

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## ESDU5V0H4-MS

Product specification

## Description

The ESDU5V0H4-MS is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

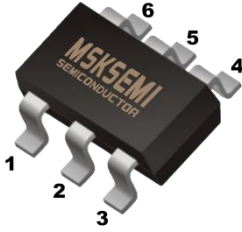
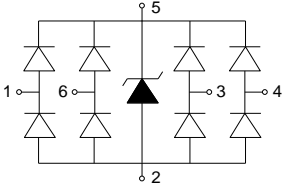

## Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±12kV Contact Discharge
  - ±17kV Air Discharge
- 60W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- RoHS compliant
- Protecting 4 unidirectional lines
- Ultra-low capacitance: 0.6pF Typ.

## Applications

- USB 2.0
- Monitors and flat panel displays
- 10/100/1000 ethernet
- Notebook computers
- SIM ports
- ATM interface

## Reference News

Outline	Circuit Diagram	Marking
 <p>SOT-23-6</p>		

## Pin Configuration and Functions

Pin	Name	Description	Pin	Name	Description
1	IO1	Connect to I/O	4	IO3	Connect to I/O
2	GND	Connect to GND	5	Vcc	Connect to Vcc
3	IO2	Connect to I/O	6	IO4	Connect to I/O

## Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

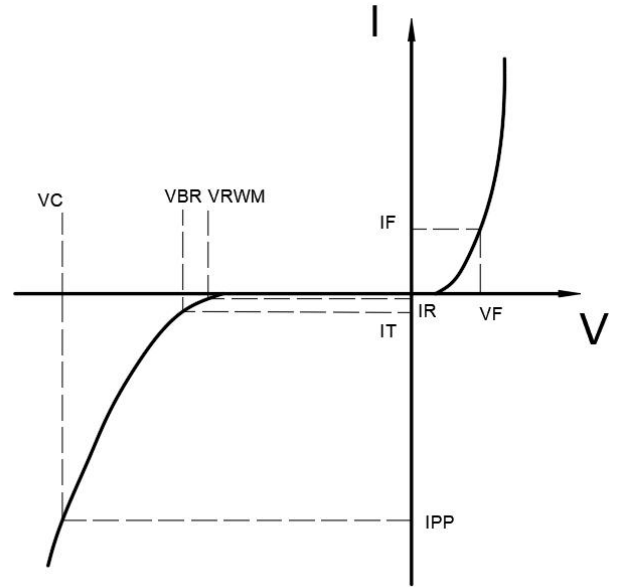
Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P <sub>pk</sub>	-	60	W
Peak pulse current (tp=8/20us)@25°C	I <sub>PP</sub>		4.5	A
ESD (IEC61000-4-2 air discharge) @25°C	V <sub>ESD</sub>	-	±17	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V <sub>ESD</sub>	-	±12	kV
Junction temperature	T <sub>J</sub>	-	150	°C
Operating temperature	T <sub>OP</sub>	-40	125	°C
Storage temperature	T <sub>STG</sub>	-55	150	°C
Lead temperature	T <sub>L</sub>	-	260	°C

## Electrical Characteristics

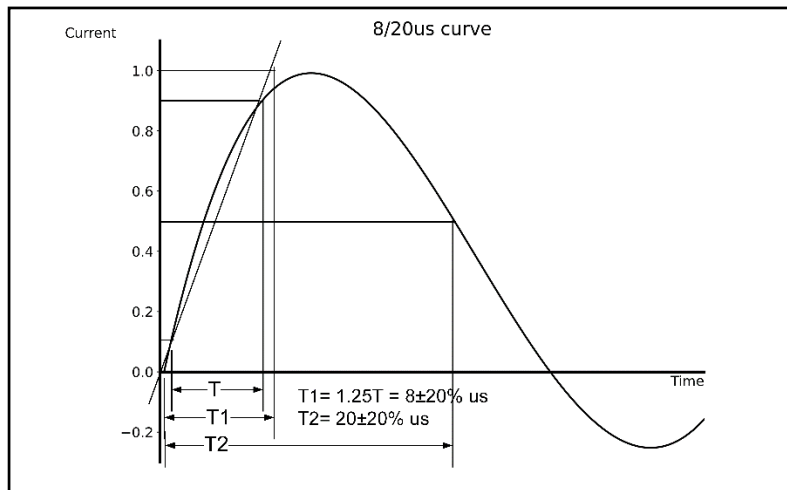
At TA = 25°C unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V <sub>RWM</sub>				5	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	6			V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =5V			1	uA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =1A; tp=8/20us		9		V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =4.5A; tp=8/20us		12		V
Junction Capacitance	C <sub>J</sub>	I/O to GND; VR=0V; f=1MHz		0.6	0.8	pF
		Between I/O; VR=0V; f=1MHz		0.3	0.4	pF

