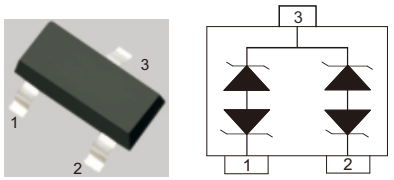
Transient Voltage Suppressors for ESD Protection

General Description

The ESDB18V0T2CA 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.



Simplified outline SOT-23 And symbol

FEATURES

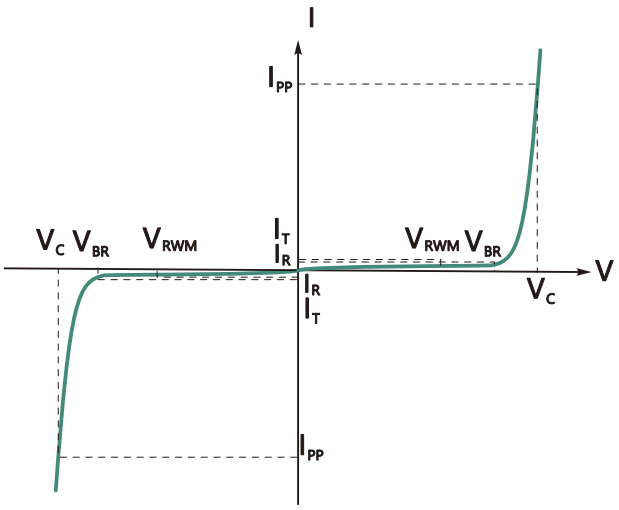
- Stand-off voltage: 18V Max.
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact) ±30kV (air)
  IEC61000-4-4(Lightning): 10A (8/20μs)
- Ultra-low capacitance: Cj = 20pF typ.
- Low leakage current

Applications

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

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	350	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	-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-off Voltage	VRWM				18	V
Breakdown Voltage	VBR	IT=1mA	20.5		26	V
Reverse Leakage Current	IR	V=VRWM,Ta=25℃			1	μA
Clamping Voltage	VC	IPP=1A,tp=8/20μs		25		V
		IPP=10A,tp=8/20μs			35	
Junction Capacitance	Cj	VR=0V , f=1MHz		20	50	pF

