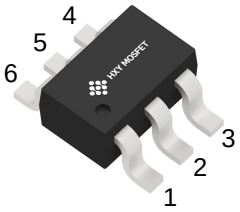
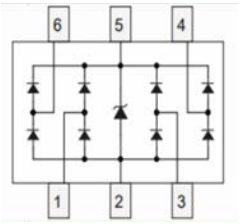
SRV05-4B
ESD PROTECTION DIODE

Discription

The SRV05-4B is a 5-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail.A zener diode is integrated in to the array between the positive and negative supply rails.In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.



SOT-23-6L



Circuit Diagram

Features

★ 5 channels of ESD protection
★ Provides ESD protectionto IEC61000-4-2 level 4
- ±27kV air discharge
- ±15kV contact discharge
★ Channel I/O to GND capacitance: 0.4pF(Max)
★ Channel I/O to I/O capacitance: 0.8pF(Max)
★ Low clampingvoltage
★ Low operating voltage
★ Improved zener structure
★ Optimized package for easyhigh speed data lines PCB layout
★ RoHS compliant.

Ordering Information

Product ID	Pack	Qty(PCS)
SRV05-4B	SOT-23-6L	3000

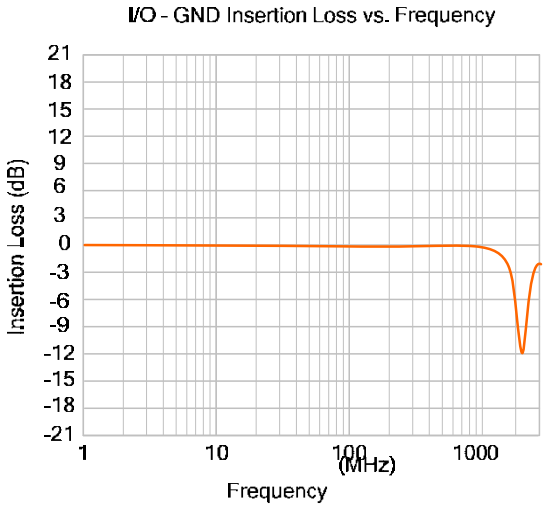
Absolute Ratings(Tamb = 25°C)

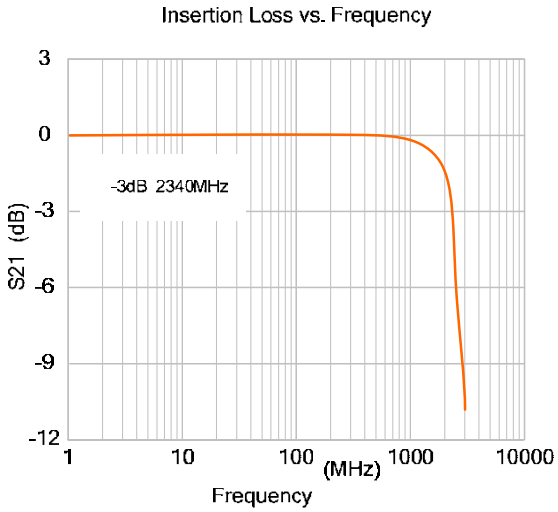
Characteristics	Symbol	Ratings	Unit
Peak Pulse Power(8/20μs)	P_{PP}	55	W
Peak Pulse Current(8/20μs)	I_{PP}	4	A
ESD per IEC 61000-4-2(Air)	V_{ESD1}	±20kV	kV
ESD per IEC 61000-4-2(Contact)	V_{ESD2}	±15kV	kV
Operating Temperature Range	Topr	-55 ~ +125	°C
Storage Temperature Range	Tstg	-55 ~ +150	°C

Electrical Characteristics (Tamb=25°C)

