BV-F603UCA

Order Code: BV-F603UCA

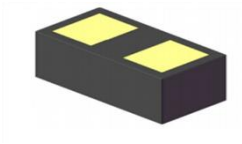
Version: A1 2018-04-13

Transient Voltage Suppressor

Features

- IEC 61000-4-2 (ESD) ±20KV (air), ±20KV (contact)
- IEC61000-4-5 (Lightning) 3.5A (8/20uS)
- 42Watts peak pulse power (tp=8/20μ S)
- Low clamping voltage
- Ultra low capacitance: 0.35pF maximum
- Moisture sensitivity level: Level 1
- Small package: DFN0603

Exterior



DFN0603

Application Information

- RF Signal ESD Protection
- RF Switching, PA, and Antenna ESD Protection
- Near Field Communications
- USB 2.0, USB 3.0, USB 3.1

Package (top view)

Agency Approvals

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

Schematic

Part Number and Electrical Parameter

Part Number	I_{DRM}@V_{DRM}		V_{BR}①@I_R			Vc@Ipp②		Co③	
	μA	V	V	V	mA	V	A	pF	
	MAX		MIN	MAX		MAX		TYP	MAX
BV-F603UCA	0.05	3.3	6	12	1	12	3.5	0.25	0.35

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

① V_{BR} is measured at I_R=1mA

② Surge Waveform: 8/20μ S

③ Off-state capacitance is measured in V_{DC}=0V, V_{RMS}=0.3V, f=1MHZ

Transient Voltage Suppressor

Part Numbering System

BV	F6	03	U	C	A
(1)	(2)	(3)	(4)	(5)	(6)

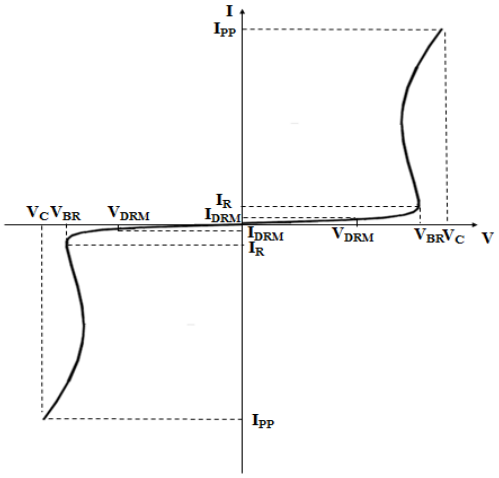
(1) Bencent Transient Voltage Suppressor
(2) Package:DFN0603
(3) Off-state Voltage: 3.3V
(4) Low Capacitance
(5) Bi-directional
(6) Bencent intenal code

Mark

JD: Part Number

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{pp}	Surge waveform 8/20μ 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	-40 to +125	℃
T_S	Storage Temperature Range	-55 to +150	℃

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: 125±3℃ Bias=80%V_{DRM} Time: 168H
High Temperature Life Test	Temperature: 150℃ Time: 168H
High-low Temperature Cycle test	Temperature: From -40℃ to125℃ Dwell time: 30min, 10~100cycles
High Temperature &High Humidity Test	Temperature: 85℃ Humidity: 85% Time: 168H
Pressure cooker Test	Temperature: 121℃, 2atm. Humidity: 100% Time: 24H
Resistance of soldering heat	Temperature: 260±5℃ Time of dip soldering: 10s, 3times

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

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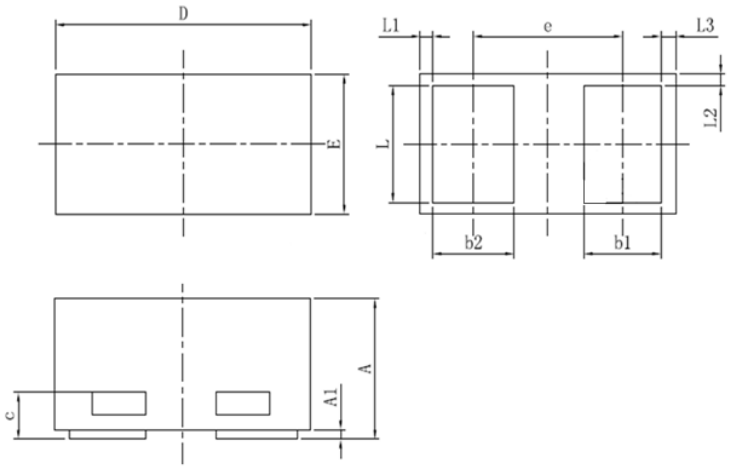
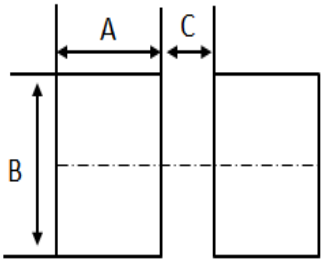
Product Dimensions



