

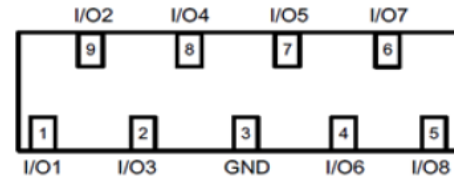
Transient Voltage Suppressor

Version: A0 2020-11-23

Features

- IEC61000-4-2(ESD)±22KV(air),±16KV(Contact)
- IEC61000-4-4(EFT) 40A (5/50nS)
- IEC61000-4-5(Lightning) 5.5A (8/20μS)
- Working Voltage:3.3V
- 8 Lines Protection
- Low leakage current
- Moisture sensitivity level: Level 3

Exterior



DFN3810

Application Information

- High Definition Multi-Media Interface (HDMI1.3/1.4)
- Digital Visual Interface (DVI)
- Display Port Interface
- Serial ATA
- PCI Express
- USB 1.1/2.0/3.0

Package (top view)



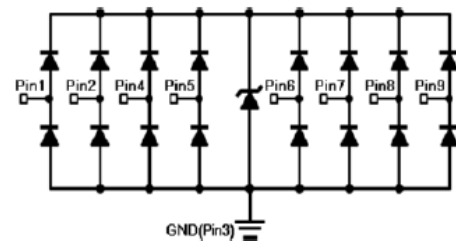
TA: Product Code

XXXX: Date Code

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			R _{DYN} @ TLP ^③	V _C @I _{pp} TLP ^③		Co ^④	Co ^⑤
	μA	V	V	mA	V	V	A	Ω	V	A	pF	pF
	MAX		MIN		TYP	MAX		TYP	TYP		MAX	MAX
BV-FP03U8CA	1.0	3.3	4.0	1.0	7.0	8.0	5	0.26	9	16	0.35	0.75

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

- ① VBR is measured at IR=1mA, pin1, 2, 4, 5,6,7,8,9 to pin 3,
- ② Surge Waveform: 8/20μS, pin1, 2, 4, 5,6,7,8,9 to pin 3,
- ③ TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 1ns, RDYN is calculated from 4A to16A
- ④ Off-state capacitance is measured in VDC=0V,VRMS=0.3V, f=1MHz, IO to IO
- ⑤ Off-state capacitance is measured in VDC=0V,VRMS=0.3V, f=1MHz, IO to GND.

Transient Voltage Suppressor

Part Numbering System

BV FP 03 U 8 C A
(1) (2) (3) (4) (5) (6) (7)

(1) Bencent Transient Voltage Suppressor

(2) Package: DFN3810

(3) Working Voltage:3.3V

(4) Low Capacitance

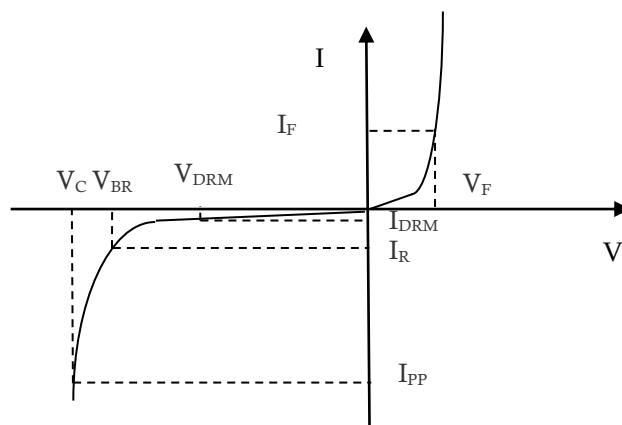
(5) 8 Lines Protection

(6) Bi-directional,IO to IO

(7) Bencent internal code

V-I Curve

Parameters	Definition
VC	Clamping voltage
Ipp	Peak pulse current
VDRM	Stand-off Voltage
VBR	Breakdown Voltage
IDRM	Reverse Leakage Current
IR	Test current
VF	Forward on-state voltage
IF	Forward current
Ppp	Peak Pulse Power Dissipation

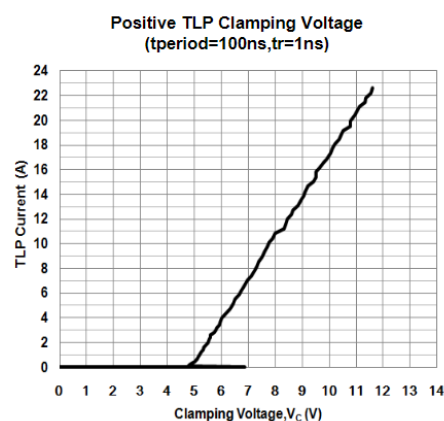
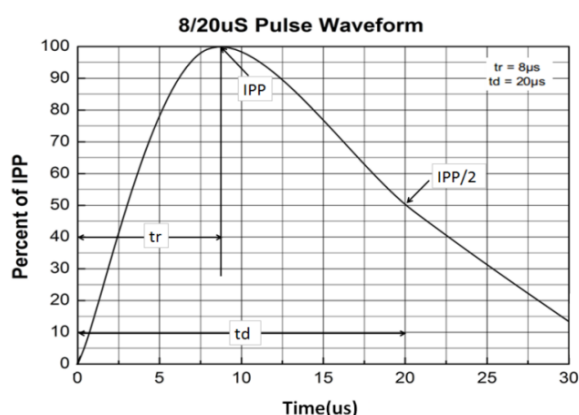


