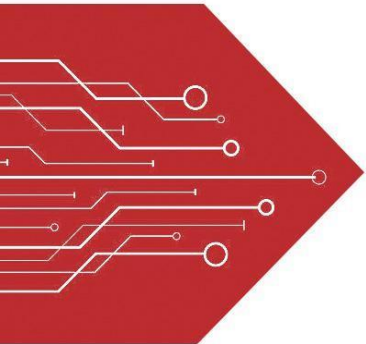


# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

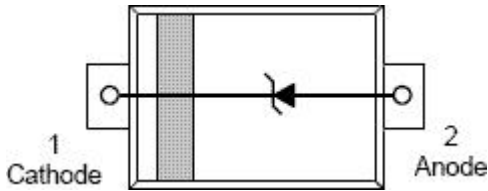


PLED

Product data sheet



**SOD-523**



**Applications**

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

**Features**

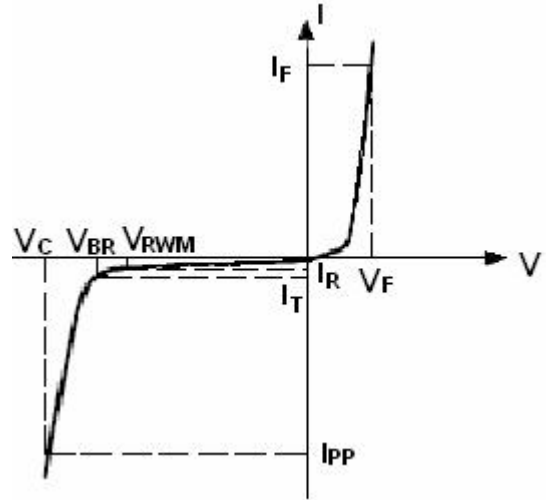
- Small Body Outline Dimensions
- Low Body Height
- Stand-off Voltage: 2.5 V – 12 V
- Peak Power up to 200 Watts @ 8 x 20  $\mu$ s Pulse
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

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

Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 $\mu$ s)	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	$\pm 15$ $\pm 8$	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 @ $I_T$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



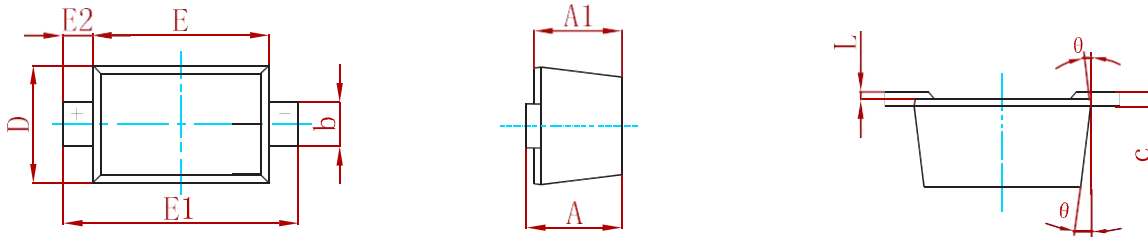
**Electrical Characteristics** Ratings at 25°C ambient temperature unless otherwise specified.  $V_F = 0.9V$  at  $I_F = 10mA$

P/N	Marking	$V_{RWM}$	$I_R(\mu A)$	$V_{BR}(V)@ I_T$	$I_T$	$V_C(V)$	$V_C(V)$	$I_{PP}$	$P_{PK}$	$C$
		(V)	@ $V_{RWM}$	(Note 1)		mA	@ $I_{PP}=5 A^*$			
		Max	Max	Min		Typ	Max	Max	Max	Typ
ESD5Z2.5T1G-MS	ZD	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
ESD5Z3.3T1G-MS	ZE	3.3	1.0	5.0	1.0	8.4	14.1	11.2	158	105
ESD5Z5.0T1G-MS	ZF	5.0	1.0	6.2	1.0	11.6	18.6	9.4	174	80
ESD5Z6.0T1G-MS	ZG	6.0	1.0	6.8	1.0	12.4	20.5	8.8	181	70
ESD5Z7.0T1G-MS	ZH	7.0	1.0	7.5	1.0	13.5	22.7	8.8	200	65
ESD5Z12T1G-MS	ZM	12	1.0	13.5	1.0	17	25	9.6	240	55

\*Surge current waveform per Figure 1.

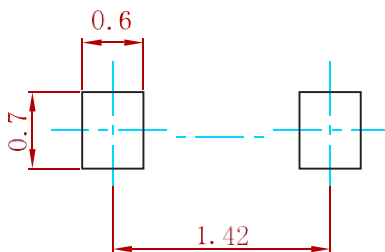
1.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.

**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:  $\pm 0.05$ mm.
  3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
ESD5ZXXXT1G-MS	SOD-523	3000

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