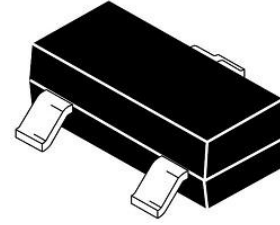


Transient Voltage Suppressor

Features

- IEC61000-4-2(ESD)±30KV(air),±30KV(contact)
- IEC61000-4-5(Lightning) 4A (8/20μS)
- IEC61000-4-4(EFT) 40A (5/50ns)
- 200 Watts peak pulse power per Line (tp=8/20μS)
- Low clamping voltage
- Weight 8 mg (Approximate)
- AEC-Q101 qualified

Exterior

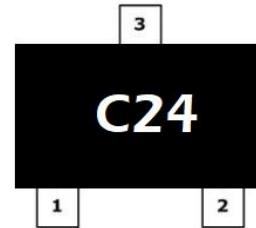


SOT-323

Application Information

- High-Speed Data Transmission Interfaces
- Cellular Phones
- Portable Electronics
- Wireless Bus Protection

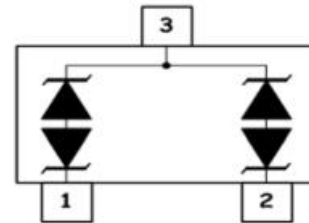
Package (top view)



Agency Approvals

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

Schematic



Part Number and Electrical Parameter

Part Number	$I_{DRM}@V_{DRM}$		$V_{BR}^{①}@I_R$		$V_C@I_{pp}^{②}$		$V_C@I_{pp}^{②}$		$R_{DYN}@TLP^{③}$	$V_C@I_{pp} TLP^{③}$		$CO^{④}$	
	μA	V	V	mA	V	A	V	A	Ω	V	A	pF	
	MAX		MIN		MAX		MAX		TYP	TYP		TYP	MAX
BV-E324Z2CAQ	1	24	26.7	1	43	1	50	4	0.46	42	16	12	18

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

① V_{BR} is measured at $I_R = 1mA$, Pin 1, 2 to 3

② Surge Waveform: 8/20μS, Pin 1,2 to 3

③ TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 1ns$, R_{DYN} is calculated from 4A to 16A.

④ Off-state capacitance is measured in $V_{DC} = 0V$, $V_{RMS} = 0.3V$, $f = 1MHz$

Transient Voltage Suppressor

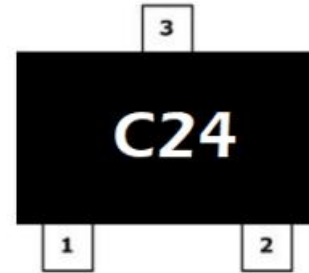
Version: A0 2023-12-11

Part Numbering System

Mark

BV E3 24 Z 2 C A Q
(1) (2) (3) (4) (5) (6) (7) (8)

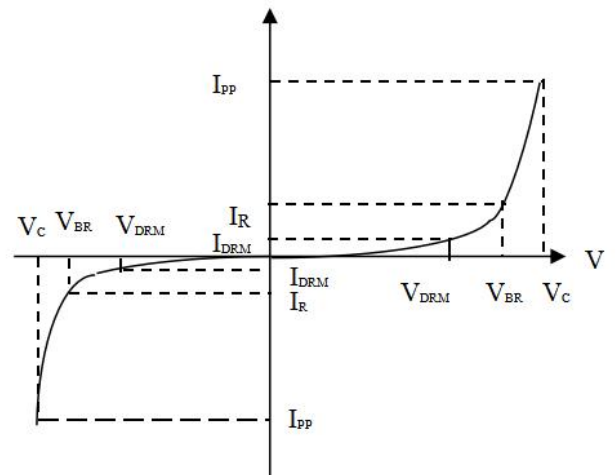
- (1) Bencent Transient Voltage Suppressor
- (2) Package: SOT-323
- (3) Stand-off Voltage: 24V
- (4) Normal Capacitance
- (5) 2 Lines protection
- (6) Bidirectional
- (7) Bencent internal code
- (8) AEC-Q101 qualified