IO to GND

Thermal Consideration

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

Typical Characteristics

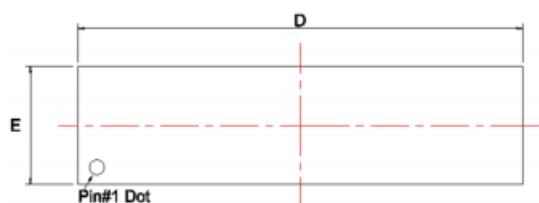


Environmental Characteristics

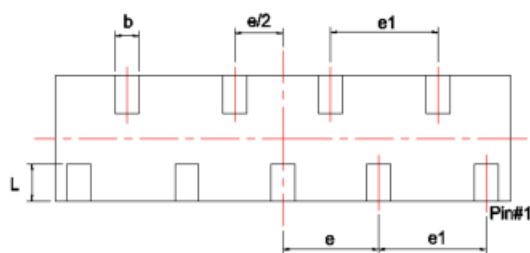
Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $125\pm3^{\circ}\text{C}$ Bias= $80\%V_{\text{DRM}}$ Time: 168H
High Temperature Life Test	Temperature: 150°C Time: 168H
High-low Temperature Cycle test	Temperature: From -40°C to 125°C Dwell time: 30min, 10cycles
High Temperature & High Humidity Test	Temperature: 85°C Humidity: 85% Time: 168H
Pressure cooker Test	Temperature: 121°C , 2atm. Humidity: 100% Time: 24H
Resistance of soldering heat	Temperature: $260\pm5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

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

Product Dimensions



Top view



Bottom view

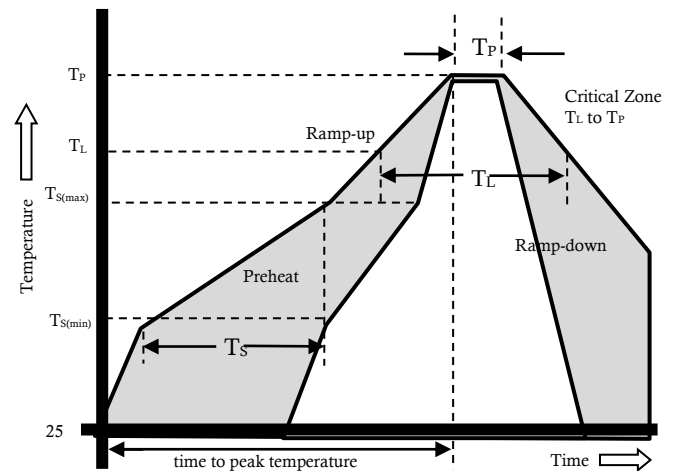


Side view

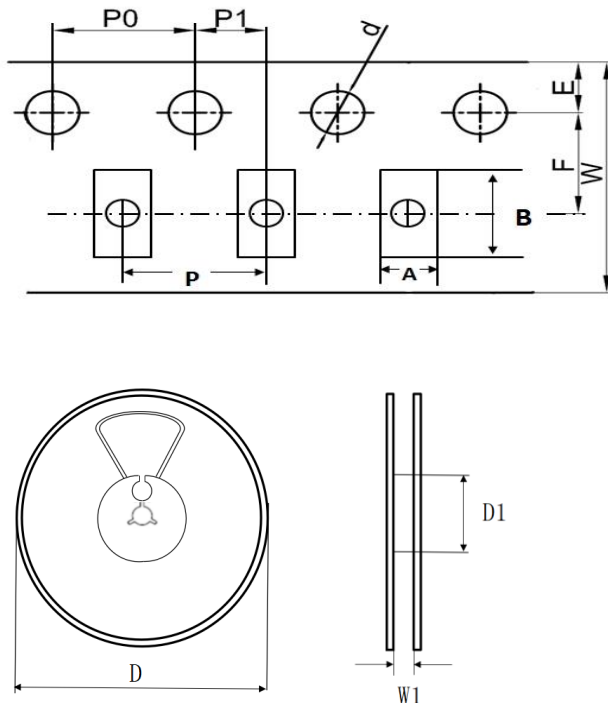
REF	mm	inch
A	0.50~0.60	0.020-0.024
A1	0.00~0.05	0.000-0.002
A3	0.10~0.20	0.004-0.008
b	0.15~0.25	0.006-0.010
D	3.70~3.90	0.146-0.154
E	0.90~1.10	0.035-0.043
e	0.80BSC	0.031 BSC
e1	0.90BSC	0.035 BSC
L	0.20-0.40	0.008-0.016

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
Ts(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	1.20+/-0.05	0.047+/-0.002
B	4.00+/-0.05	0.157+/-0.002
d	1.50+0.1/-0	0.059+0.004/-0
D	180.00+/-2.00	7.087+/-0.039
D1	60.00+/-3.00	2.362+/-0.118
E	1.75+/-0.10	0.069+/-0.004
F	5.50+/-0.05	0.217+/-0.002
P	4.00+/-0.20	0.157+/-0.008
P0	4.00+/-0.20	0.157+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	12.00+/-0.30	0.472+/-0.012
W1	12.8+/-1.00	0.504+/-0.039

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3,000	90,000	178	390	370	220