MSKSEMI
SEMICONDUCTOR

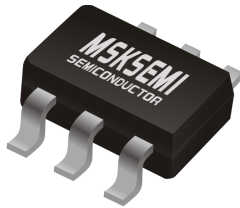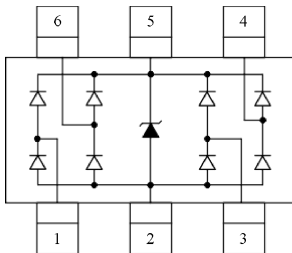|					
ESD	TVS	TSS	MOV	GDT	PLED

Product data sheet

PACKAGE OUTLINE

SOT-23-6

PIN CONFIGURATION

FEATURES

✧ Transient protection for high-speed data lines

IEC 61000-4-2(ESD)   ±20KV(Contact)

±25KV(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 ±8KV contact discharge

MACHANICAL DATA

✧ Flammability Rating: UL 94V-0

✧ Terminal: Matte tin plated.

✧ High temperature soldering guaranteed:

✧ 260℃/10s

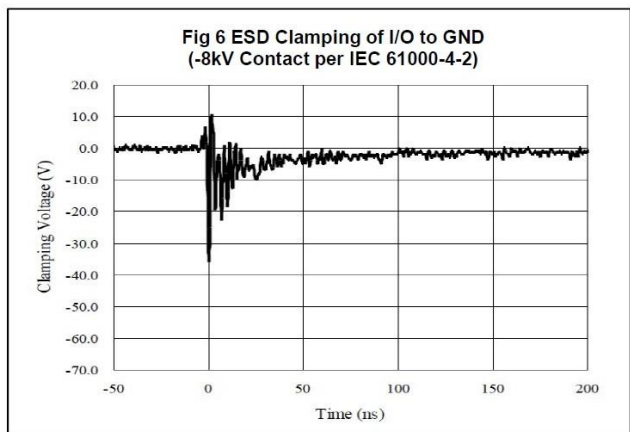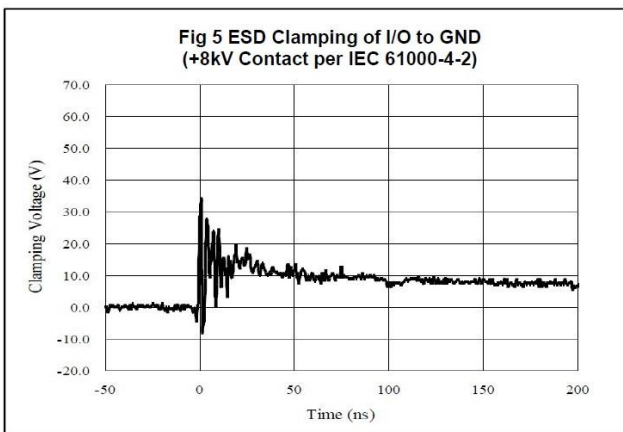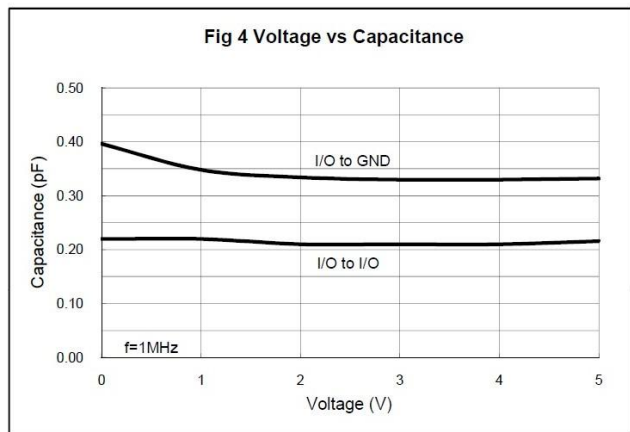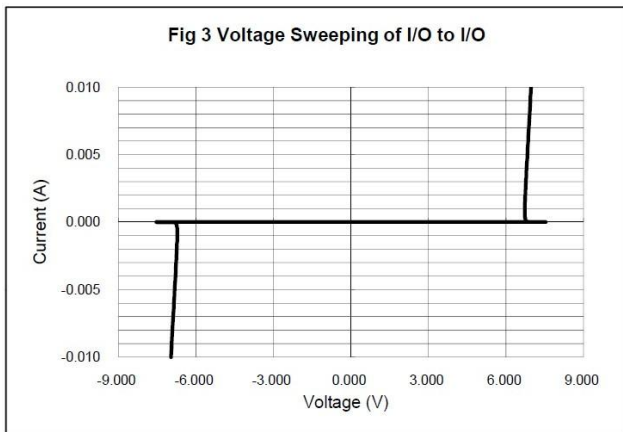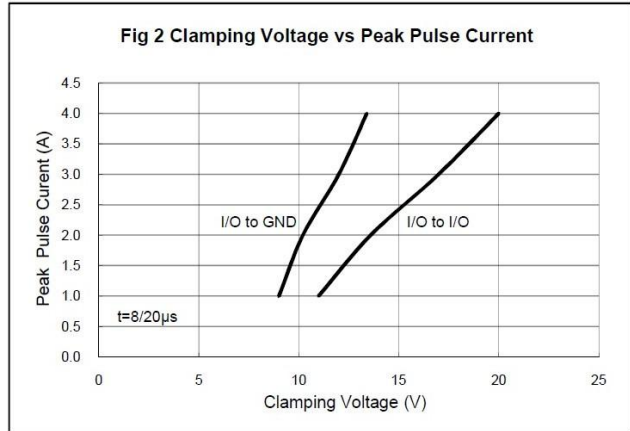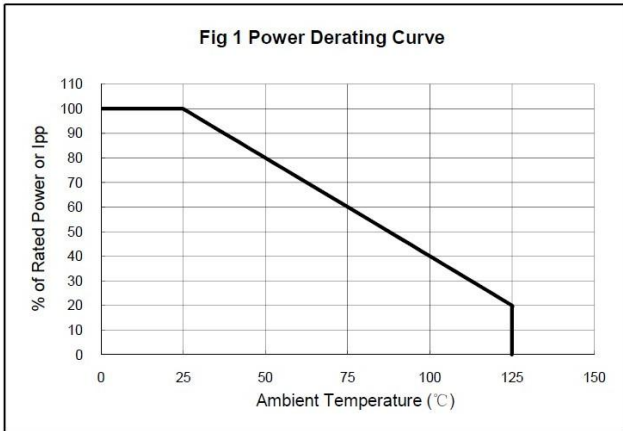✧ Packaging: Tape and Reel

