

VCTB5V1516X

Transient Voltage Suppressor

Features

- IEC61000-4-2(ESD) $\pm 30\text{KV}(\text{air}) \pm 30\text{KV}(\text{contact})$
- IEC61000-4-5(Lightning) 5A (8/20 μS)
- IEC61000-4-4(EFT) 40A (5/50nS)
- 60Watts peak pulse power ($t_p=8/20 \mu \text{S}$)
- Low clamping voltage
- Weight approx. 1.0 mg
- Moisture sensitivity level: Level 1
- Small package: DFN1006-2L

Exterior



DFN1006-2L

Schematic



Application information

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- PDA

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 _{DRM} @V _{DRM}		V _{BR} ^① @I _R		V _c @I _{pp} ^②		V _c @I _{pp} ^②		Co ^③		
	μA	V	V	mA	V	A	V	A	PF		
VCTB5V1516X	MAX		MIN		MAX		MAX		MIN	TYP	MAX
	0.5	5	5.3	1	8.5	1	12.0	7		15	

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

- ① Surge Waveform: 8/20 μS .
- ② Off-state capacitance is measured in V_{RMS}=0V, f=1MHz
- ③ Contact discharge mode, according to IEC61000-4-2

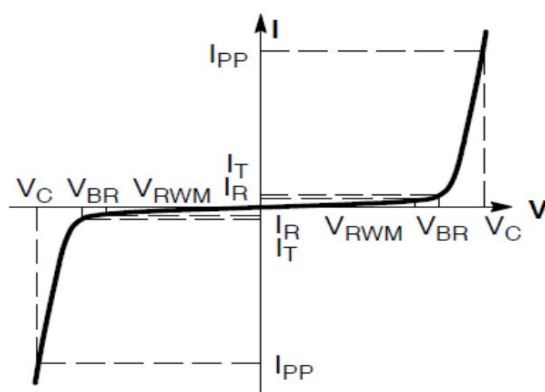
Mark



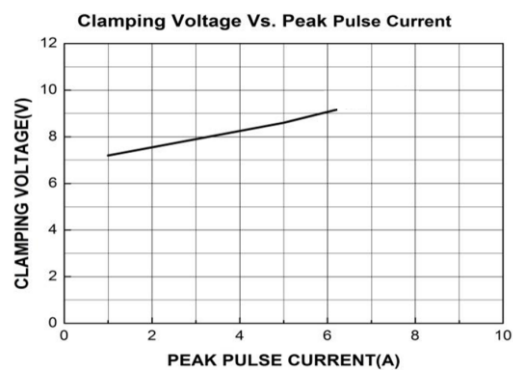
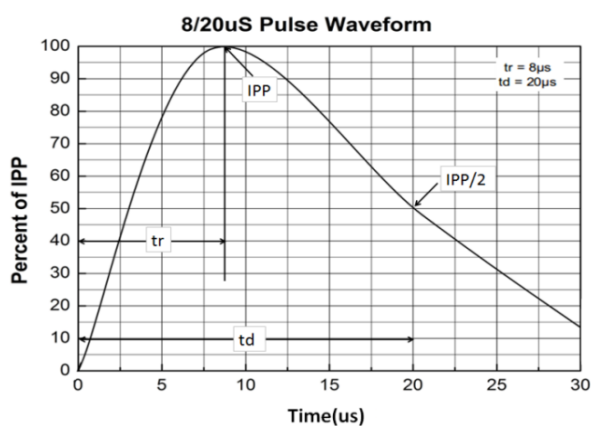
.H or H : Part Number

V-I Curve

Symbol	Symbol
IPP	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @ Ipp
VRWM	Working Peak Reverse Voltage
IR	Maximum Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Parameter
Ppk	Test Current
C	Peak Power Dissipation



Typical Characteristics



Thermal Considerations

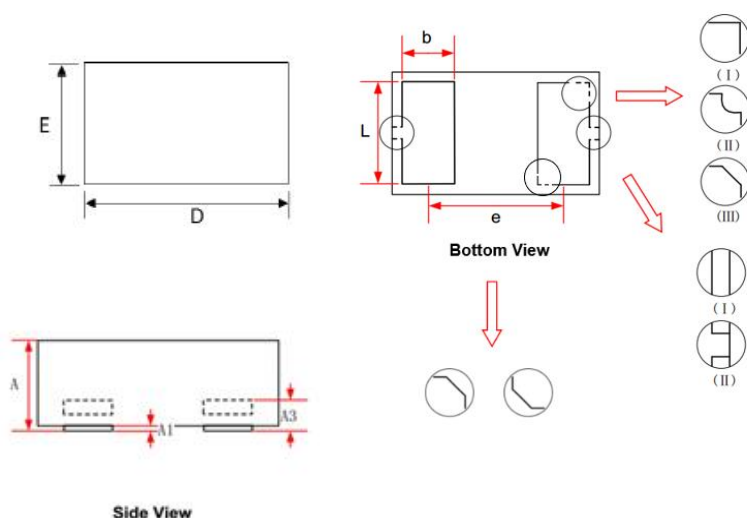
symbol	Parameter	Value	Unit
TJ	Operating Junction Temperature Range	-55 ~ +150	°C
TS	Storage Temperature Range	-55 ~ +150	°C

