

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



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MOV



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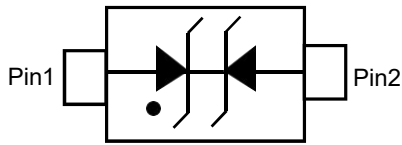


PLED

Product data sheet



SOD-323



Circuit Diagram

**Feature**

- 2000W Peak pulse power per line ( $t_P = 8/20\mu s$ )
- SOD-323 package
- Response time is typically  $< 1\text{ ns}$
- Protect one I/O or power line
- Low clamping Voltage
- RoHS compliant
- Transient protection for data lines to IEC 61000-4-2(ESD)  $\pm 30\text{KV}(\text{air}), \pm 30\text{KV}(\text{contact});$  IEC 61000-4-4 (EFT) 40A (5/50ns)

**Applications**

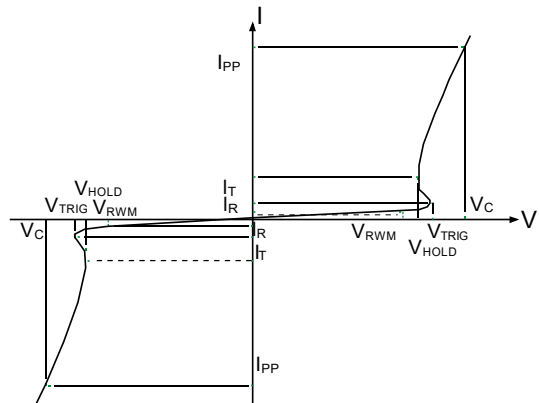
- Cell phone handsets and accessories
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Cordless phones
- Digital cameras
- Peripherals
- MP3 players

**Mechanical Characteristics**

- Lead finish: 100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:  $260^\circ\text{C}$
- Device meets MSL 1 requirements
- Pure tin plating:  $7 \sim 17\ \mu\text{m}$
- Pin flatness:  $\leq 3\text{mil}$

**Electronics Parameter**

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C_J$	Junction Capacitance



**Absolute maximum rating@25°C**

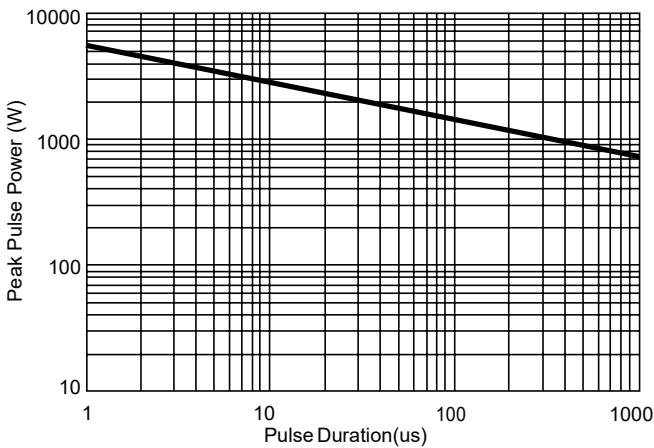
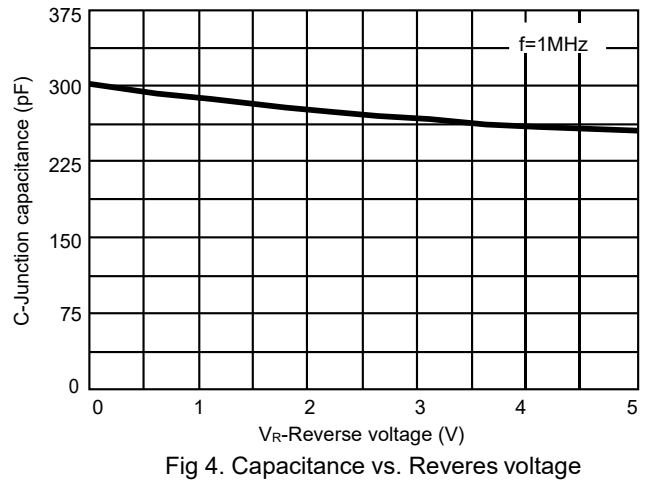
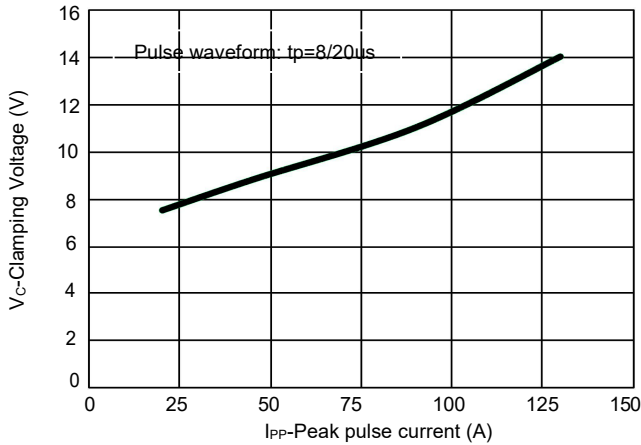
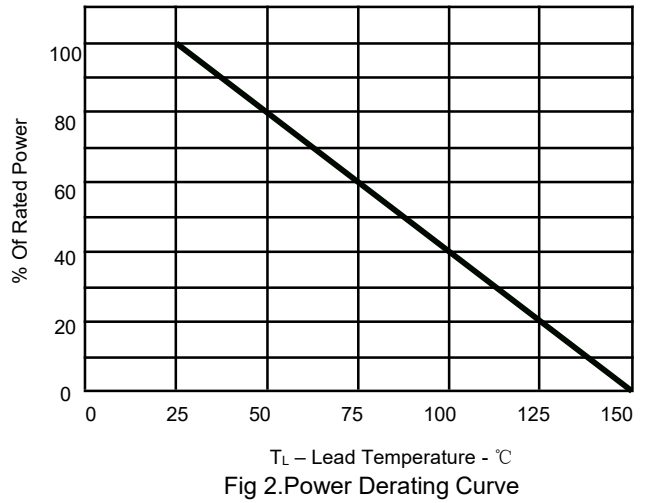
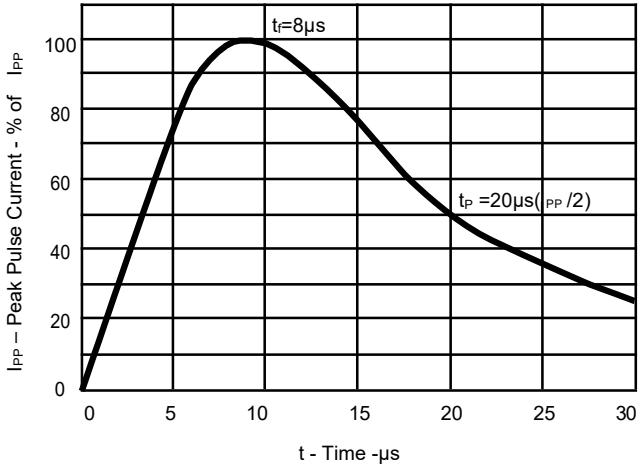
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_P = 8/20\mu S$ )	$P_{PP}$	2000	W
Total Device Dissipation FR-5 Board	$P_D$	500	mW
Lead Soldering Temperature	$T_L$	260 (10 sec)	°C
Operating Temperature	$T_J$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C