C24: Part Number

V-I Curve

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

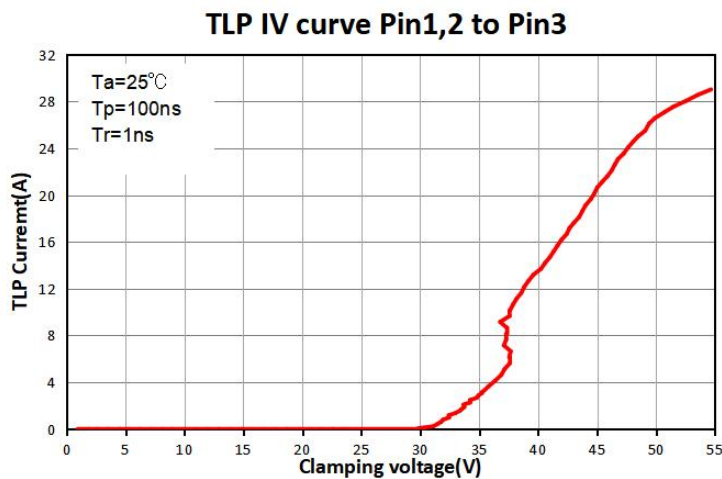
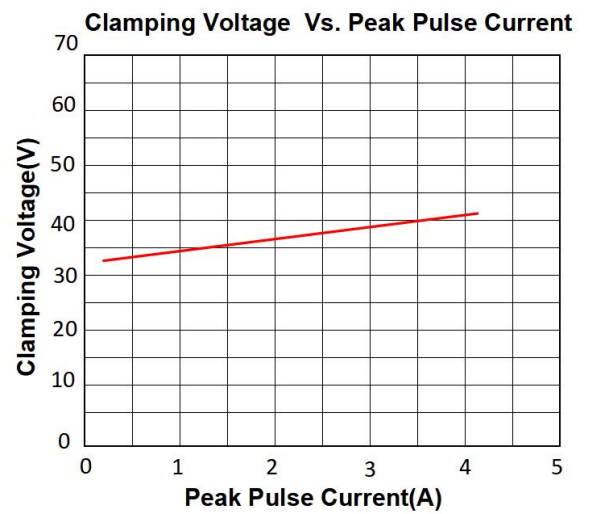
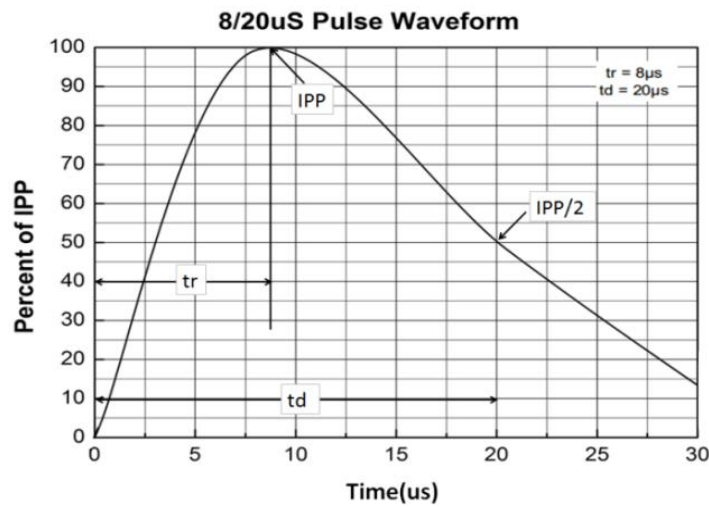


Thermal Considerations

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

Transient Voltage Suppressor

Typical Characteristics

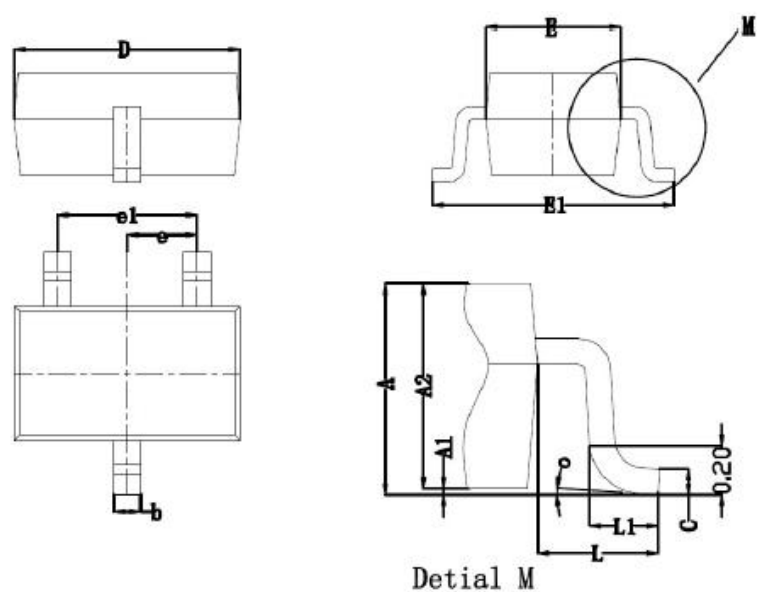


Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $150 \pm 3^\circ C$ Bias= $80\% V_{DRM}$ Time:1000H
High Temperature Life Test	Temperature: $150^\circ C$ Time:1000H
High-low Temperature Cycle test	Temperature: From $-55^\circ C$ to $150^\circ C$ Dwell time : 30min,1000cycles
High Temperature &High Humidity Test	Temperature: $85^\circ C$ Humidity:85% Time:1000H
Pressure cooker Test	Temperature: $121^\circ C$, 2atm. Humidity:100% Time:96H
Resistance of soldering heat	Reflow: peak Temperature: $260 \pm 5^\circ C$ Time: 10s

