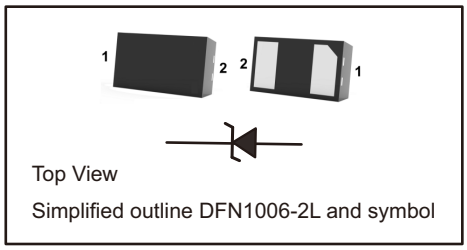
Transient Voltage Suppressors for ESD Protection



Top View
Simplified outline DFN1006-2L and symbol

FEATURES

- Stand-off voltage: 5.0V Max.
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact) ±30kV (air)
  IEC61000-4-5(Lightning): 10A (8/20μs)
- Low leakage current

Applications

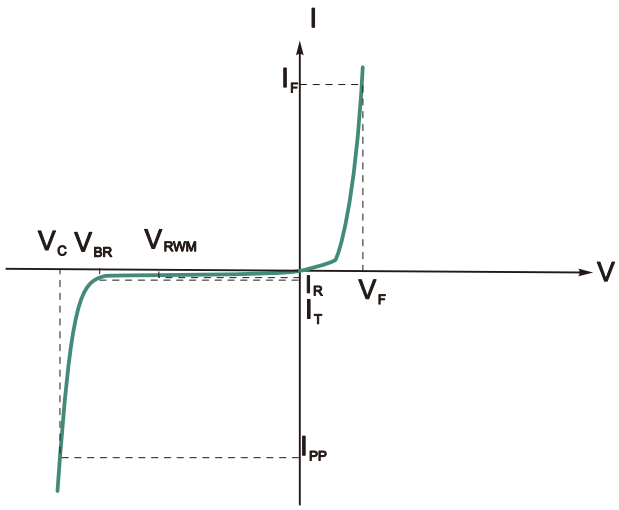
- Computers and peripherals;
- Audio and video equipment;
- Communication systems;
- Portable electronics.

General Description

The ESD5V0DS2A 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
Forward Current	I_F
Forward Voltage @ I_F	V_F



MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μS)	Ppk	120	W
Peak Pulse Current	Ipp	10	A
ESD per IEC 61000-4-2(Air)	VESD	±30	KV
ESD per IEC 61000-4-2(Contact)		±30	
Operating Temperature Range	TJ	-40~+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				5.0	V
Breakdown Voltage	VBR	IT=1mA	6.0	7.5	9.0	V
Reverse Leakage Current	IR	V=VRWM,Ta=25℃		10	100	μA
Clamping Voltage	VC	IPP=1A,tp=8/20μs		8	10	V
		IPP=10A,tp=8/20μs		11	12	
Junction Capacitance	Cj	VR = 0V, f = 1MHz		65	90	pF

Typical Characteristics

Fig.1 Pulse Waveform

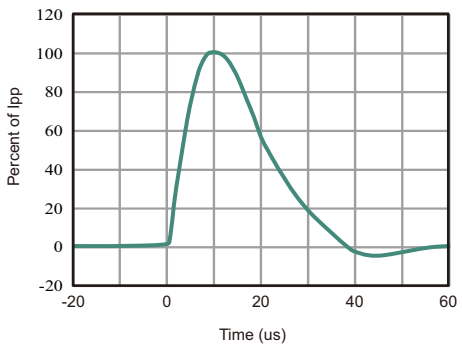


Fig.2 Contact discharge current waveform per IEC61000-4-2

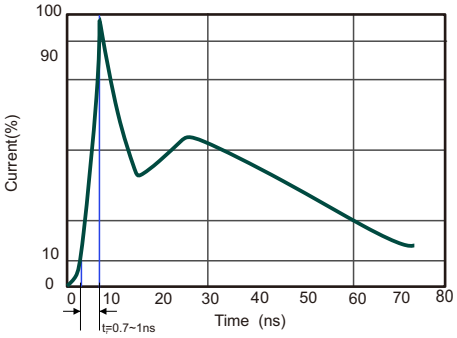
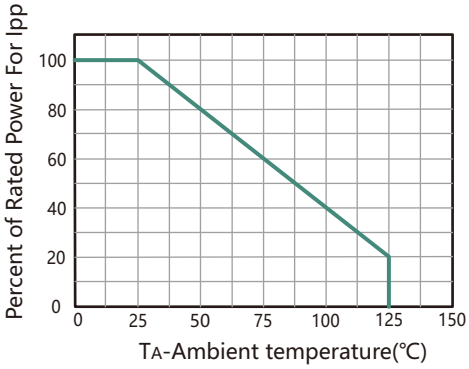
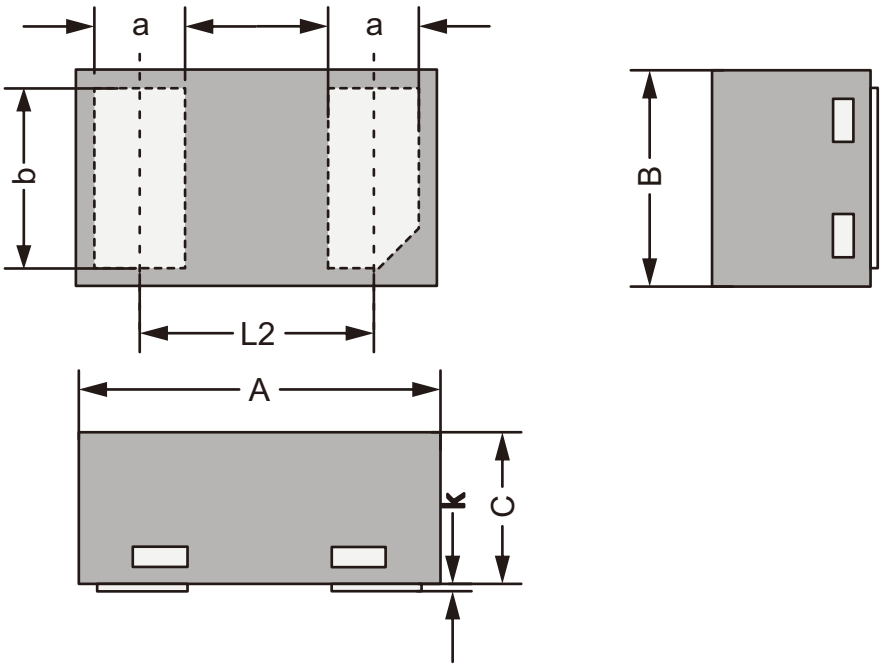


Fig.3 Power Derating Curve



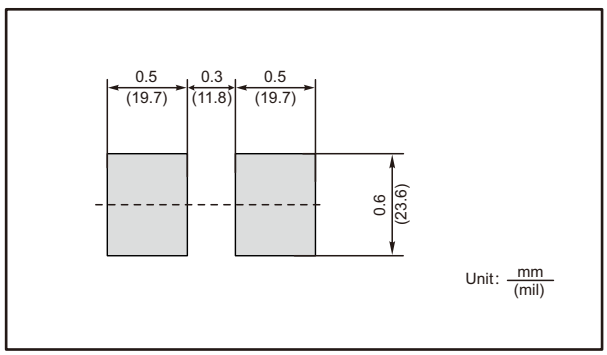
DFN1006-2L Package Outline Dimensions



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
ESD5V0DS2A	PU

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