

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

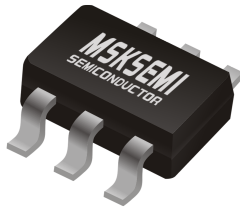


PLED

Product data sheet

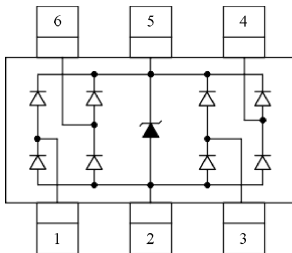
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## PACKAGE OUTLINE



SOT-23-6

## PIN CONFIGURATION



## FEATURES

- ✧ Transient protection for high-speed data lines  
IEC 61000-4-2(ESD)  $\pm 20\text{KV}$ (Contact)  
 $\pm 25\text{KV}$ (Air)  
IEC 61000-4-4(EFT) 40A(5/50ns)
- ✧ Package optimized for high-speed lines
- ✧ Small package(2.9mm\*2.8mm\*1.1mm)
- ✧ Protects four data lines and one Vcc line
- ✧ Low capacitance: 0.20pF (I/O to I/O)
- ✧ Low leakage current
- ✧ Low clamping voltage
- ✧ Each I/O pin can withstand over 1000 ESD strikes for  $\pm 8\text{KV}$  contact discharge

## MACHANICAL DATA

- ✧ Flammability Rating: UL 94V-0
- ✧ Terminal: Matte tin plated.
- ✧ High temperature soldering guaranteed:
  - ✧ 260°C/10s
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch

## APPLICATIONS

- ✧ Serial ATA
- ✧ MDDI Ports
- ✧ USB 2.0/3.0 Power and Data Line Protection
- ✧ Display Ports
- ✧ High Definition Multi-Media Interface (HDMI)
- ✧ Digital Visual Interface (DVI)

**ABSOLUTE MAXIMUM RATING**

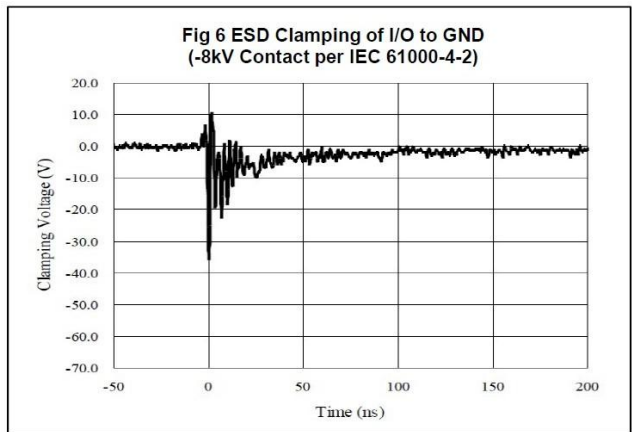
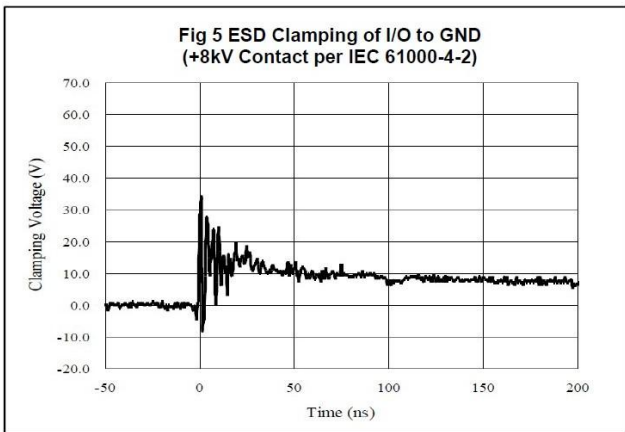
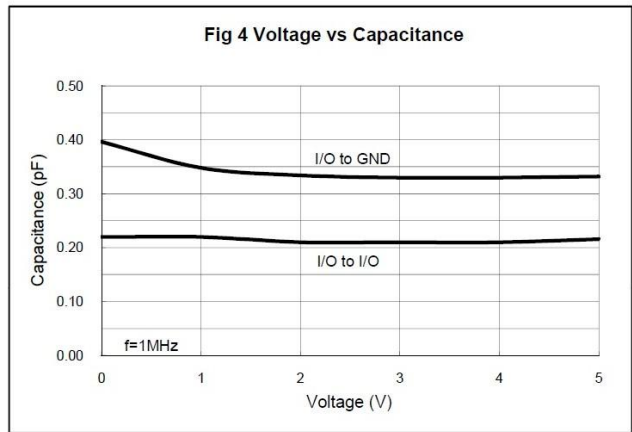
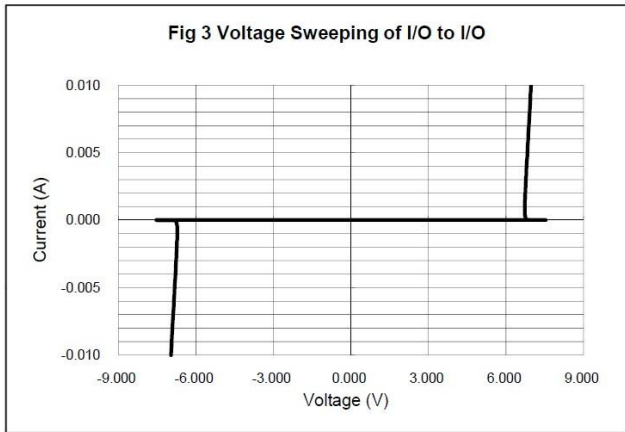
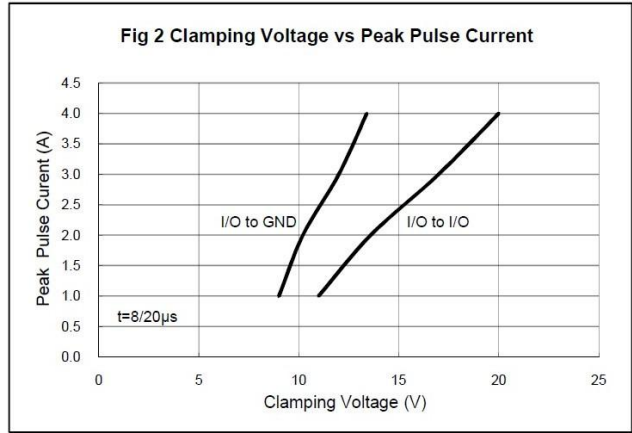
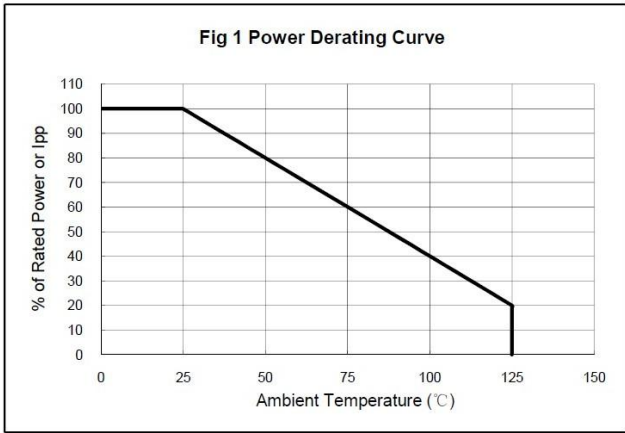
Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	60	W
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	±20 ±25	kV
T <sub>OPT</sub>	Operating Temperature	-55/+125	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C)**

