EVVOSEMI®
THINK CHANGE DO

ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

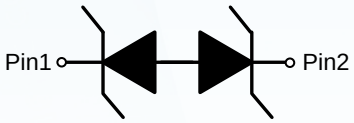
Domestic Part Number	ESD5B5VL
Overseas Part Number	ESD5B5VL
Equivalent Part Number	ESD5B5VL

Descriptions

The ESD5B5VL is a bi-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components that may be subjected to ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

The ESD5B5VL may be used to provide ESD protection up to ±8kV (contact discharge) according to IEC61000-4-2, and withstand peak pulse current up to 3.5A (8/20μs) according to IEC61000-4-5.

The ESD5B5VL is available in SOD-523 package. Standard products are Pb-free and Halogen-free.



Circuit diagram

Features

- Stand-off voltage: ±5V Max
- Transient protection for each line according to
  IEC61000-4-2 (ESD): ±8kV (contact discharge)
  IEC61000-4-4 (EFT): 40A (5/50ns)
  IEC61000-4-5 (surge): 3.5A (8/20μs)
- Capacitance: C_J = 5pF typ.
- Solid-state silicon technology

Applications

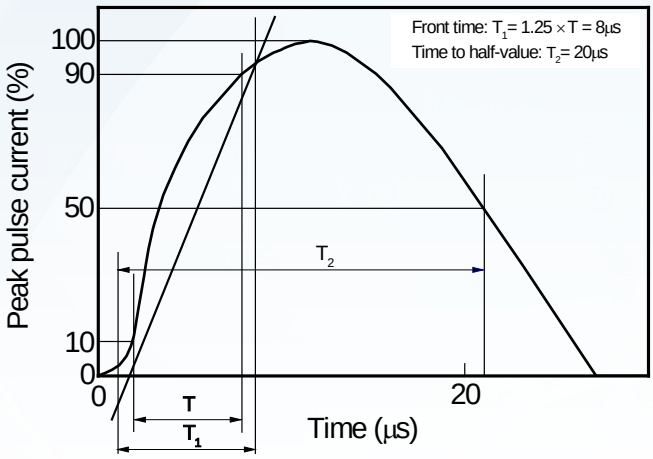
- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, and Serves
- Portable Instrumentation
- Digital Cameras
- MP3/MP4/PMP Players

Parameter	Symbol	Rating	Unit
Peak pulse power (t_p = 8/20μs)	P_{pk}	50	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	3.5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±15	kV
ESD according to IEC61000-4-2 contact discharge		±8	
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

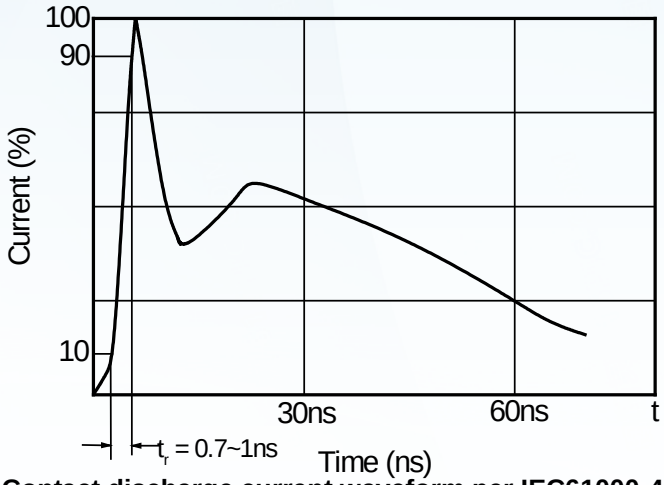
Electrical characteristics (T_A=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				±5	V
Reverse leakage current	I_R	V_{RWM} = 5V			1	uA
Reveres breakdown voltage	V_{BR12}	I_T=1mA	6.5	7.7	8.1	V
Forward voltage	V_{BR21}	I_F=1mA	6.5	7.8	8.1	V
Clamping voltage	V_{CL}	V_{ESD} = 8kV		20		V
Clamping voltage	V_C	Ipp=1A tp=8/20us			10	V
		Ipp=3.5A tp=8/20us			14	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz		5.0	10	pF
		V_R =5V, f = 1MHz		2.5	5	pF

