

# MSKSEMI

SEMICONDUCTOR



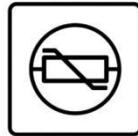
ESD



TVS



TSS



MOV



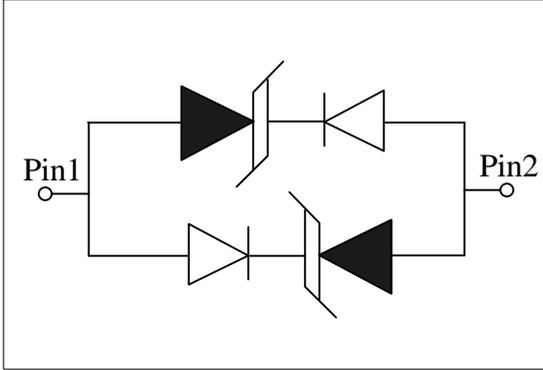
GDT



PLED

Product data sheet

## Schematic & PIN Configuration



SOD-523

## Features

- Small Body Outline Dimensions
- Low Body Height: 0.024" (0.6 mm) nom
- Bidirectional ESD protection of one I/O line
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- Solid-state silicon-avalanche technology

## IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)

## Mechanical Characteristics

- JEDEC SOD-523 package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

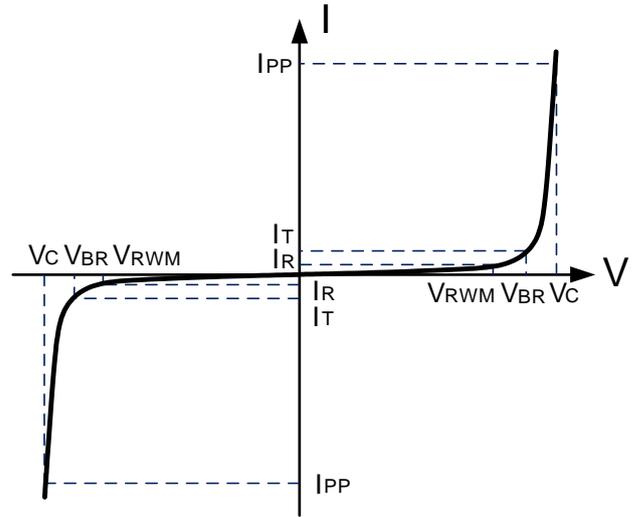
## Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 players

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Operating Temperature	$T_J$	-55 to + 125	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

**Electrical Parameters (T=25°C)**

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



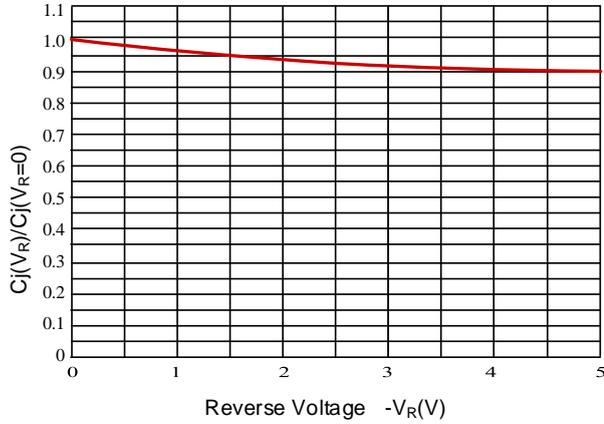
**Electrical Characteristics**

MS05D5UC-B						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	$V_{RWM}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	6.0		10.0	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5V, T=25^\circ C$			200	nA
ESD Clamping Voltage <sup>1</sup>	$V_C$	$I_{PP} = 4A$ $t_p = 0.2/100ns$		11.9		V
ESD Clamping Voltage <sup>1</sup>	$V_C$	$I_{PP} = 16A$ $t_p = 0.2/100ns$		23.4		V
Dynamic Resistance <sup>1,2</sup>	$R_{DYN}$	TLP=0.2/100ns		0.95		$\Omega$
Junction Capacitance	$C_j$	$V_R=0V, f=1MHz$		0.5	1.0	pF

