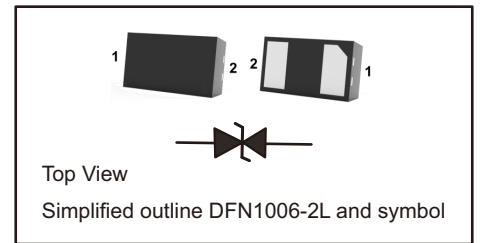




Transient Voltage Suppressors for ESD Protection

General Description

The ESDB5V5DS2A is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, 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

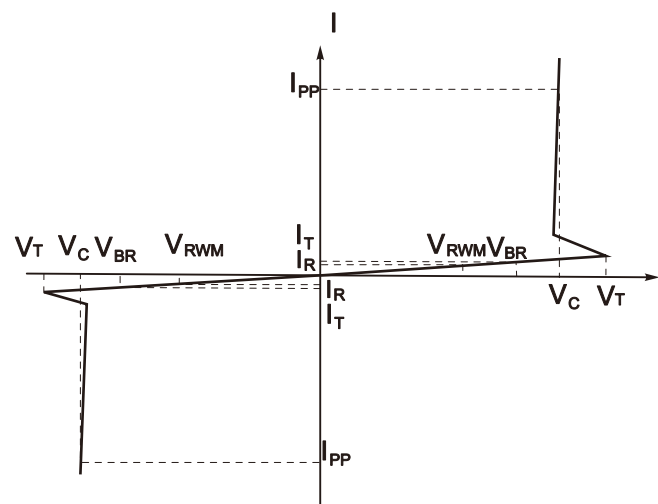


Features

- Ultra Low Capacitance 10 pF Typ
- Low Clamping Voltage
- Small Body Outline Dimensions:
- Stand-off Voltage: ± 5.5 V
- Low Leakage

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
Trigger Voltage @ I_T	V_T
Test Current	I_T



- Note: 8/20us pulsewaveform



Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20uS)	P _{pk}	72	W
Peak Pulse Current	I _{pp}	6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	KV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-off Voltage	V _{RWM}				±5.5	V
Breakdown Voltage	V _{BR}	I _T =1mA	6.1	7		V
Reverse Leakage Current	I _R	V=5.5v, Ta=25°C			100	nA
Clamping Voltage ⁽¹⁾	V _C	I _{pp} =1A, tp=8/20us			8	V
		I _{pp} =6A, tp=8/20us			12	V
Junction Capacitance	C _j	V _R =2.5V, f=1MHz		8	11	V
		V _R =0V, f=1MHz		10	13	pF

Notes:

(1) Non-repetitive current pulse, according to IEC61000-4-5.



