

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## ESD9L5.0ST5G

Product specification

## FEATURES

- 40W peak pulse power per line ( $t_P = 8/20\mu s$ )
- SOD-923 package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically  $< 1ns$
- High ESD protection
- Low clamping voltage
- RoHS compliant




## MACHANICAL DATA

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

## APPLICATIONS

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

## Reference News

PACKAGE OUTLINE	PIN CONFIGURATION	Marking
		
SOD-923		

## ABSOLUTE MAXIMUM RATING

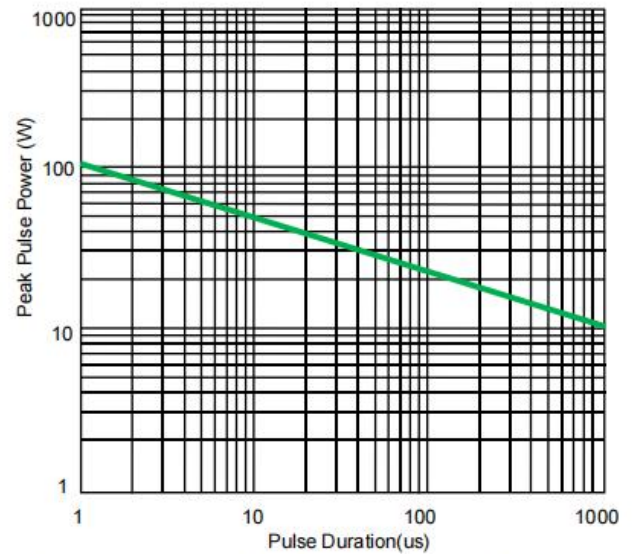
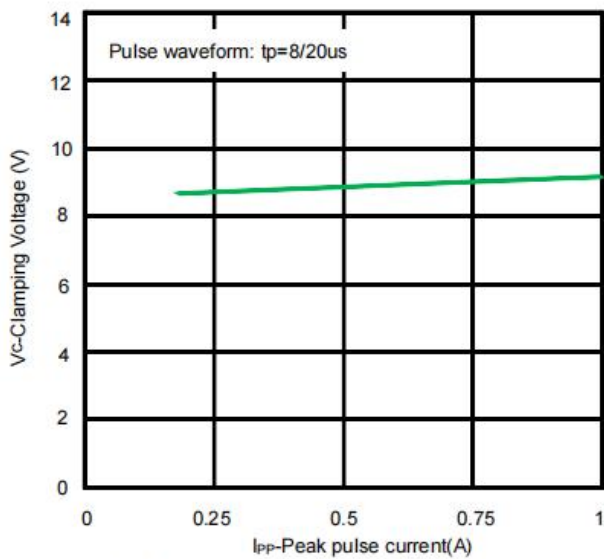
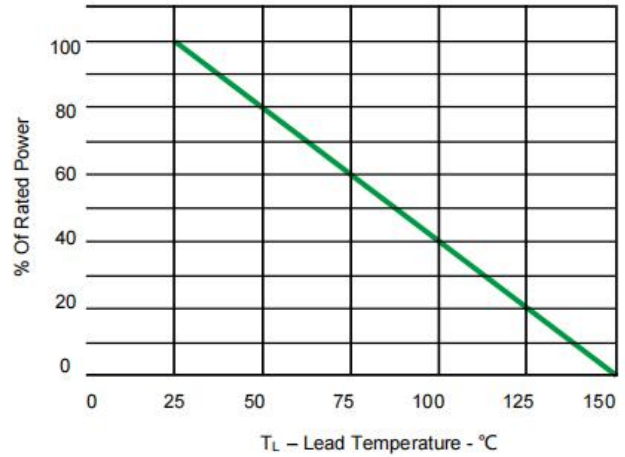
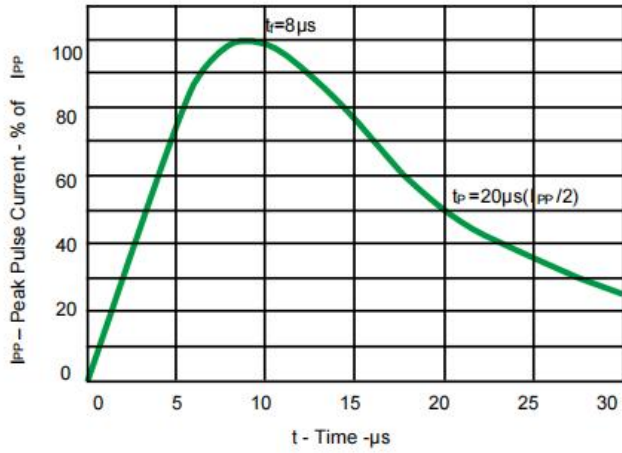
Symbol	Parameter	Value	Units
PPP	Peak Pulse Power (8/20μs)	40	W
TOPT	Operating Temperature	-55~150	°C
TSTG	Storage Temperature	-55~150	°C