✧ 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_{PP}	Peak Pulse Power (8/20µs)	60	W
V_{ESD}	ESD per IEC 61000-4-2 (Contact)	±20	kV
	ESD per IEC 61000-4-2 (Air)	±25	
T_{OPT}	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA Any I/O pin to GND	6.0		9.0	V
I_R	Reverse Leakage Current	V_{RWM} = 5V Any I/O pin to GND			1.0	µA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20µs Any I/O pin to GND			10	V
		I_{PP} = 4A, t_p = 8/20µs Any I/O pin to GND			15	V
		I_{PP} = 8A, t_p = 8/20µs Vcc pin to GND			15	V
C_{ESD}	Parasitic Capacitance	V_R = 0V, f = 1MHz Between I/O and I/O		0.20	0.30	pF
		V_R = 0V, f = 1MHz Between I/O and GND		0.45	0.50	pF
		V_R = 0V, f = 1MHz Between Vcc 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

Fig 1 Power Derating Curve

Fig 2 Clamping Voltage vs Peak Pulse Current

I/O to GND   I/O to I/O

t=8/20μs

Fig 3 Voltage Sweeping of I/O to I/O

Fig 4 Voltage vs Capacitance

I/O to GND

I/O to I/O

f=1MHz

Fig 5 ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)

Fig 6 ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)

PACKAGE MECHANICAL DATA
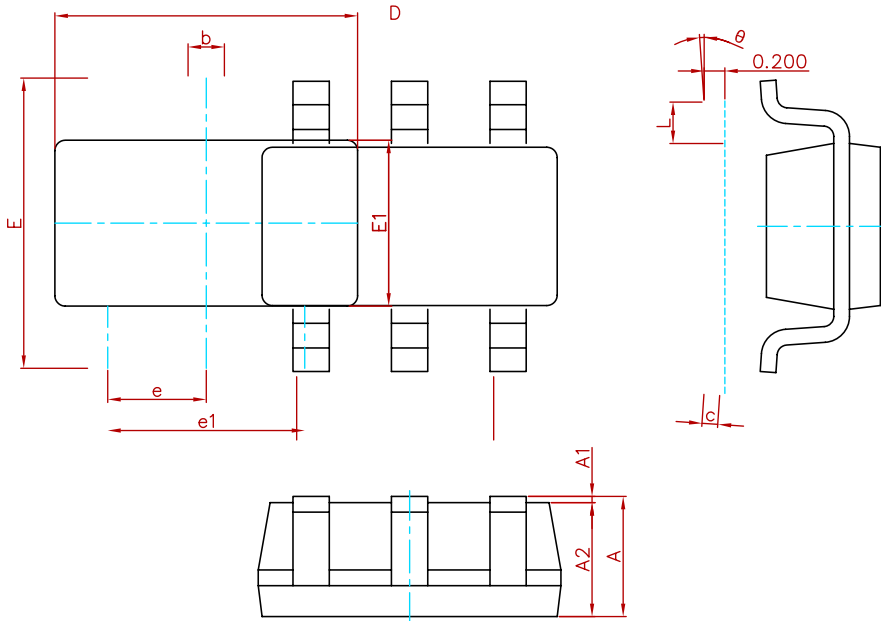
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		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
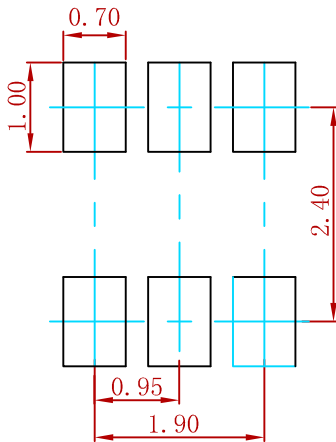
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
SRV05-4	SOT-23-6	3000

Attention

■ Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.

■ MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specificationsof any andall MSKSEMI Semiconductor products described orcontained herein.

■ Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer'sproducts orequipment.

■ MSKSEMI Semiconductor. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with someprobability. It is possiblethat these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits anderror prevention circuitsfor safedesign, redundant design, and structural design.

■ In the event that any or all MSKSEMI Semiconductor products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from theauthorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringementsof intellectual property rights or other rightsof third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. Whendesigning equipment, referto the "Delivery Specification" for the MSKSEMI Semiconductor productthat you intend to use.