Typical Characteristics

Fig.1 Pulse Waveform

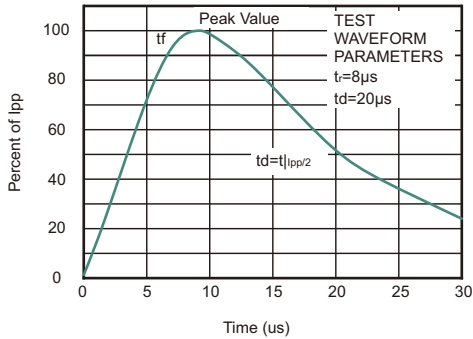


Fig.2 Contact discharge current waveform per IEC61000-4-2

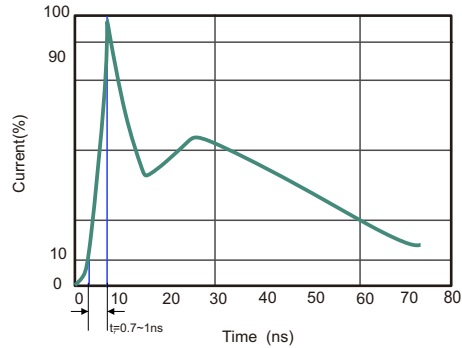


Fig.3 Clamping Voltage vs. Peak Pulse Current

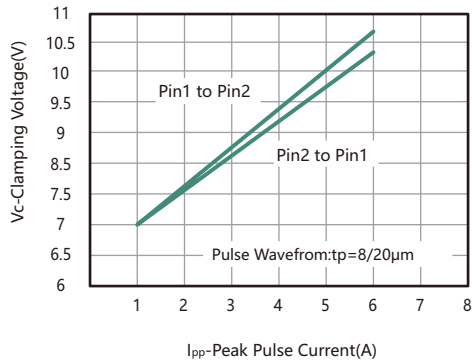


Fig.4 Capacitance vs. Reverse voltage

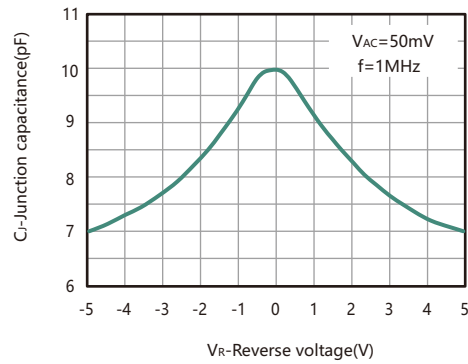


Fig.5 Non-repetitive peak pulse power vs. Pulse time

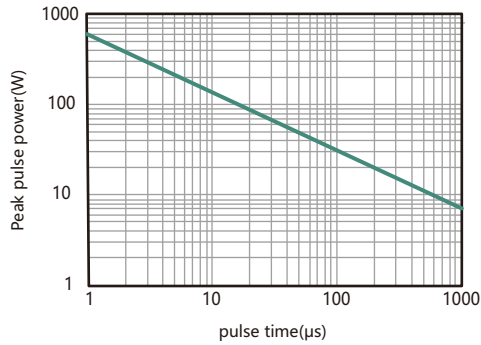
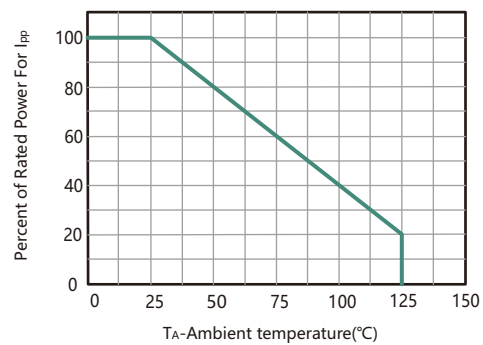
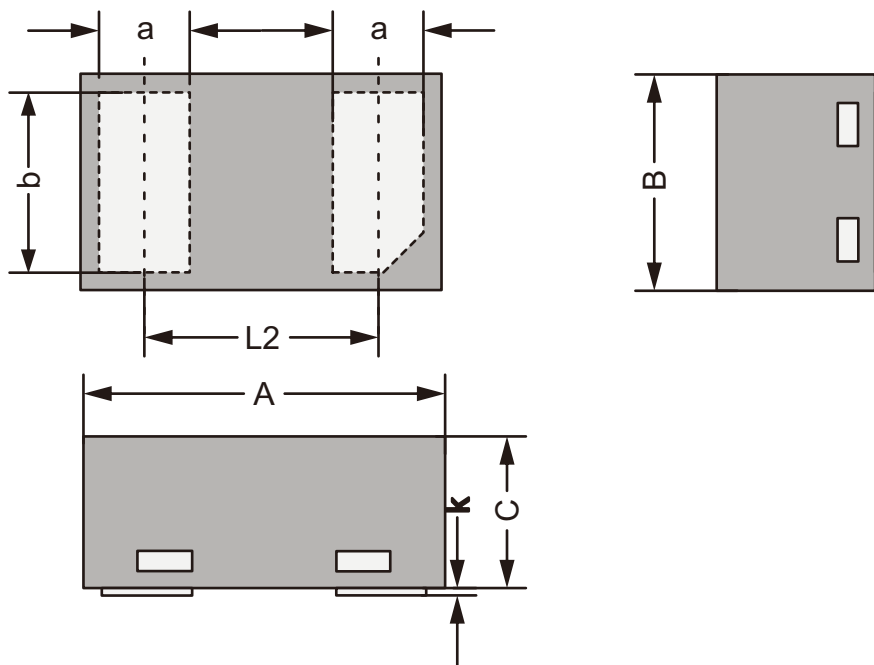


Fig.6 Power Derating Curve





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

Marking

Type number	Marking code
ESDB5V5DS2A	6A



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