

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## AZ5123-01H-MS

Product specification

**FEATURES**

- 80W peak pulse power per line (tP = 8/20μs)
- SOD-523 package
- Replacement for MLV(0603)
- Bidirectional configurations
- Protects one power or I/O port
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to  
IEC 61000-4-2(ESD)±30kV(air), ±30kV(contact);  
IEC 61000-4-4 (EFT) 40A (5/50ns)


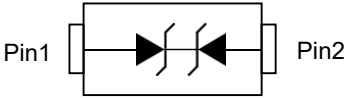

**Applications**

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

**Mechanical Characteristics**

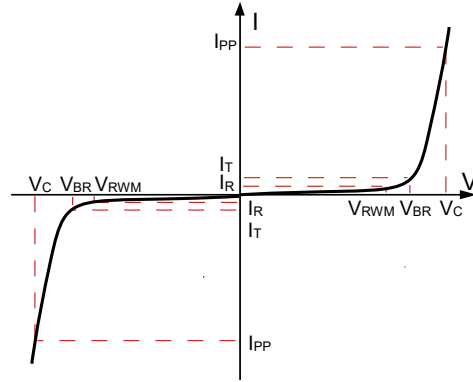
- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤3mil

**Reference News**

PACKAGE OUTLINE	PIN CONFIGURATION	Marking
 <p style="text-align: center;">SOD-523</p>		

**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.	Unit
Peak Reverse Working Voltage	$V_{RWM}$			3.3		V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	4.8		6.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$ $T=25^\circ C$			1.0	$\mu A$
Clamping Voltage <sup>1)</sup>	$V_C$	$TLP = 16A,$ $t = 100ns$		9.0		V
Dynamic resistance <sup>1)</sup>	$R_{DYN}$			0.15		$\Omega$
Clamping Voltage <sup>2)</sup>	$V_C$	$I_{PP}=8A$		8	10	V
Junction Capacitance	$C_J$	$V_R=0V$ $f = 1MHz$		33		pF

**Notes:**

1. TLP parameter:  $Z_0=50\Omega$ ,  $t_p=100ns$ ,  $t_r=2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.
2. Non-repetitive current pulse, according to IEC61000-4-5.

