

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

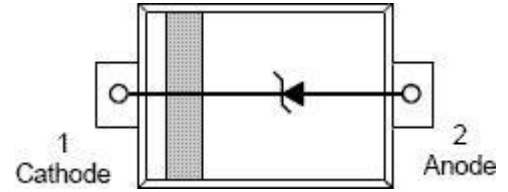
Product data sheet

**Applications**

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

**Features**

- Small Body Outline Dimensions
- Low Body Height
- Stand-off Voltage: 2.5V-12V
- Peak Power up to 200 Watts @ 8 x 20\_sPulse
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection
- We declare that the material of product compliance with RoHS requirements.



**SOD-523**

**Electrical Characteristics** Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

Device	V <sub>RWM</sub> (V)	I <sub>R</sub> (uA) @ V <sub>RWM</sub>	V <sub>BR</sub> (V)@ I <sub>T</sub> (Note 1)	I <sub>T</sub>	V <sub>C</sub> (V) @ I <sub>PP</sub> =5 A*	V <sub>C</sub> (V) @ Max I <sub>PP</sub> *	I <sub>PP</sub> (A)*	P <sub>PK</sub> (W)*	C (pF)
	Max	Max	Min	mA	Typ	Max	Max	Max	Typ
MSPESD5Z2.5	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
MSPESD5Z3.3	3.3	1.0	5.0	1.0	8.4	14.1	11.2	158	105
MSPESD5Z5.0	5.0	1.0	6.2	1.0	11.6	18.6	9.4	174	80
MSPESD5Z6.0	6.0	1.0	6.8	1.0	12.4	20.5	8.8	181	70
MSPESD5Z7.0	7.0	1.0	7.5	1.0	13.5	22.7	8.8	200	65
MSPESD5Z12	12	1.0	13.5	1.0	25.5	30	5	150	55

\*Surge current waveform per Figure 1.

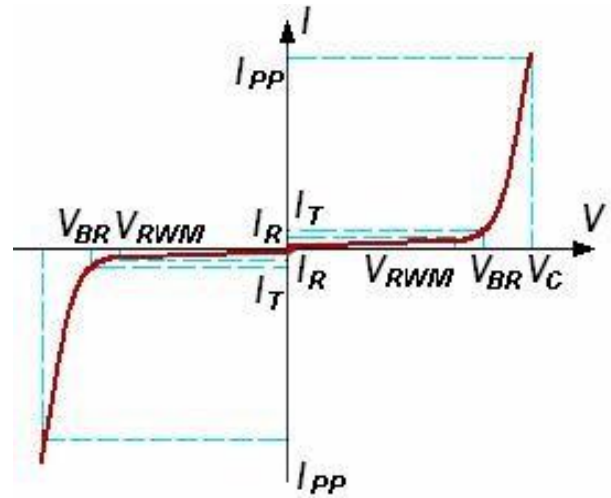
1. V<sub>BR</sub> is measured with a pluse test current I<sub>T</sub> at an ambient temperature of 25°C.

**Absolute Ratings (T<sub>amb</sub>=25°C )**

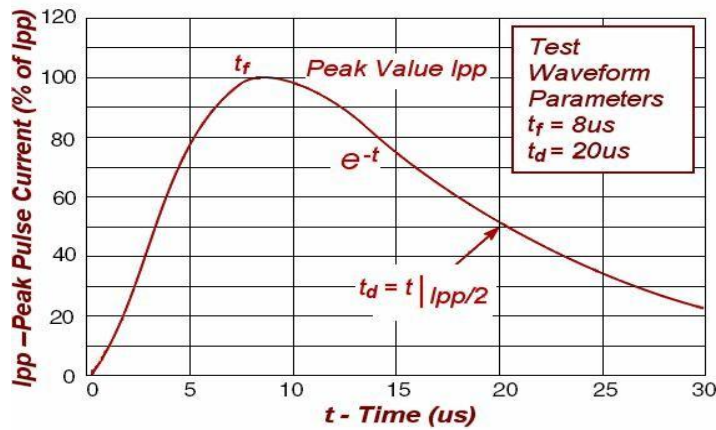
Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20µs)	200	W	
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C	
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C	
T <sub>j</sub>	Maximum junction temperature	150	°C	
	IEC61000-4-2 (ESD)	air discharge contact discharge	± 15 ± 8	KV
	IEC61000-4-4 (EFT)		40	A
	ESD Voltage	Per Human Body Model	16	KV

**Electrical Parameter**

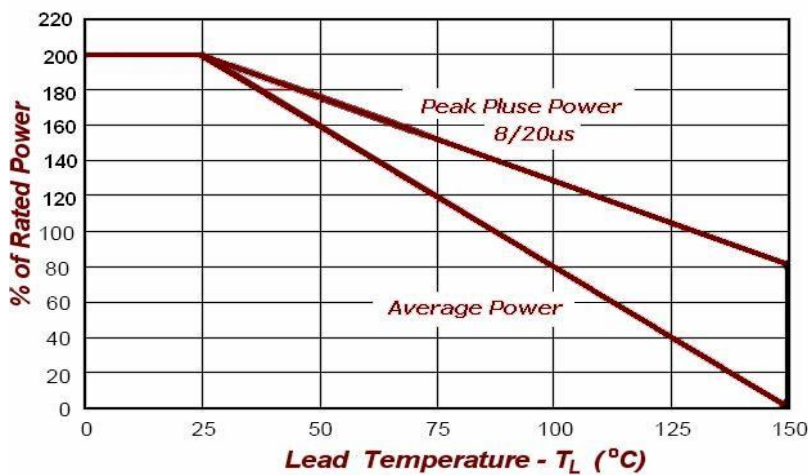
Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$



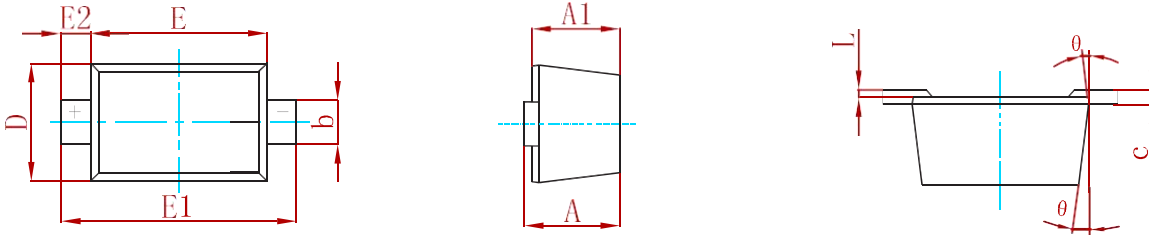
**FIG1: Pulse Waveform**



**FIG2: Power Derating**

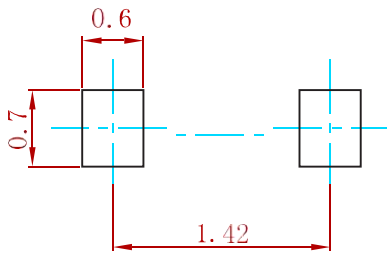


**PACKAGE MECHANICAL DATA**



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
0	7° REF		7° REF	

**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
MSPESD5ZXX	SOD-523	3000

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