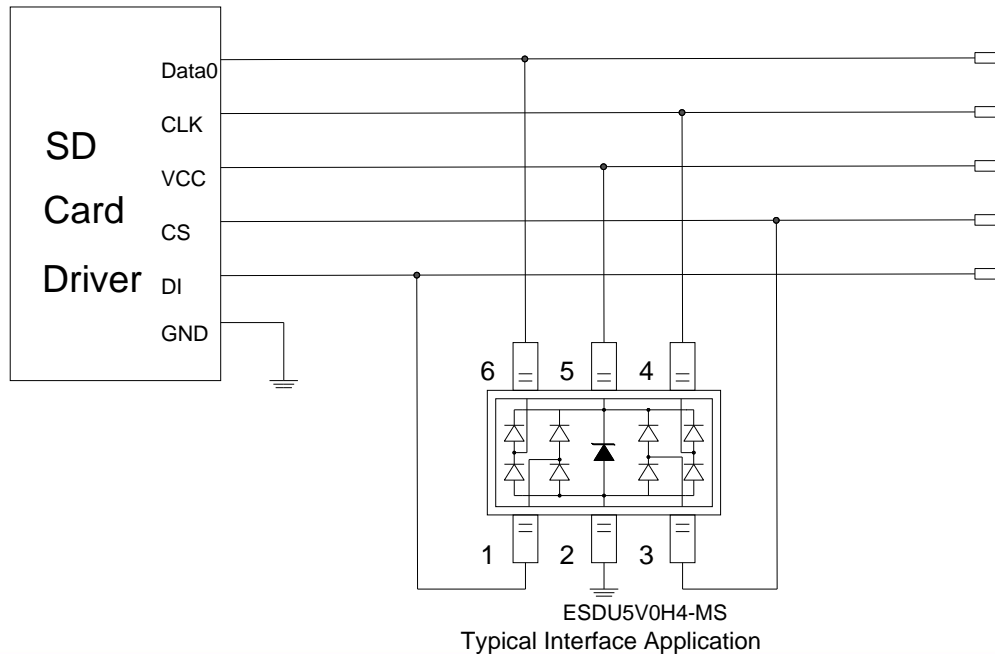
Symbol	Parameters
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_R$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



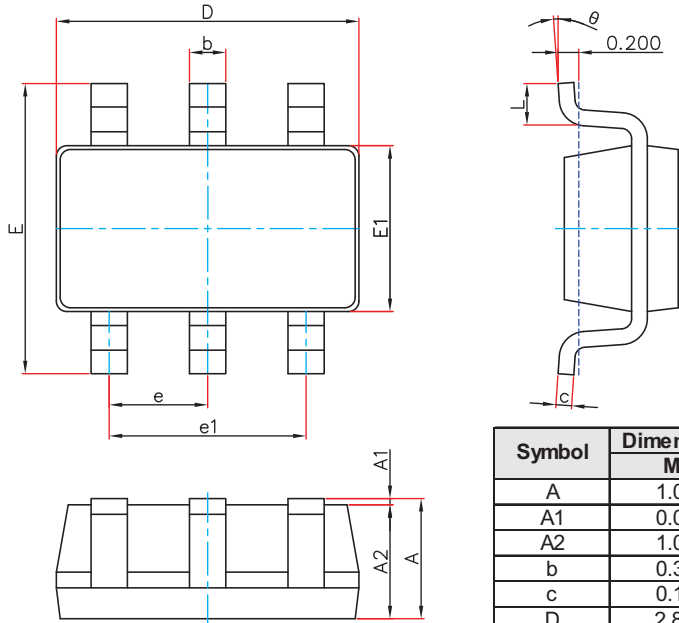
**Typical Characteristic**



**Typical Application**

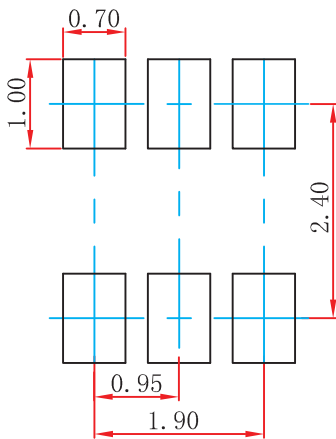


**SOT-23-6 Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

**SOT-23-6 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
ESDU5V0H4-MS	SOT-23-6	3000

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