

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

ESD5V0X1BL-MS

Product specification

Features

- 80W peak pulse power per line ($t_p = 8/20\mu s$)
- SOD-882 package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically $< 1ns$
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to
IEC61000-4-2(ESD) $\pm 25KV$ (air), $\pm 25KV$ (contact);
IEC61000-4-4 (EFT) 40A (5/50ns)

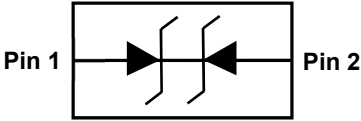
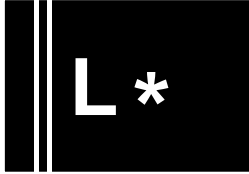
Mechanical Characteristics

- Mounting position: Any
- Qualified max reflow temperature: $260^{\circ}C$
- Device meets MSL 1 requirements
- SOD-882 without plating

Applications

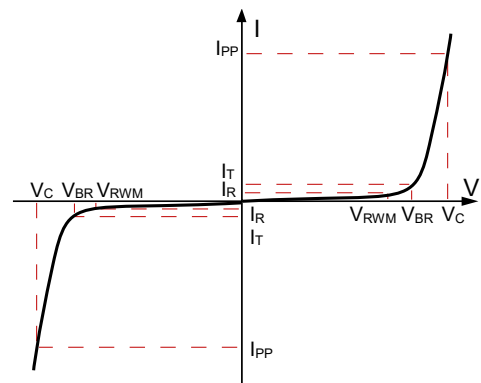
- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Reference News

SOD-882	PIN Configuration	Marking
	 Circuit Diagram	

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
I_F	Forward Current
V_F	Forward Voltage @ I_F



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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}			5		V
Breakdown Voltage	V_{BR}	$I_t = 1mA$	5.6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$ $T=25^{\circ}C$			1.0	μA
Clamping Voltage	V_{CL}	$I_{PP} = 16A$ $t_p = 100ns$		24		V
Clamping Voltage	V_C	$I_{PP} = 1.0A$			10	V
Clamping Voltage	V_C	$I_{PP} = 4.0A$			15	V
Junction Capacitance	C_j	$V_R = 0V$ $f = 1MHz$		0.30	0.50	pF

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	80	W
Operating Temperature	T_J	-55 to 150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}C$

Typical Characteristics

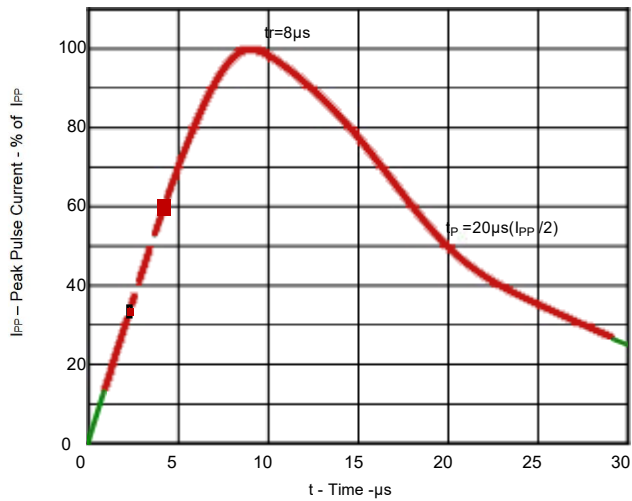


Fig 1. Pulse Waveform (8/20 μs)