Typical Characteristics

Fig.1 Clamping Voltage vs. Peak Pulse Current

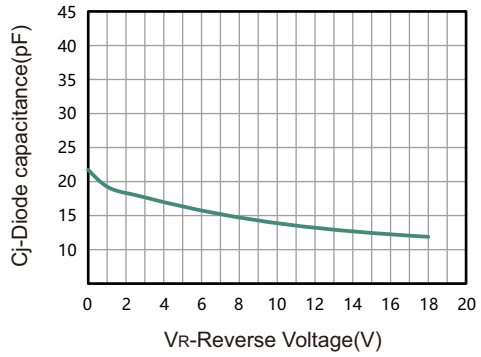


Fig.2 Clamping Voltage vs. Peak Pulse Current

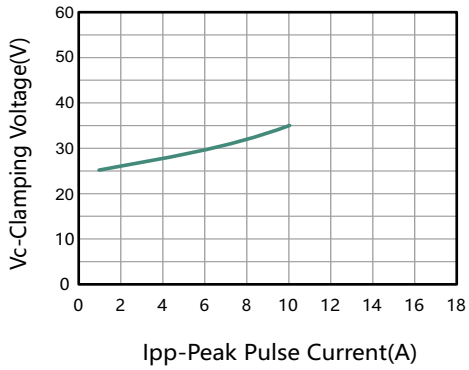


Fig.3 Non-repetitive peak pulse power vs. Pulse time

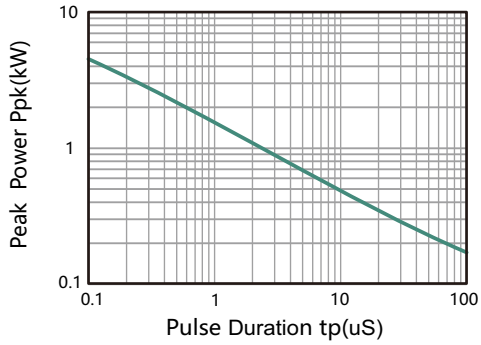


Fig.4 Power Derating Curve

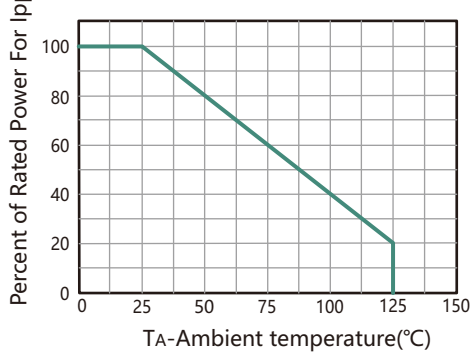


Fig.5 Pulse Waveform

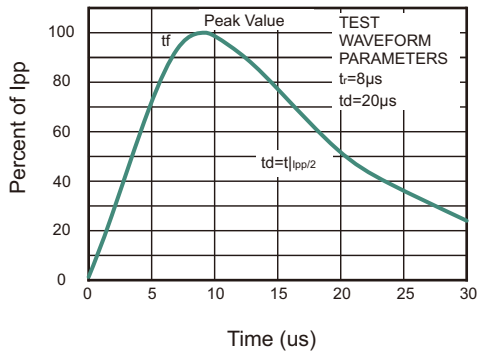
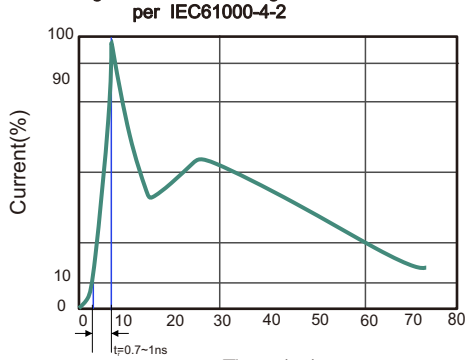
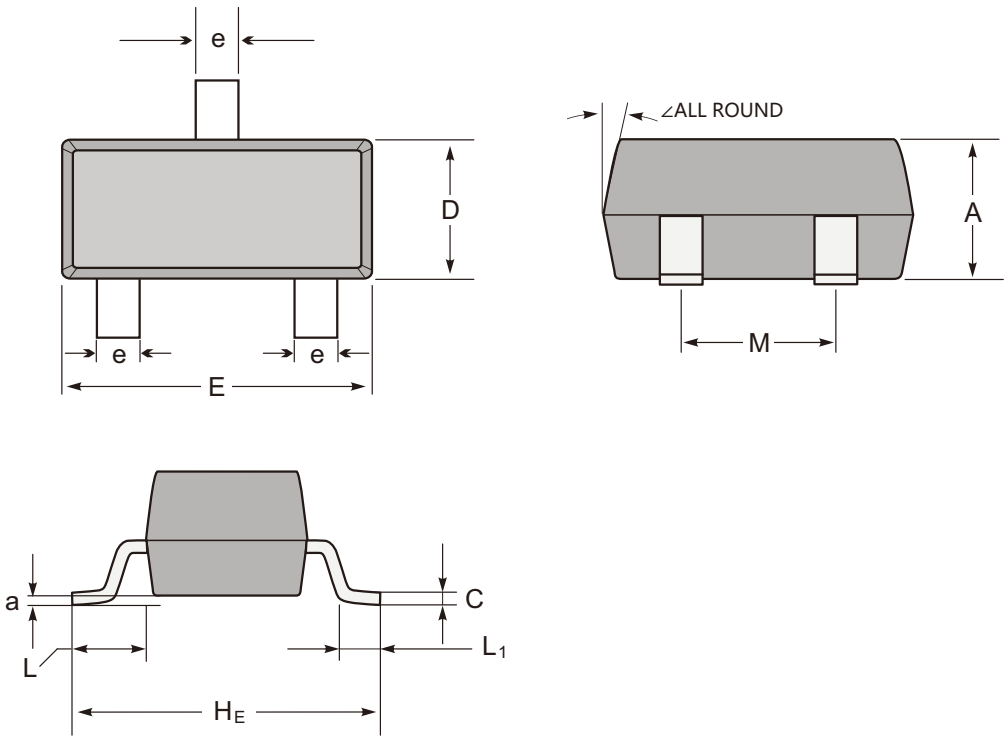


Fig.6 Contact discharge current waveform per IEC61000-4-2



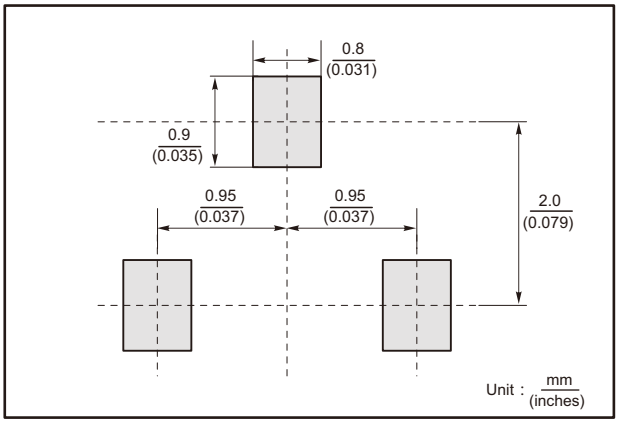
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a	∠
mm	max	1.1	0.20	1.4	3.0	2.6	0.6	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.35	1.7			0.0	
mil	max	43	7.9	55	118	102	24	77	22 (ref)	14 (ref)	6	
	min	35	3.1	47	110	87	13	67			0.0	

The recommended mounting pad size



Marking

Type number	Marking code
ESDB18V0T2CA	2K

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