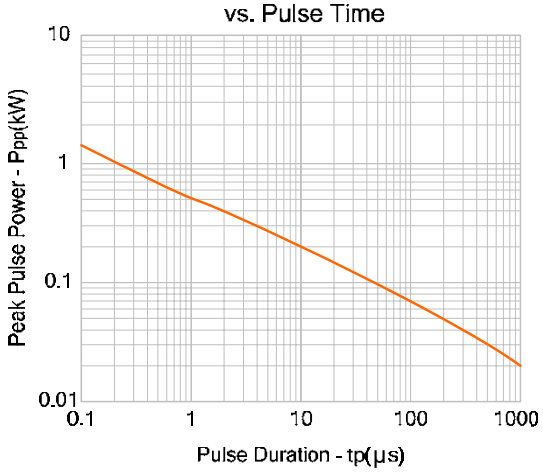
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND			5	V
Reverse Breakdown Voltage	V_{BR}	I_t=1mA; Any I/O pin to GND	6			V
Reverse Leakage Current	I_R	V_{RWM} =5V, T=25°C; Any I/O pin to GND			1	μA
Positive Clamping Voltage	V_{C1}	I_{PP}=4A, t_P=8/20μs; Positive pulse; Any I/O pin to GND		8.5	12.0	V
Negative Clamping Voltage	V_{C2}	I_{PP}=4A, t_P=8/20μs; Negative pulse; Any I/O pin to GND		1.8		V
Junction Capacitance Between Channel	C_{J1}	V_R=0V, f=1MHz; Between I/O pins		0.3	0.4	pF
Junction Capacitance Between I/O And GND	C_{J2}	V_R=0V, f=1MHz; Any I/O pin to GND		0.6	0.8	pF

Typical Characteristics

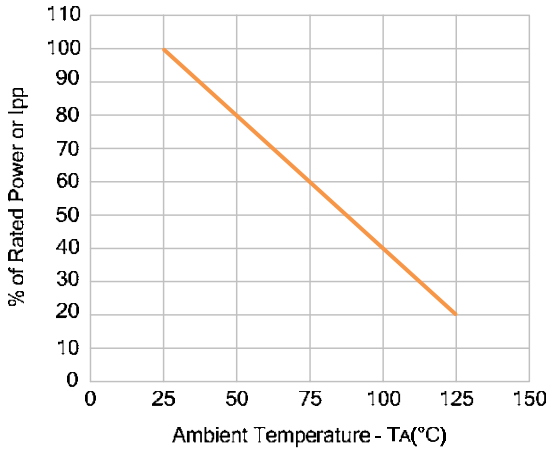




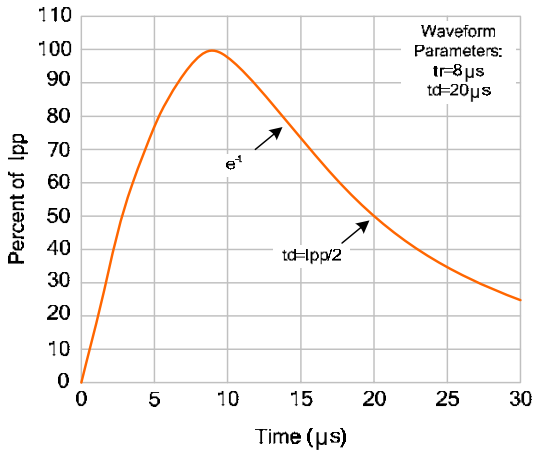
Non-Repetitive Peak Pulse Power vs. Pulse Time