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $125 \pm 3^{\circ}\text{C}$ Bias=80%VDRM Time:168H
High Temperature Life Test	Temperature: 150°C Time:168H
High-low Temperature Cycle test	Temperature: From -55°C to 125°C Dwell time : 30min,10~100cycles
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: $260 \pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

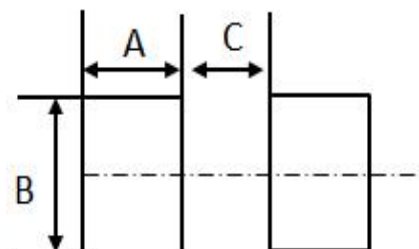
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF _φ	mm _φ	inch _φ
A _φ	0.35~0.55 _φ	0.014~0.022 _φ
A1 _φ	0.00~0.05 _φ	0.000~0.002 _φ
A3 _φ	0.125REF _φ	0.005REF _φ
D _φ	0.95~1.10 _φ	0.037~0.043 _φ
E _φ	0.55~0.70 _φ	0.022~0.028 _φ
L _φ	0.45~0.55 _φ	0.018~0.022 _φ
e _φ	0.65BSC _φ	0.026BSC _φ
b _φ	0.15~0.35 _φ	0.006~0.014 _φ

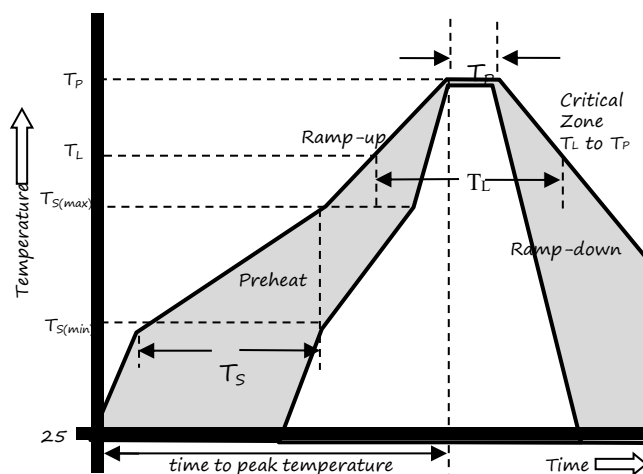
Recommended Soldering Pad



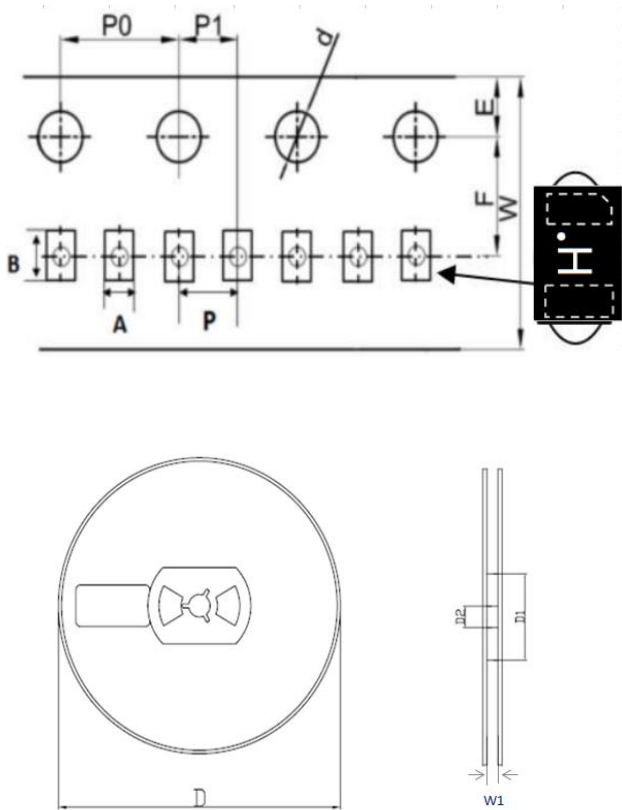
REF	mm	inch
A	0.35	0.014
B	0.60	0.024
C	0.35	0.014

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} (TL) to peak		3° C/s max
TS(max) to TL - Ramp-up Rate		3° C/s max
Reflow	- Temperature (TL) (Liquid)	217° C
	- Temperature (TL)	60 - 150 secs
Peak Temperature (TP)		260+0/-5 ° C
Time within 5 ° C of actual peak Temperature (TP)		30secs
Ramp-down Rate		6° C/s max
Time 25° C to peak Temperature (TP)		8 mins max.
Do not exceed		260° C



Package Reel Information



REF	mm	inch
A	0.70+/-0.05	0.028+/-0.002
B	1.15+/-0.05	0.045+/-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	10,000	600,000	178	390	370	220

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