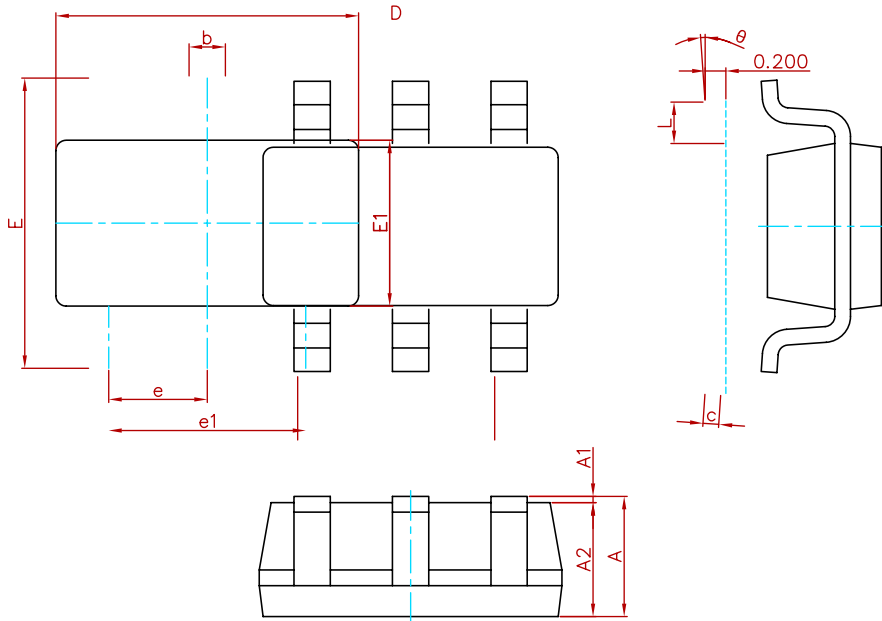
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA Any I/O pin to GND	6.0		9.0	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V Any I/O pin to GND			1.0	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs Any I/O pin to GND			10	V
		I <sub>PP</sub> = 4A, t <sub>p</sub> = 8/20μs Any I/O pin to GND			15	V
		I <sub>PP</sub> = 8A, t <sub>p</sub> = 8/20μs V <sub>CC</sub> pin to GND			15	V
C <sub>ESD</sub>	Parasitic Capacitance	V <sub>R</sub> = 0V, f = 1MHz Between I/O and I/O		0.20	0.30	pF
		V <sub>R</sub> = 0V, f = 1MHz Between I/O and GND		0.45	0.50	pF
		V <sub>R</sub> = 0V, f = 1MHz Between V <sub>CC</sub> and GND		0.80		pF

Note: I/O Pins are pin 1,3,4,6. Pin 5 is Vcc. Pin 2 is GND.

**ELECTRICAL CHARACTERISTICS CURVE**

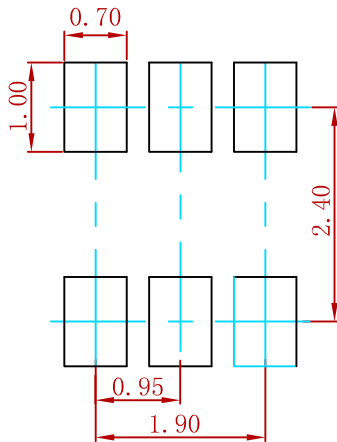


**PACKAGE MECHANICAL DATA**



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°

**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
SRV05-4-P-T7	SOT-23-6	3000

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