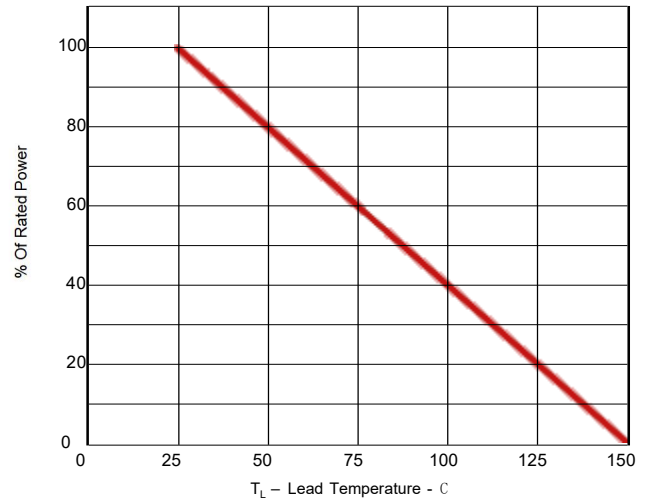


Fig 2. Power Derating Curve

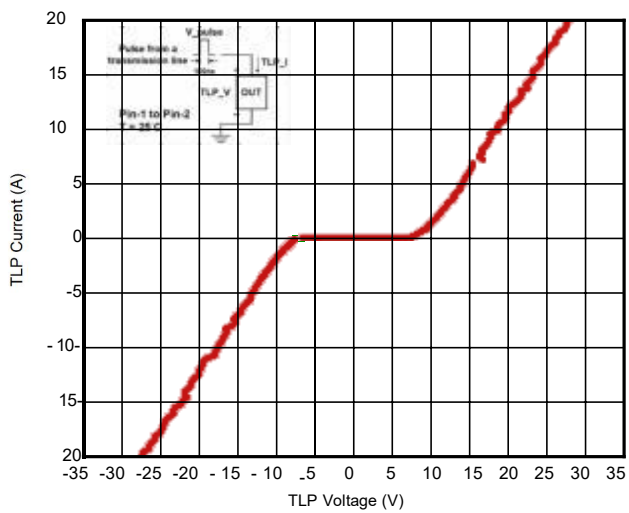


Fig 3. TLP Measurement

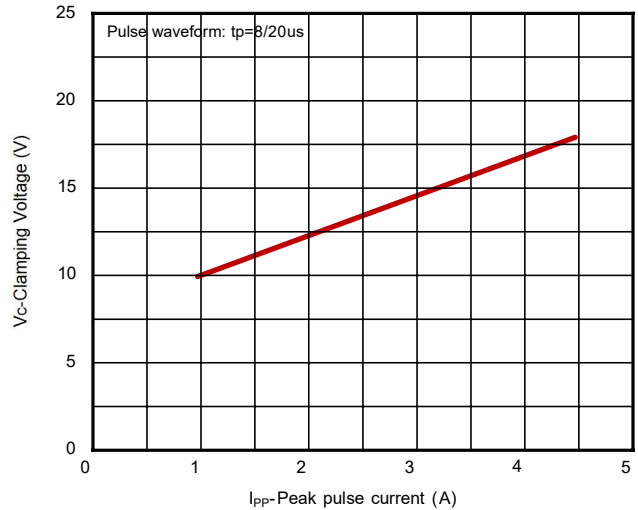


Fig 4. Clamping voltage vs. Peak pulse current

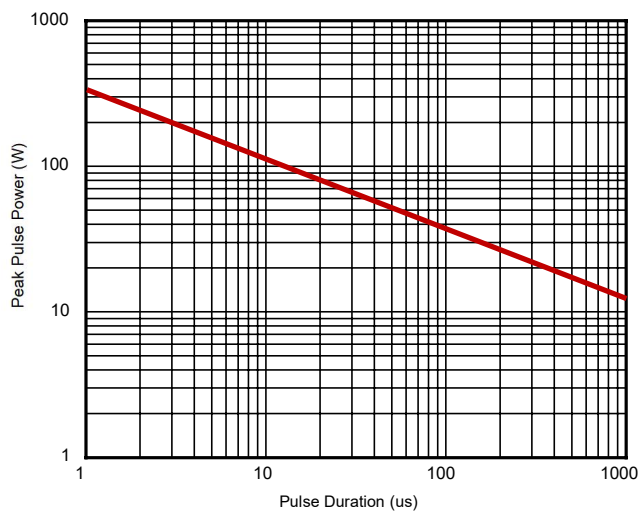


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

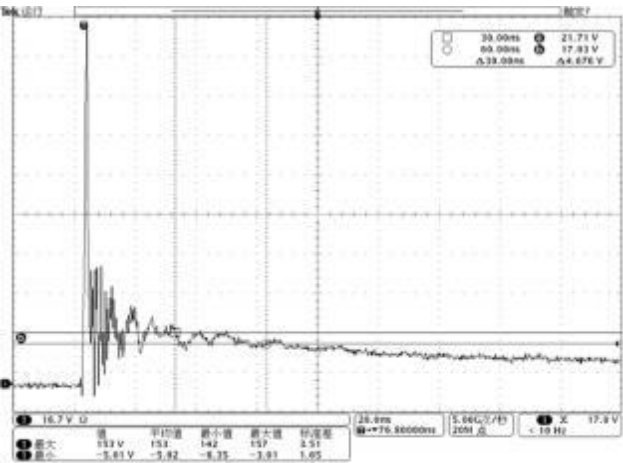


Fig 6.ESD Clamp[ing Voltage]
(IEC61000-4-2 +8KV contact)

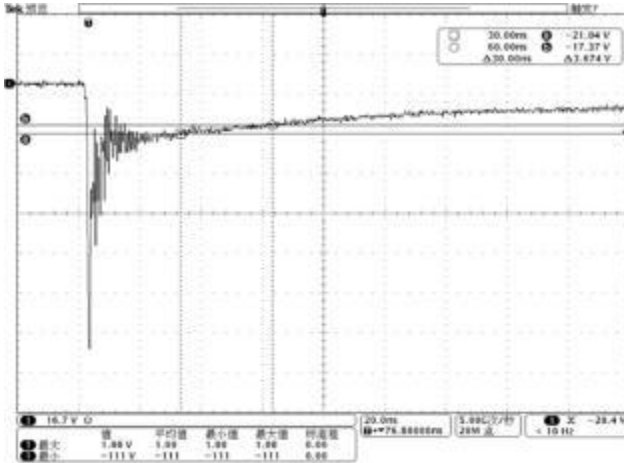
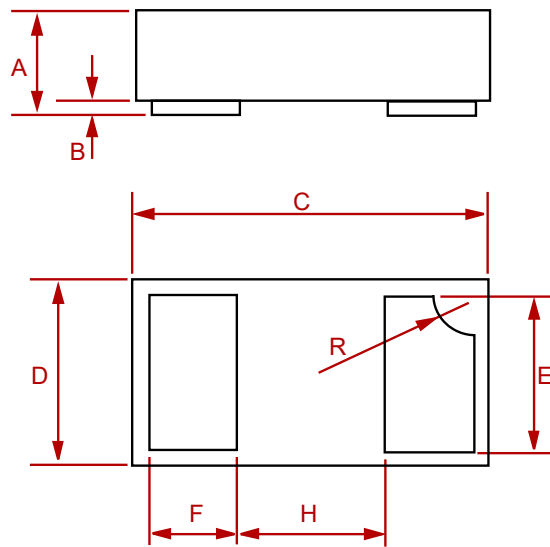


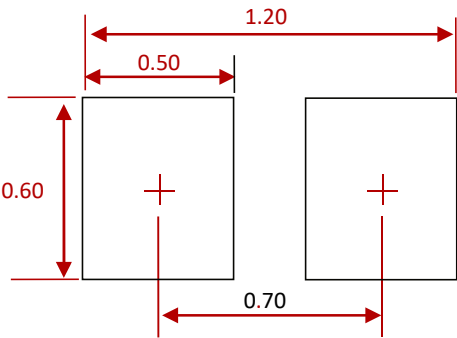
Fig 7.ESD Clamp[ing Voltage]
(IEC61000-4-2 -8KV contact)

PACKAGE MECHANICAL DATA



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.0125	0.02	0.32	0.52
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15

Suggested Pad Layout



- NOTES:
- 1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
 - 2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

Order information

Orderable Device	Package	Packing Option
ESD5V0X1BL-MS	SOD-882	10000PCS

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