**Absolute maximum rating@25°C**

Rating	Symbol	Value	Unit
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**

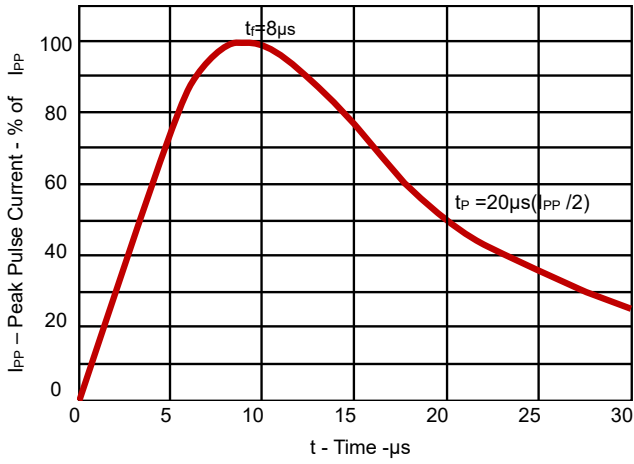


Fig 1. Pulse Waveform

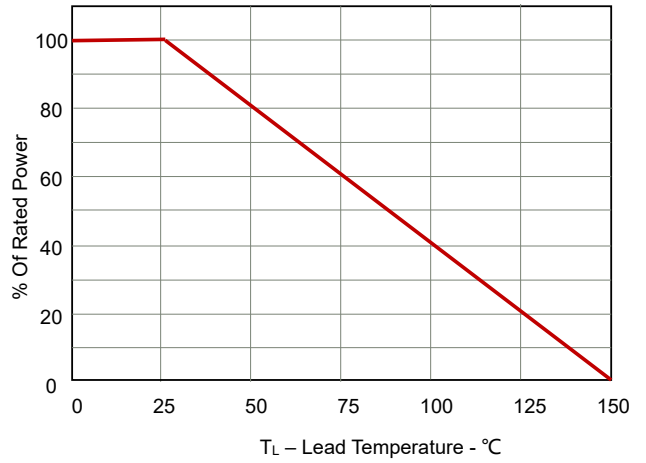


Fig 2. Power Derating Curve

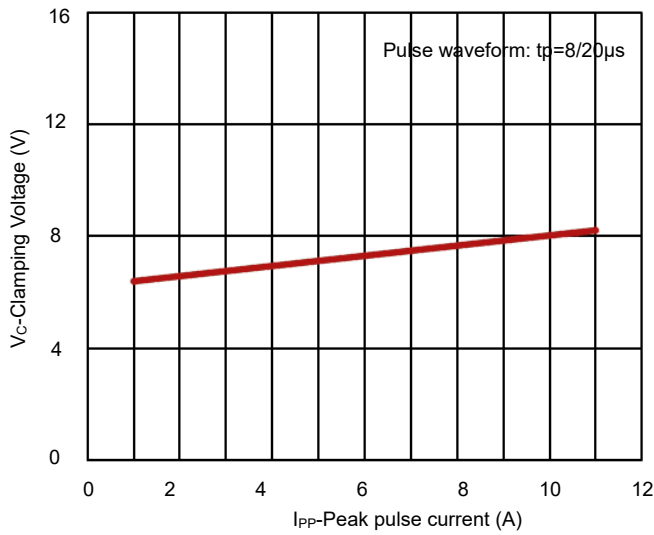


Fig 3. Clamping voltage vs. Peak pulse current

