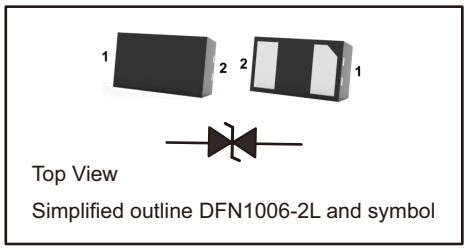
Transient Voltage Suppressors for ESD Protection



Top View
Simplified outline DFN1006-2L and symbol

FEATURES

- Stand-off voltage: 3.3V Max.
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact) ±30kV (air)
  IEC61000-4-5(Lightning): 8A (8/20μs)
- Low leakage current

Applications

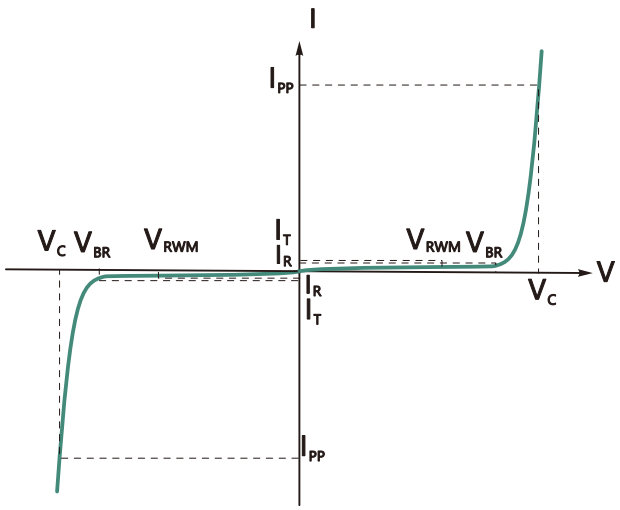
- Computers and peripherals;
- Audio and video equipment;
- Communication systems;
- Portable electronics.

General Description

The ESDBULC3V3DS2A is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications

Electronics Parameter

Parameter	Symbol
Maximum Reverse Peak Pulse Current	I_{PP}
Clamping Voltage @ I_{PP}	V_C
Peak Reverse Working Voltage	V_{RWM}
Reverse Leakage Current @ V_{RWM}	I_R
Breakdown Viltage @ I_T	V_{BR}
Test Current	I_T



MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μS)	Ppk	110	W
Peak Pulse Current	Ipp	8	A
ESD per IEC 61000-4-2(Air)	VESD	±30	KV
ESD per IEC 61000-4-2(Contact)		±30	
Operating Temperature Range	TJ	-55~+125	℃
Storage Temperature Range	Tstg	-55~+150	℃

ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Stand-o ffVoltage	VRWM				3.3	V
Breakdown Voltage	VBR	IT=1mA	4.0	5.0	6.5	V
Reverse Leakage Current	IR	V=VRWM,Ta=25℃			0.2	μA
Clamping Voltage	VC	IPP=4A,tp=8/20μs		9.5	11.5	V
		IPP=8A,tp=8/20μs		14.5	16.5	
Junction Capacitance	Cj	VR = 0V, f = 1MHz		0.45	0.6	pF

