

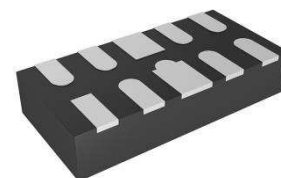
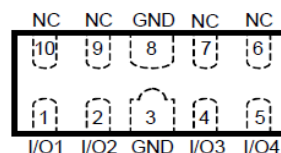
Transient Voltage Suppressor

Version: A1 2016-03-14

Features

- IEC61000-4-2(ESD) $\pm 15\text{KV}$ (air), $\pm 8\text{KV}$ (contact)
- IEC61000-4-4(EFT) 40A(5/50ns)
- IEC61000-4-5(Lightning) 4A (8/20us)
- 100Watts peak pulse power per line (tp=8/20us)
- Low capacitance:0.6pF typical (I/O to GND)
- Low operating voltage: 5V
- Low clamping voltage
- Moisture sensitivity level: level 1
- Small package:DFN2510-10L

Exterior



DFN2510-10L

Application information

- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Unified Display Interface (UDI)
- Display Port
- MDDI Ports
- PCI Express
- Serial ATA

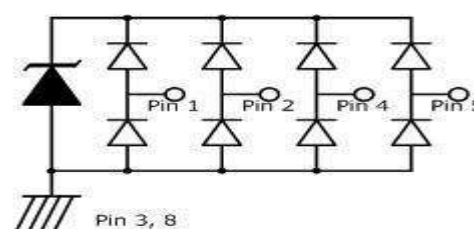
Package (Top View)



Agency Approvals

ICoN	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC 61249-2-21:2003
	Mean lead free

Schematic Symbol



Part Number and Electrical Parameter

Part Number	$I_{DRM}@V_{DRM}$		$V_{BR}@I_{BR}$		$V_C@I_{PP}^{①}$		$V_C@I_{PP}^{①}$		$C_0^{②}$	$C_0^{③}$
	μA	V	V	mA	V	A	V	A	pF	pF
	MAX		MIN		MAX		MAX		TYP	TYP
BV-ULC0524PA	1.0	5.0	6.0	1.0	15.0	1.0	25.0	4.0	0.6	0.3

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

① Surge Waveform: 8/20us, Pin1,2,4,5 to Pin3,8;

② Off-state capacitance is measured in $V_{BR}=0\text{V}$, $f=1\text{MHz}$, Pin1,2,4,5 to Pin3,8, any I/O to GND;

③ Off-state capacitance is measured in $V_{BR}=0\text{V}$, $f=1\text{MHz}$, any I/O-I/O;

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Part Number System

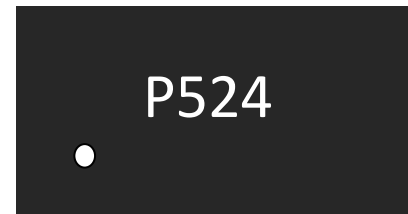
BV ULC0524PA

(1) (2)

(1) Bencent TVS

(2) Series: ULC0524PA etc.

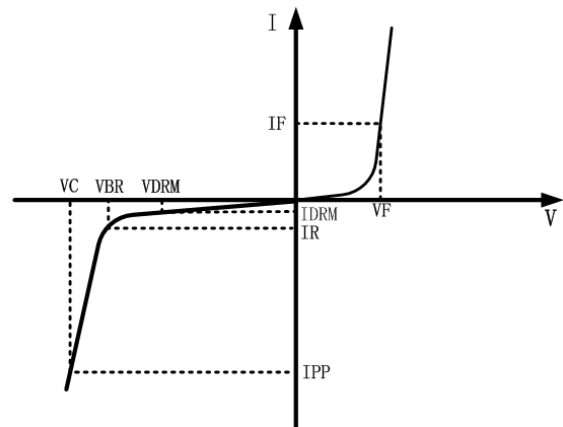
Mark



P524: Marking

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{PP}	Peak pulse current
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	°C
T_S	Storage Temperature Range	-55 to +150	°C

Environmental Characteristics

Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature: $150 \pm 3^\circ\text{C}$, Bias = $80\% V_{DRM}$ 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, 100 cycles
High Temperature & High Humidity Test	Temperature: 85°C Humidity: 85% Test time: 168H
Pressure Cooker Test	Temperature: 121°C , 2atm. Humidity: 100% Test time: 24H
Resistance of Soldering Heat	Temperature: $260 \pm 5^\circ\text{C}$ Time of dip soldering: 10s, 3 times

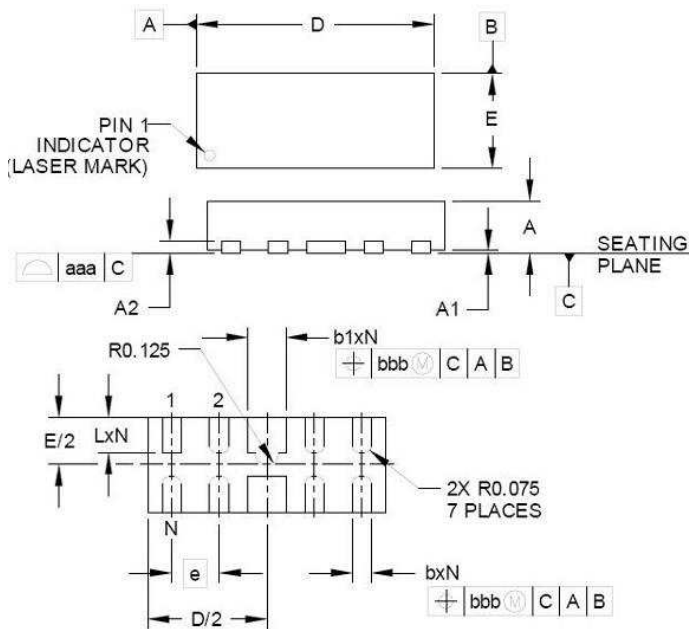
Note: The above testing items can be specified by customers by contacting Bencent service