**Electrical characteristics per line@25°C ( unless otherwise specified)**

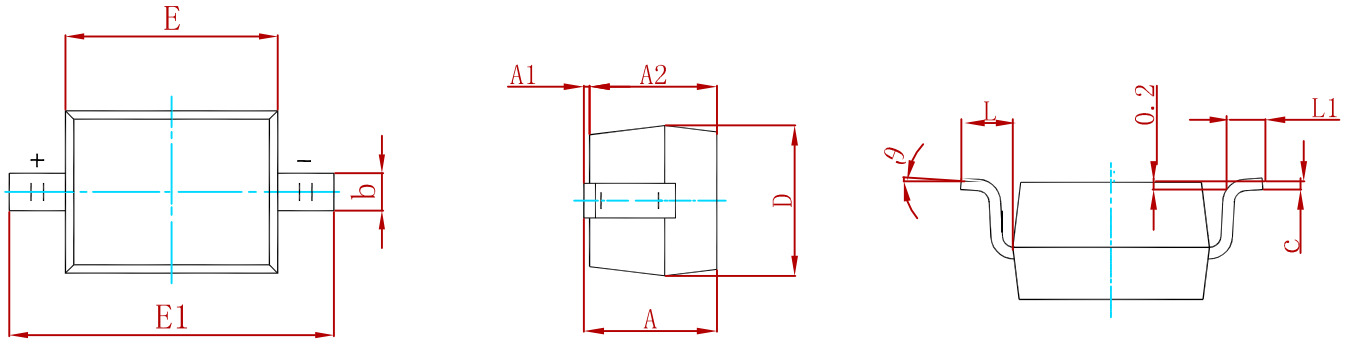
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage <sup>(1)</sup>	$V_{RWM}$				4.5	V
Breakdown Voltage(Pin1 to Pin2)	$V_{BR}$	$I_t = 1mA$	4.6	5.3	6.1	V
Reverse Leakage Current (Pin1 to Pin2)	$I_R$	$V_{RWM} = 4.5V$			2	$\mu A$
Clamping Voltage(Pin1 to Pin2)	$V_C$	$I_{PP} = 20A$ $t_P = 8/20\mu s$		7.5	8.5	V
Clamping Voltage(Pin1 to Pin2)	$V_C$	$I_{PP} = 45A$ $t_P = 8/20\mu s$		8.8	10	V
Clamping Voltage(Pin1 to Pin2)	$V_C$	$I_{PP} = 90A$ $t_P = 8/20\mu s$		11	12.5	V
Clamping Voltage(Pin1 to Pin2)	$V_C$	$I_{PP} = 130A$ $t_P = 8/20\mu s$		14	16	V
Junction Capacitance	$C_j$	$V_R = 0V$ $f = 1MHz$		320	360	pF

Note 1:  $V_{RWM}$  is the maximum reverse working voltage, or reverse stand-off voltage. ESD can protect signal line properly within its rated voltage. If the signal line's voltage is over  $V_{RWM}$ , ESD will change to other state.

**Typical Characteristics**

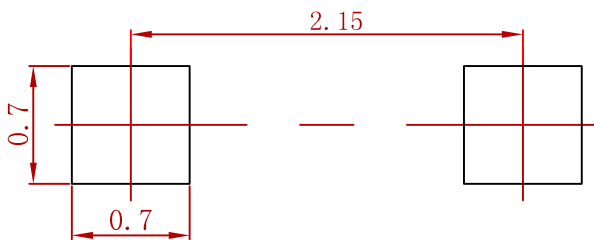


**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475 REF.		0.019 REF.	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

**Suggested Pad Layout**



- Note:**
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
PTVSHC3D4V5B-MS	SOD-323	3000

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