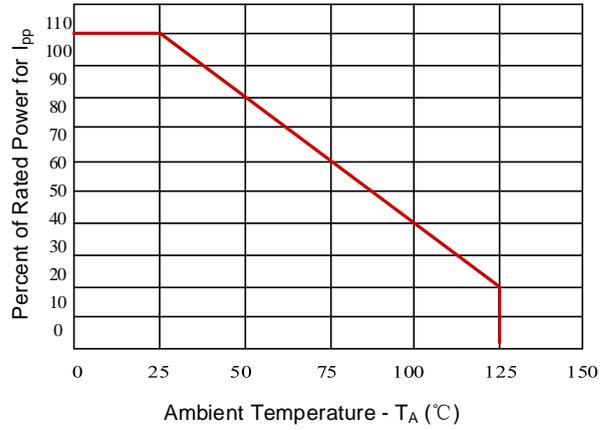
Notes : 1、 TLP Setting :  $t_p=100ns, t_r=0.2ns, I_{TLP}$  and  $V_{TLP}$  sample window: $t_1=70ns$  to  $t_2=90ns$ .  
 2、 Dynamic resistance calculated from  $I_{PP}=4A$  to  $I_{PP}=16A$  using "Best Fit".

## Typical Characteristics

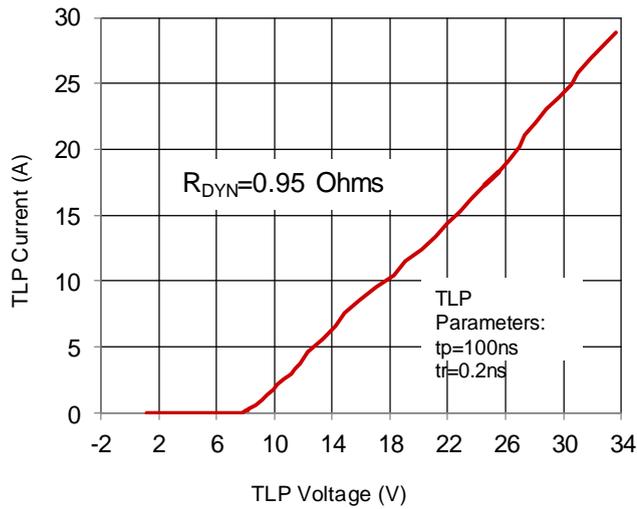
**Figure 1: Normalized Junction Capacitance vs. Reverse Voltage**



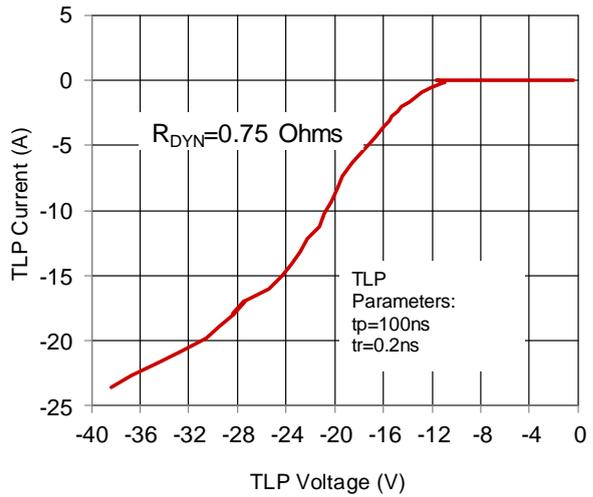
**Figure 2: Power Derating Curve**



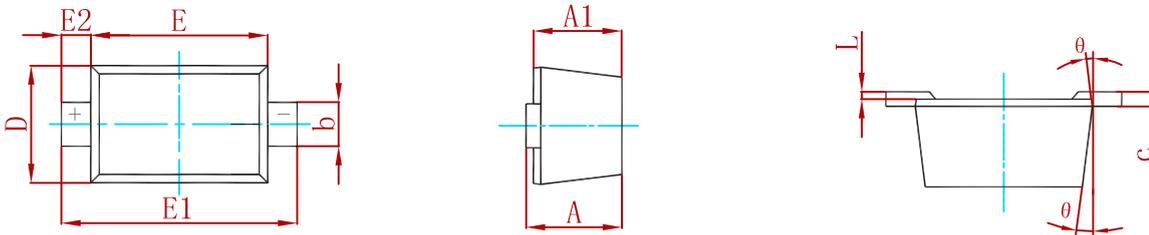
**Figure 3: TLP Positive I-V Curve**



**Figure 4: TLP Negative I-V Curve**

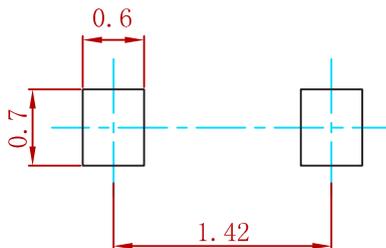


**PACKAGE MECHANICAL DATA**



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
MS05D5UC-B	SOD-523	3000

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