Typical Characteristics

Fig.1 Clamping Voltage vs. Peak Pulse Current

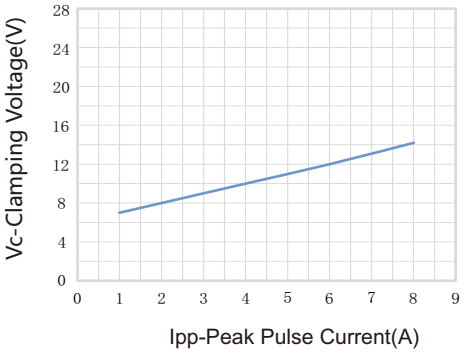


Fig.2 Contact discharge current waveform per IEC61000-4-2

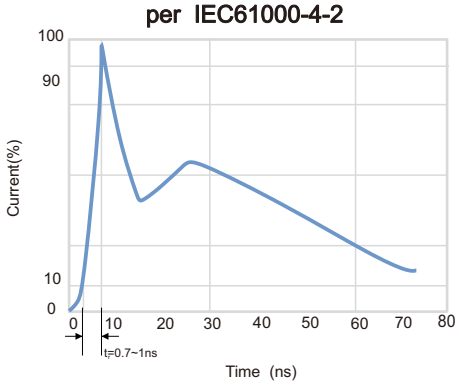


Fig.3 Power Derating Curve

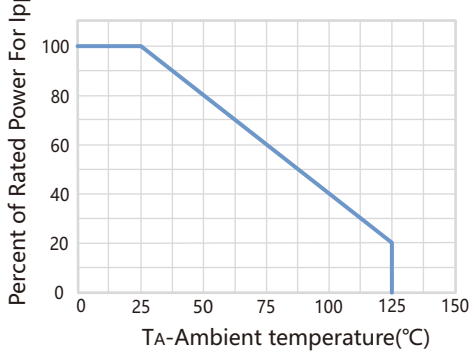


Fig 4. Junction Capacitance

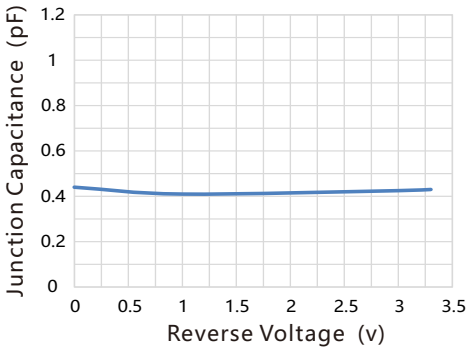


Fig.5 Non-repetitive peak pulse power vs. Pulse time

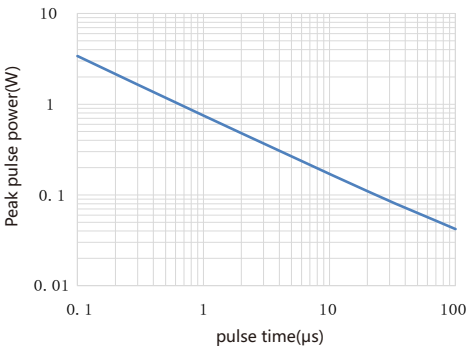
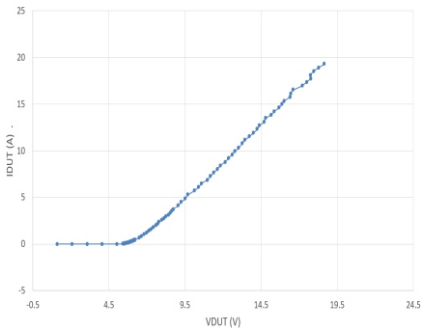
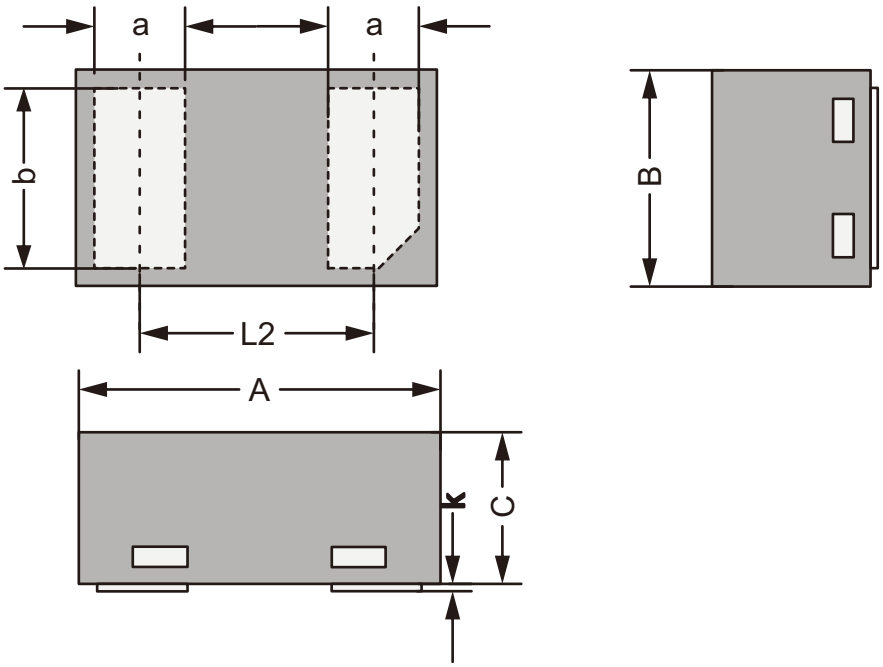


Fig.6 TLP Characteristic



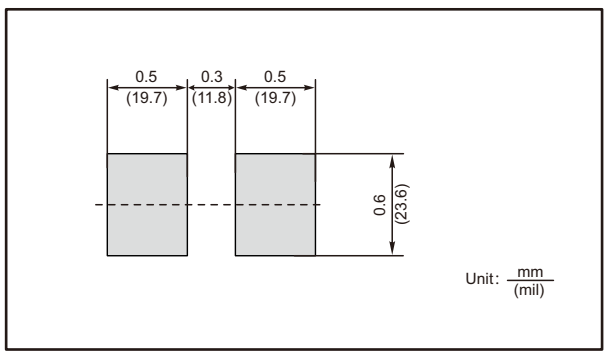
DFN1006-2L Package Outline Dimensions



DFN1006-2L mechanical data

UNIT		A	B	C	L2	a	b	k
mm	max	1.05	0.65	0.55	0.65 REF	0.29	0.54	0.03
	min	0.95	0.55	0.45		0.21	0.46	0.00
mil	max	41.34	25.59	21.65	25.59 REF	11.42	21.26	55.12
	min	37.40	21.65	17.72		8.27	18.11	1.18

The recommended mounting pad size



Marking

Type number	Marking code
ESDBULC3V3DS2A	3H

Important Notice and Disclaimer

Jingdao Microelectronics reserves the right to make changes to this document and its products and specifications at any time without notice.
Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

Jingdao Microelectronics makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does Jingdao Microelectronics assume any liability for application assistance or customer product design.

Jingdao Microelectronics does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Jingdao Microelectronics.

Jingdao Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of Jingdao Microelectronics.