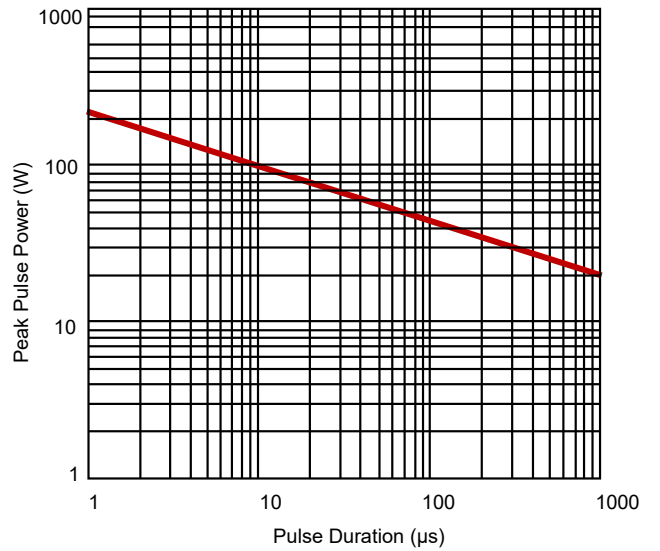


Fig 4. Non Repetitive Peak Pulse Power vs. Pulse time

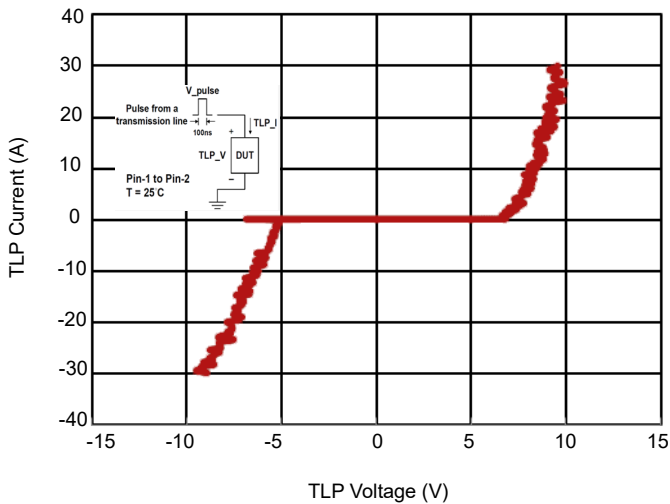


Fig 5. TLP Measurement

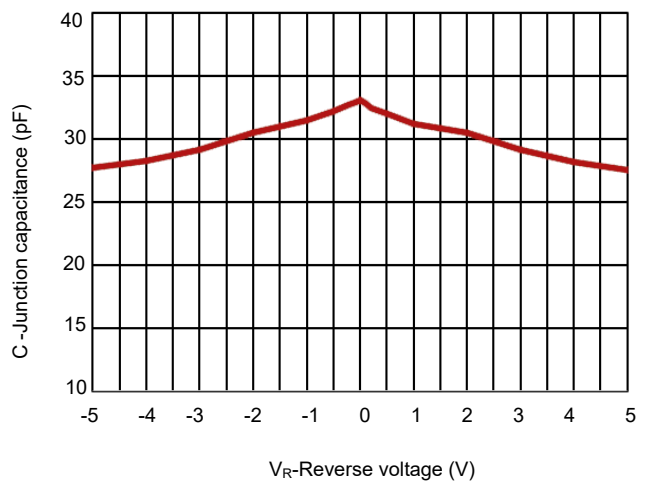


Fig 6. Capacitance vs. Reverse voltage

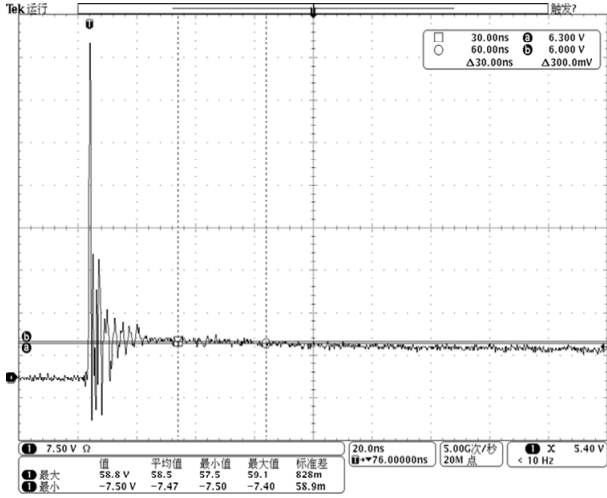


Fig7.ESD Clamping voltage  
(IEC61000-4-2 +8kV contact)