REF	mm	inch
A	0.25~0.35	0.010~0.014
A1	0~0.05	0.000~0.002
b1	0.13~0.23	0.005~0.009
b2	0.13~0.23	0.005~0.009
c	0.05~0.15	0.002~0.006
D	0.55~0.65	0.022~0.026
E	0.25~0.35	0.010~0.014
L	0.20~0.30	0.008~0.012
L1	0.035BSC	0.0014BSC
L2	0.030BSC	0.0012BSC
L3	0.035BSC	0.0014BSC
e	0.35BSC	0.014BSC

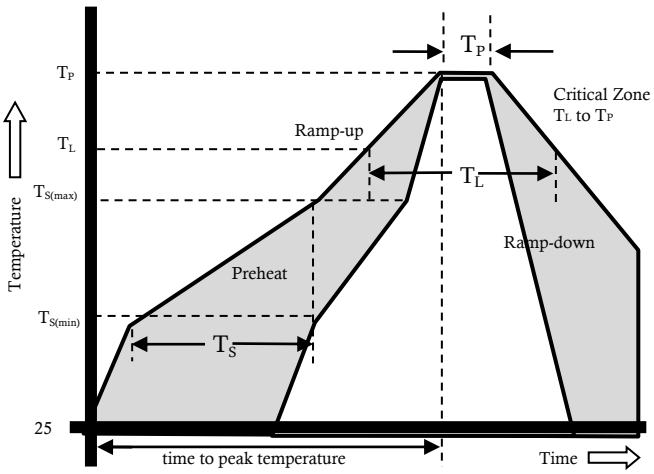
Recommended Soldering Pad



REF	mm	inch
A	0.25	0.010
B	0.5	0.020
C	0.15	0.006

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) Tamp (T_L) to peal		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



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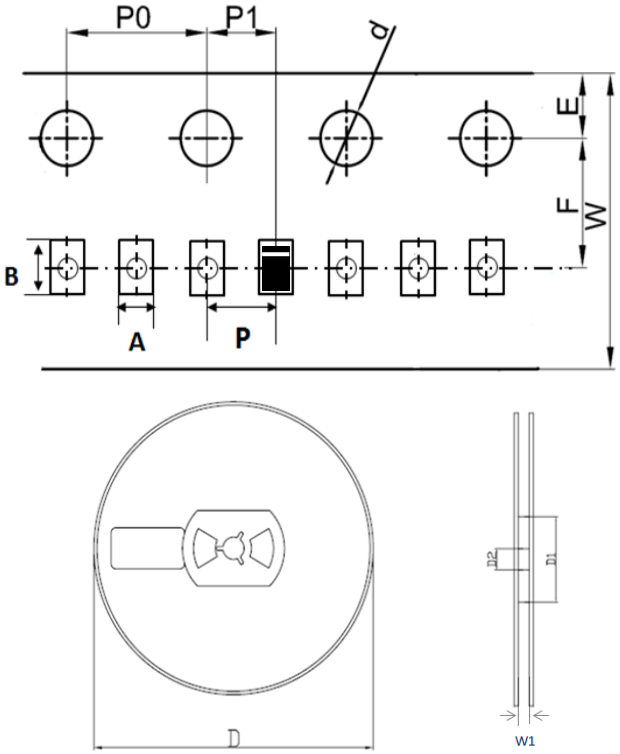
Package Reel Information



REF	mm	inch
A	0.40+/-0.05	0.016+/-0.002
B	0.70+/-0.05	0.028+/-0.002
d	1.50+0.1/-0	0.059+0.004/-0
D	178.00+/-2.00	7.008+/-0.079
D1	55.00+/-3.00	2.165+/-0.118
D2	13.00+/-0.50	0.512+/-0.020
E	1.75+/-0.10	0.069+/-0.004
F	3.50+/-0.20	0.138+/-0.008
P	2.00+/-0.20	0.079+/-0.008
P0	4.00+/-0.20	0.157+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	8.00+/-0.20	0.315+/-0.008
W1	9.50+/-1.00	0.374+/-0.039

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	15,000	450,000	178	390	370	220