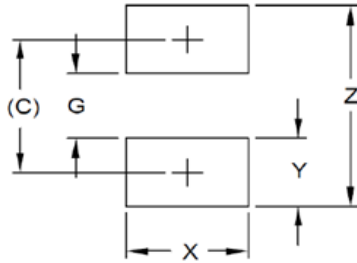
Product Dimensions



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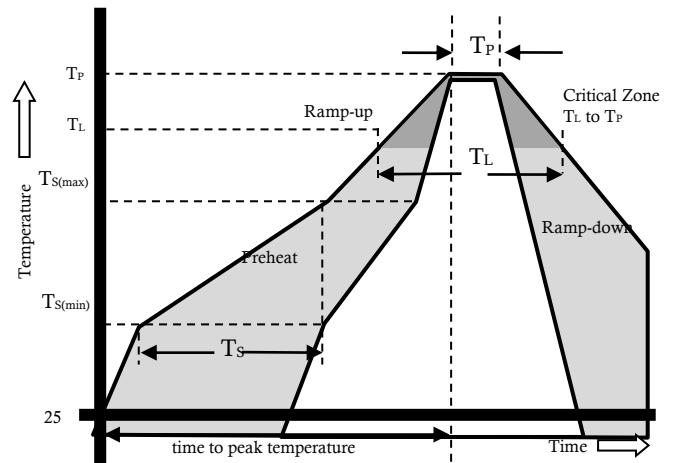
Recommended Soldering Pad



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

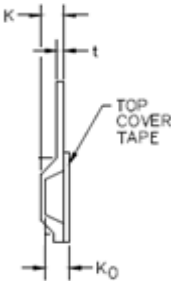
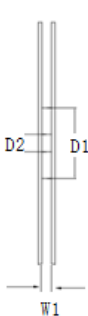
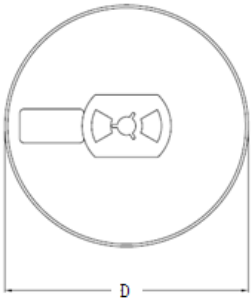
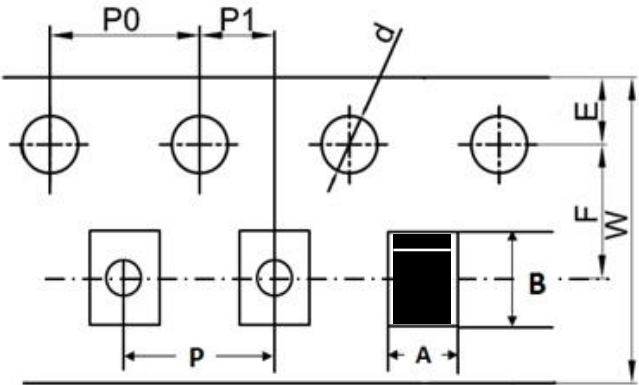
Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature (T_L) (Liquidus)	+217°C
	- Temperature (T_L)	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



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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	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