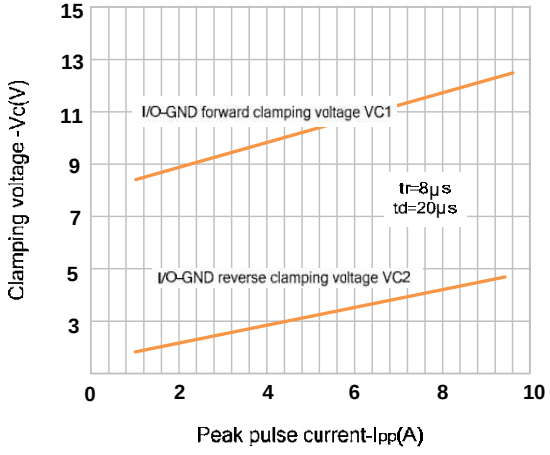
Power Derating Curve



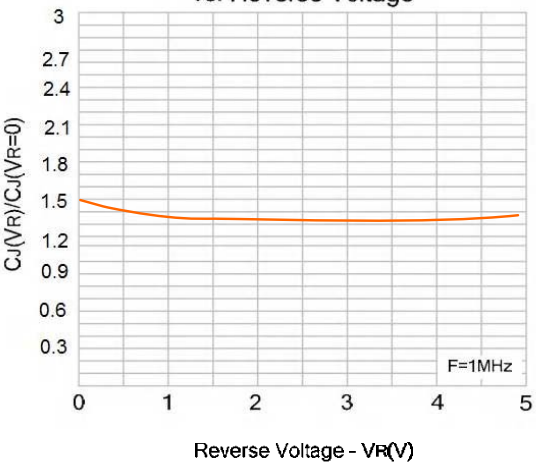
Pulse Waveform



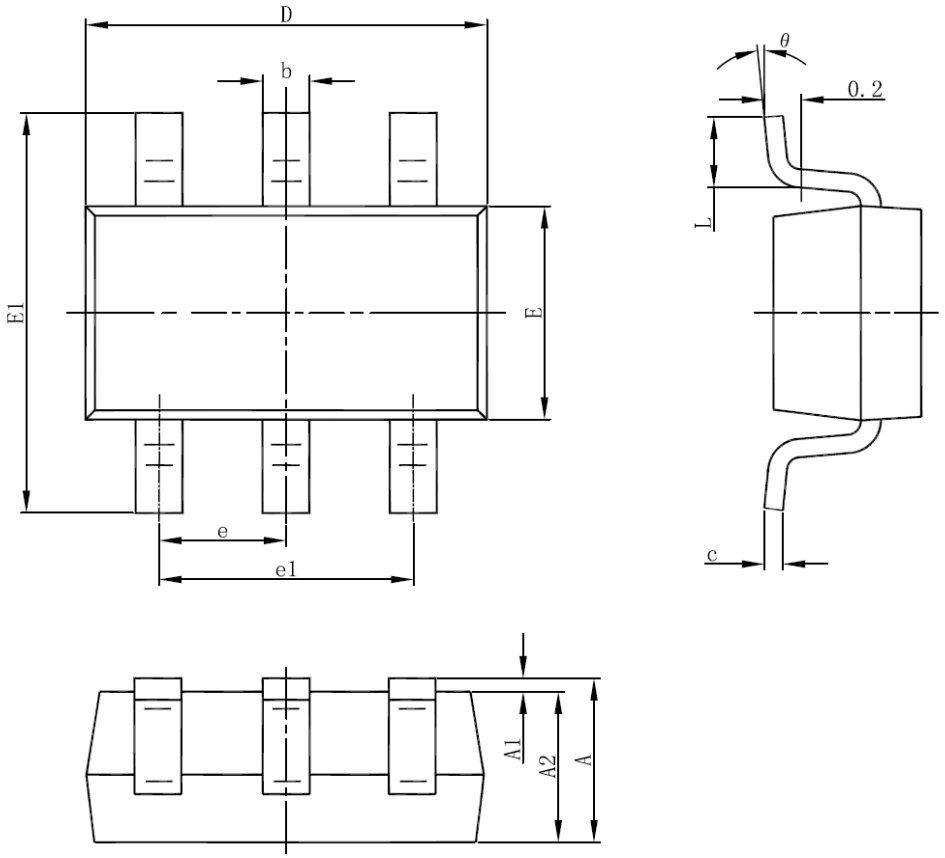
I/O GND clamping voltage vs peak pulse current



Normalized Capacitance vs. Reverse Voltage



SOT-23-6L Package Information



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
E	1.500	1.700	0.059	0.067
E1	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°

Attention

■ Any and all HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.

■ HUA XUAN YANG ELECTRONICS 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 specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.

■ Specifications of any and all HUA XUAN YANG ELECTRONICS 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's products or equipment.

■ HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that 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 and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all HUA XUAN YANG ELECTRONICS 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 the authorities 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 HUA XUAN YANG ELECTRONICS CO.,LTD.

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

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.