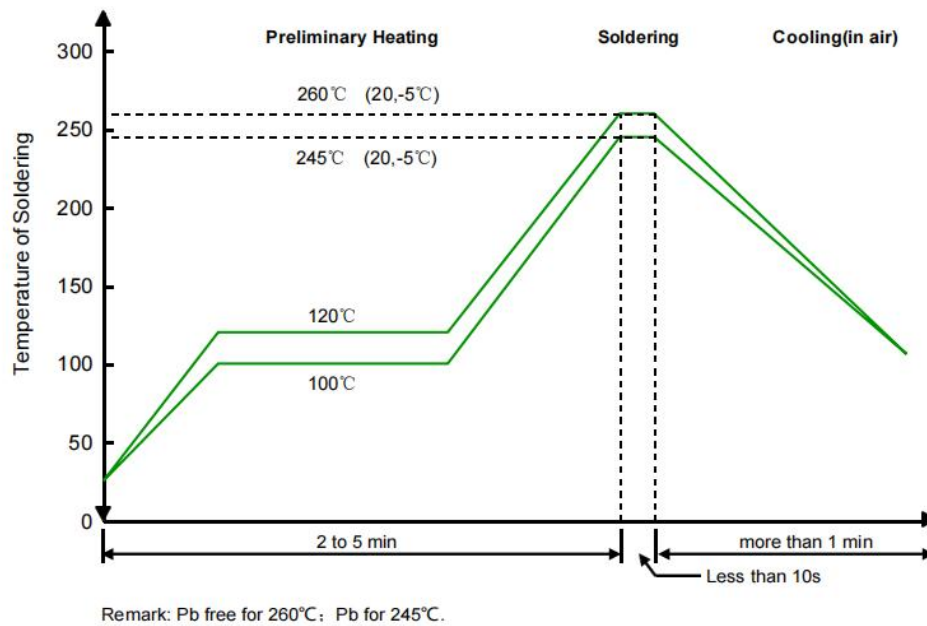
## ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
	Reverse Working Voltage				5.0	V
VBR	Reverse Breakdown Voltage	IT = 1mA	5.6	6.7	7.8	V
IR	Reverse Leakage Current	VRWM = 5V T=25°C			100	nA
VC	Clamping Voltage	I <sub>PP</sub> = 1A			9	V
CJ	Junction Capacitance	VR = 0V, f = 1MHz		0.5		pF

## ELECTRICAL CHARACTERISTICS CURVE

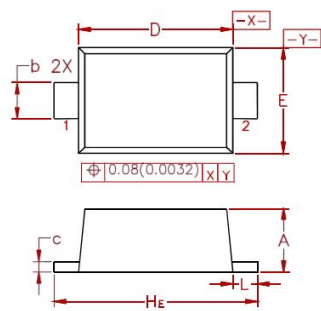
### Typical Characteristics



**Solder Reflow Recommendation****PCB Design**

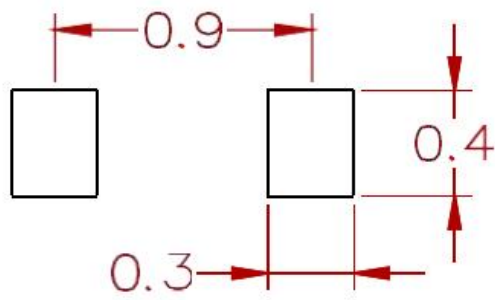
- For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:
  - Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
  - Do not make false economies and save copper for the ground connection.
  - Place via holes to ground as close as possible to the anode of the TVS diode.
  - Use as many via holes as possible for the ground connection.
  - Keep the length of via holes in mind! The longer the more inductance they will have.

**PACKAGE MECHANICAL DATA**



Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.36	0.40	0.43	0.014	0.016	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

**Suggested Pad Layout**



Dimensions: Millimeters

**REEL SPECIFICATION**

P/N	PKG	QTY
ESD9L5.0ST5G	SOD-923	8000

## **Attention**

■ Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.

■ MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specification of any and all MSKSEMI Semiconductor products described or contained herein.

■ Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

■ MSKSEMI Semiconductor strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all MSKSEMI Semiconductor products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringement of intellectual property rights or other rights of third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the MSKSEMI Semiconductor product that you intend to use.