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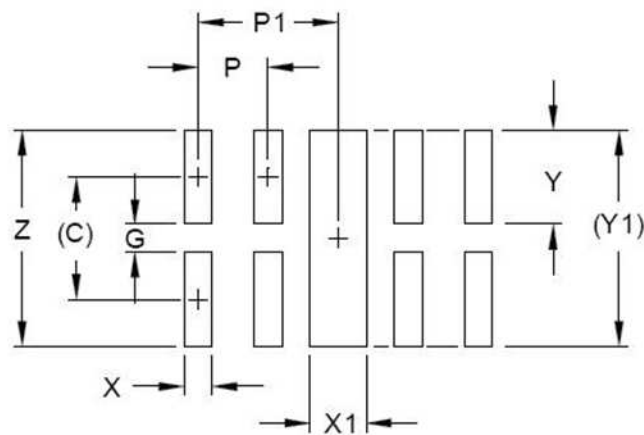
Product Dimensions

DFN2510-10L



REF	mm	inch
A	0.58 ± 0.08	0.023 ± 0.003
A1	0.03 ± 0.03	0.001 ± 0.001
A2	0.13 (Max)	0.005 (Max)
b	0.20 ± 0.05	0.008 ± 0.002
b1	0.40 ± 0.05	0.016 ± 0.002
D	2.50 ± 0.10	0.098 ± 0.004
E	1.00 ± 0.10	0.039 ± 0.004
e	0.50	0.020
L	0.38 ± 0.05	0.015 ± 0.002

Recommended Soldering Pad



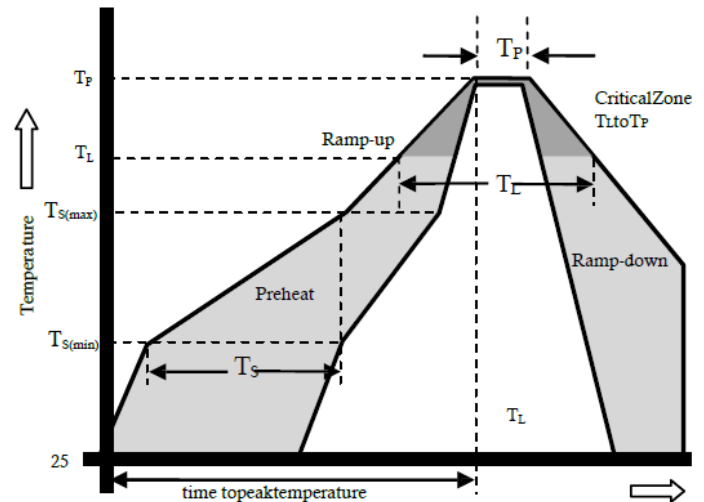
REF	mm	inch
C	0.875	0.034
G	0.20	0.008
P	0.50	0.020
P1	1.00	0.039
X	0.20	0.008
X1	0.40	0.016
Y	0.65	0.026
Y1	1.55	0.061
Z	1.55	0.061

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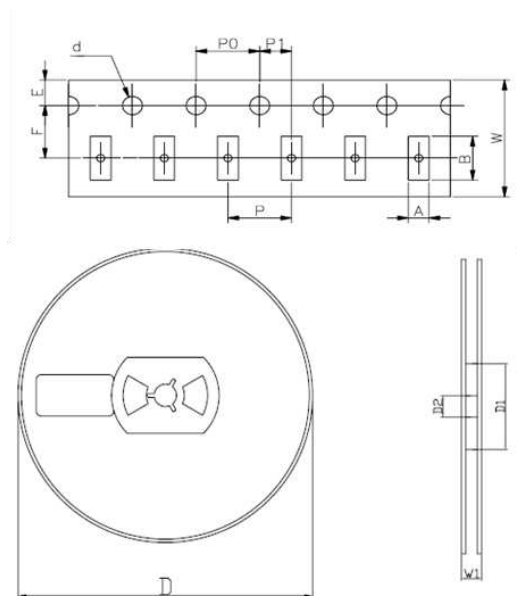
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Reflow Profile

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (Min to Max)	20 – 80 secs
Average ramp up rate (Liquid)		3°C/s Max.
Temperature (T _L) to peal		
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		8– 15 secs
Temperature (T _P)		
Ramp-down Rate		6°C/s Max.
Time 25°C to peak Temperature(T _P)		8 min Max
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	1.3+/-0.1	0.051+/-0.004
B	3.0+/-0.1	0.354+/-0.004
d	1.25+/-0.1	0.049+/-0.004
D	178+/-1.0	7.01+/-0.039
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	3.6+/-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	14.4+/-0.5	0.567+/-0.020

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size (mm)		
				L	W	H
Taping	3,000	90,000	178	390	370	220

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