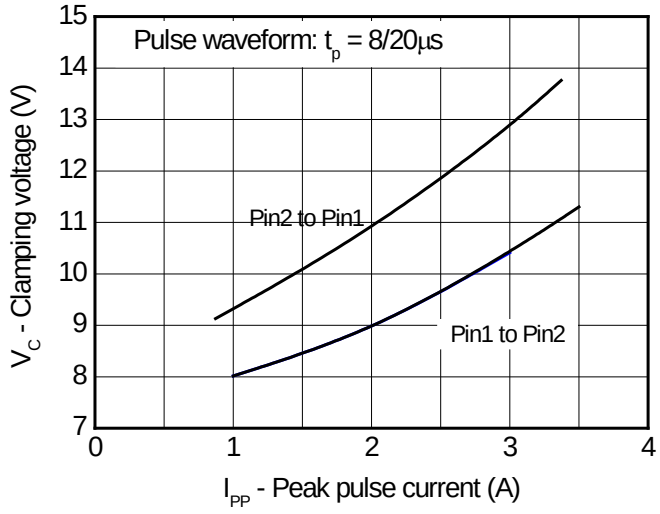
C, unless otherwise noted)



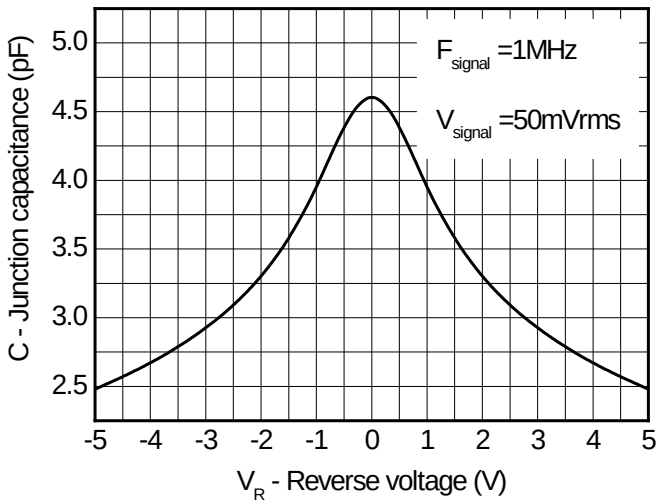
8/20μs waveform per IEC61000-4-5



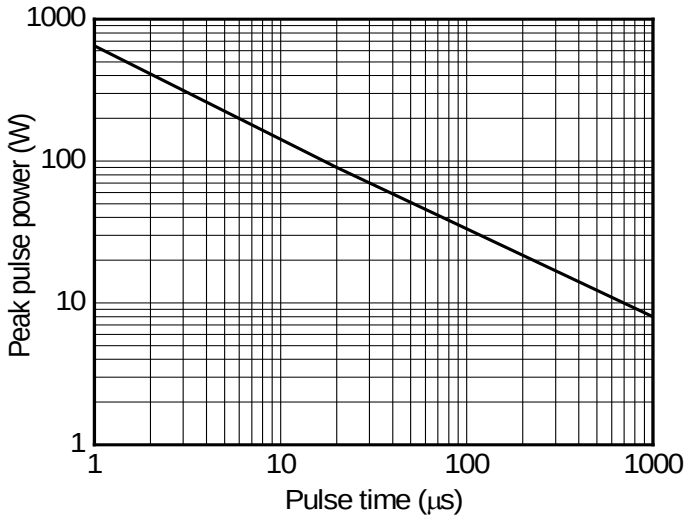
Contact discharge current waveform per IEC61000-4-2