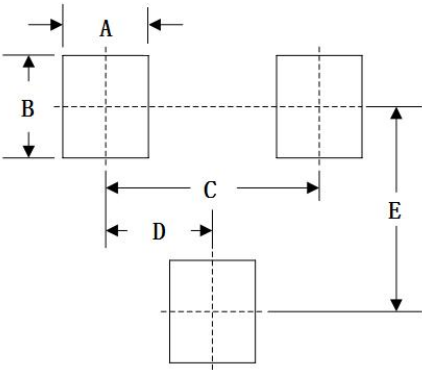
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	0.8~1.10	0.031-0.043
A1	0.1 max	0.004max
A2	0.90~1.00	0.035-0.040
b	0.2~0.4	0.008-0.016
c	0.08~0.15	0.003-0.006
D	1.80~2.20	0.071-0.087
E	1.15-1.35	0.0453-0.051
e	0.650TYP	0.025
e 1	1.20-1.40	0.047-0.055
L	0.525REF	0.020REF
L1	0.26-0.46	0.010-0.018
o	0° - 8°	

Recommended Soldering Pad

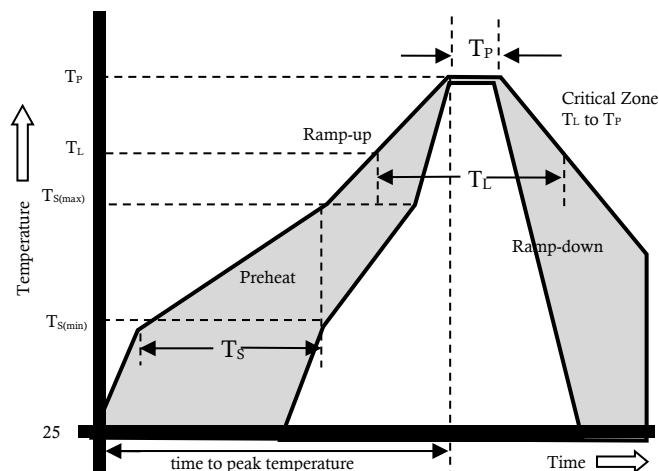


REF	mm	inch
A	0.7	0.026
B	0.9	0.035
C	1.3	0.051
D	0.65	0.025
E	1.9	0.075

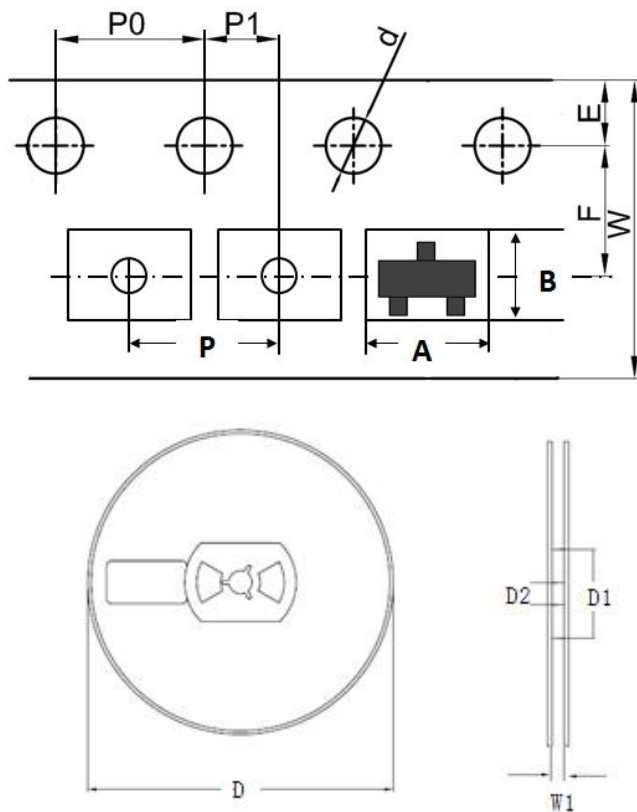
Transient Voltage Suppressor

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)		25secs
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



REF	mm	inch
A	3.10+/-0.2	0.122+/-0.008
B	2.9+/-0.2	0.114+/-0.008
d	1.5+0.1/-0	0.059+0.004/-0
D	178+/-2.0	7.008+/-0.079
D1	55+/-3	2.165+/-0.118
D2	13+/-0.5	0.512+/-0.020
E	1.75+/-0.1	0.069+/-0.004
F	3.5+/-0.2	0.138+/-0.008
P	4.0+/-0.2	0.158+/-0.008
P0	4.0+/-0.2	0.158+/-0.008
P1	2.0+/-0.2	0.079+/-0.008
W	8.0+/-0.2	0.315+/-0.008
W1	9.5+/-1	0.374+/-0.039

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3,000	90,000	178	380	220	205