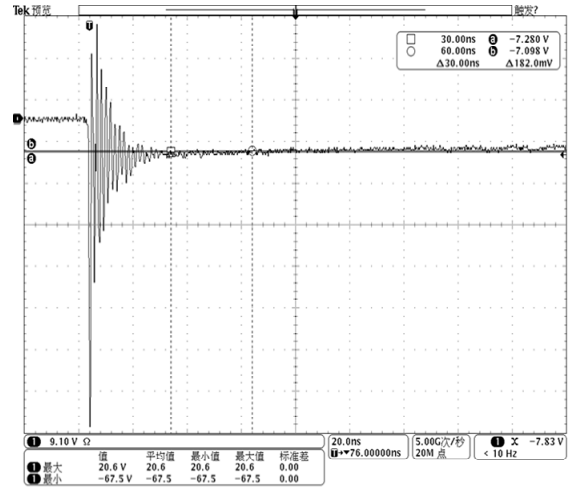
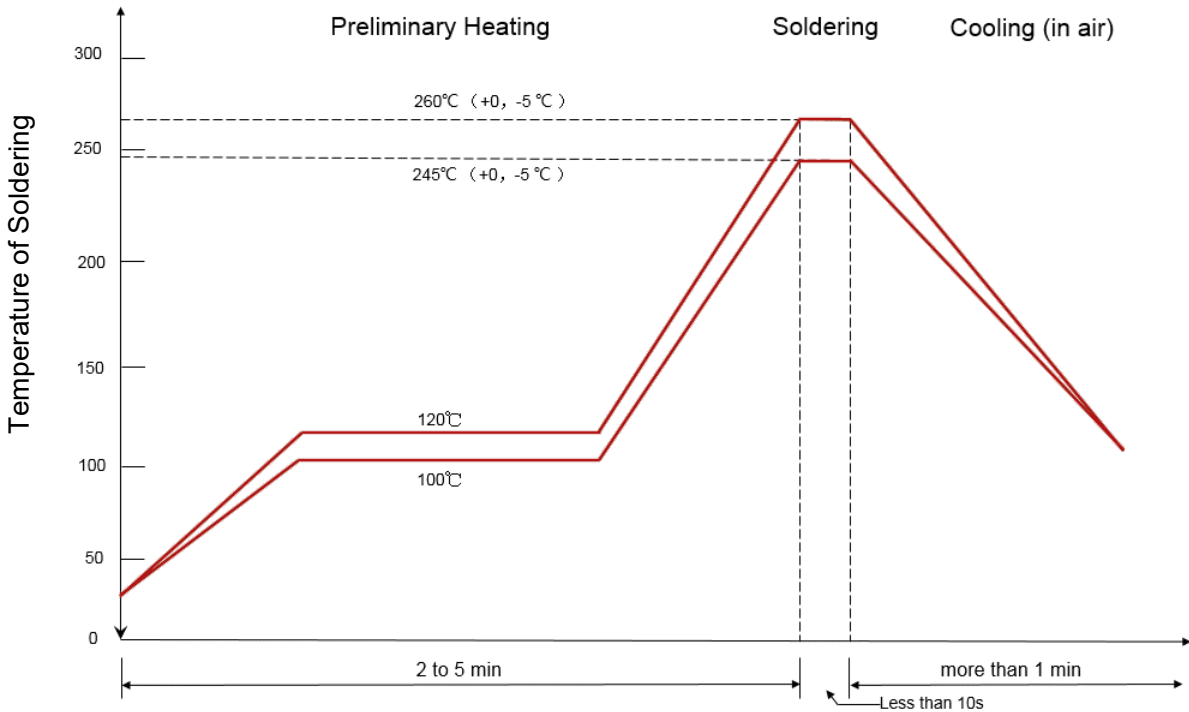


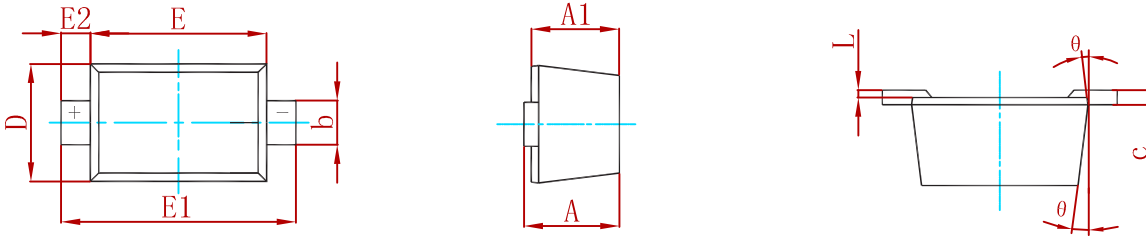
Fig8.ESD Clamping voltage  
(IEC61000-4-2-8kV contact)

**Solder Reflow Recommendation**



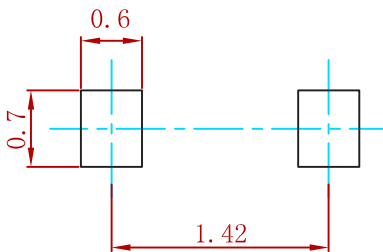
Remark: Pb free for 260°C; Pb for 245°C.

**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05mm.
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
AZ5123-01H-MS	SOD-523	3000

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