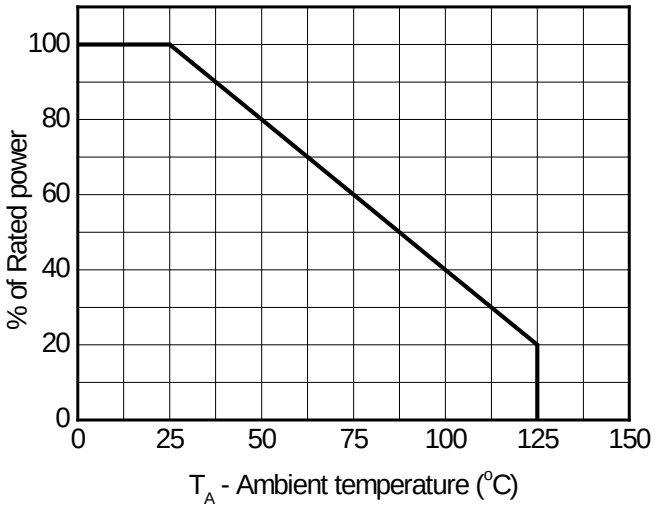
Clamping voltage vs. Peak pulse current



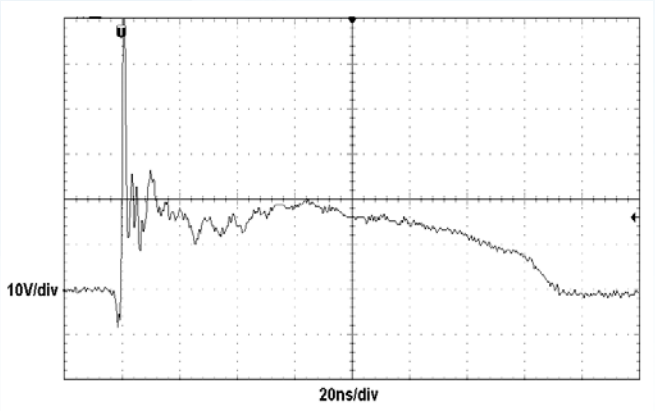
Capacitance vs. Reverse voltage



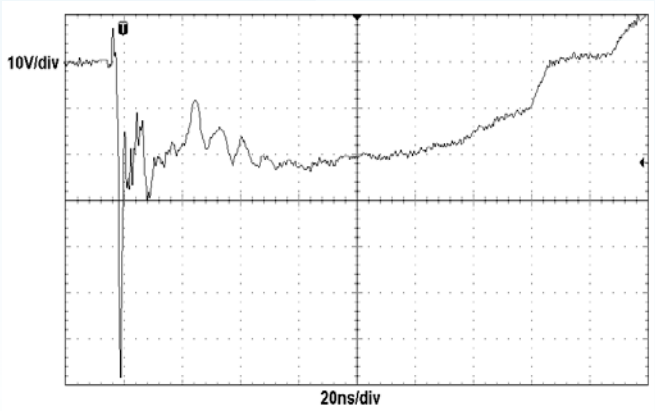
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

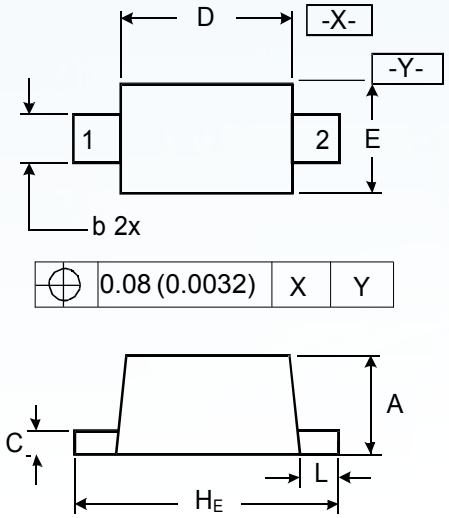


ESD clamping
(+8kV contact discharge per IEC61000-4-2)



ESD clamping
(-8kV contact discharge per IEC61000-4-2)

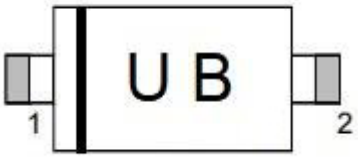
SOD-523



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
H_E	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010

Marking



Ordering information

Order code	Package	Baseqty	Delivery mode
ESD5B5VL	SOD-523	3000	Tape and reel

Disclaimer

EVVOSEMI ("EVVO") reserves the right to make corrections, enhancements, improvements, and other changes to its products and services at any time, and to discontinue any product or service without notice.

EVVO warrants the performance of its hardware products to the specifications applicable at the time of sale in accordance with its standard warranty. Testing and other quality control techniques are used as deemed necessary by EVVO to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Customers should obtain and confirm the latest product information and specifications before final design, purchase, or use. EVVO makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does EVVO assume any liability for application assistance or customer product design. EVVO does not warrant or accept any liability for products that are purchased or used for any unintended or unauthorized application.

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

The EVVO logo and EVVOSEMI are trademarks of EVVOSEMI or its subsidiaries in relevant jurisdictions. EVVO reserves the right to make changes without further notice to any products herein.