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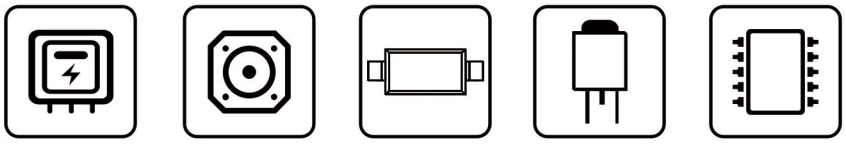
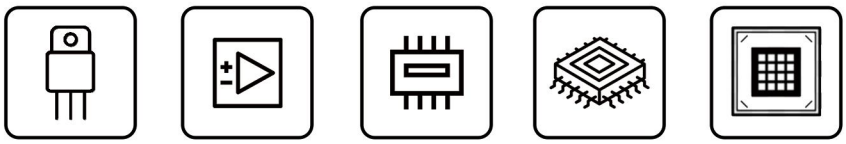


電源管理 顯示驅動 二三極管 LDO穩壓器 觸摸芯片



MOS管 運算放大器 存儲芯片 MCU 串口通信

SRV05-4

產品規格說明書

4-Line Uni-directional TVS Diode

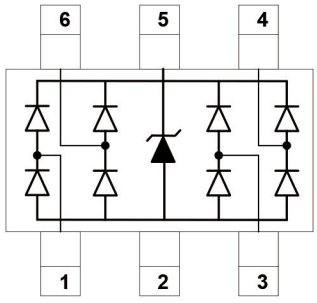
Description

The SRV05-4 is an ultra low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SRV05-4 has an ultra-low capacitance with a typical value at 0. 6 pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into a 6-pin lead-free SOT23-6 package. The combination of small size, ultra low capacitance, and high ESD surge capability make it ideal for use in applications such as multimedia, and other high speed ports.

Features

* Ultra low capacitance: 0. 6pF typical (I/O-GND)
* Ultra low leakage: nA level
* Low operating voltage: 5.0V
* Up to 4 data lines and one power line protects
* Low clamping voltage
* Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air : ±20kV; discharge: ±15kV
  – IEC61000-4-5 (Lightning) 4.5A (8/20μs)
* SOT23-6 Package
* RoHS Compliant

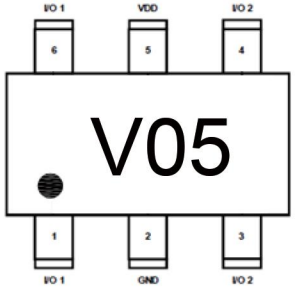
Circuit Diagram



Applications

* Monitors and flat panel displays
* Set-top box and Digital TV
* Video graphics cards
* Digital Video Interface (DVI)
* Notebook Computers
* PCI Express and Serial SATA Ports

Marking Diagram



Ordering Information

Part Number	Packaging	Reel Size
SRV05-4	3000/Tape & Reel	7 inch

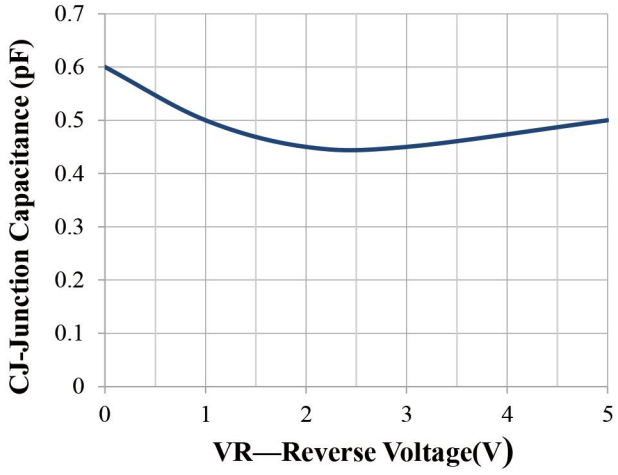
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs,I/O-GND)	Ppk	60	W
Peak Pulse Power (8/20μs,Vcc-GND)	Ppk	300	W
Peak Pulse Current (8/20μs,I/O-GND)	IPP	4.5	A
Peak Pulse Current (8/20μs,Vcc-GND)	IPP	17	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	$V_{ESD,VDD}$ $V_{ESD,I/O}$	±20 ±15	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

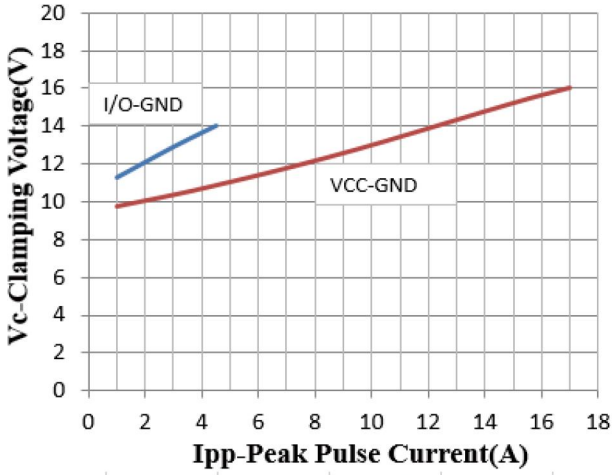
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND,I/O-GND			5. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA($_{Pin\ 5\ to\ GND,I/O-GND}$)	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	V_{RWM} = 5. 0V			0.5	μA
Forward Breakdown Voltage	V_F	I_F= 15mA,GND to Pin 5/IO		0.8	1.0	V
Clamping Voltage	V_C	IPP = 4.5A (8 x 20μs pulse, I/O to GND)		14.0	15.0	V
Clamping Voltage	V_C	IPP = 17A (8 x 20μs pulse,Pin 5 to GND)		16.0	18. 0	V
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-GND		0.6	0.7	pF
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-I/O pins		0.3	0.4	pF

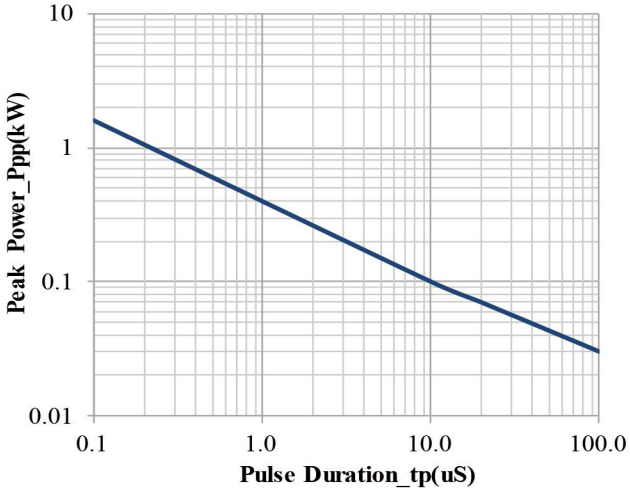
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



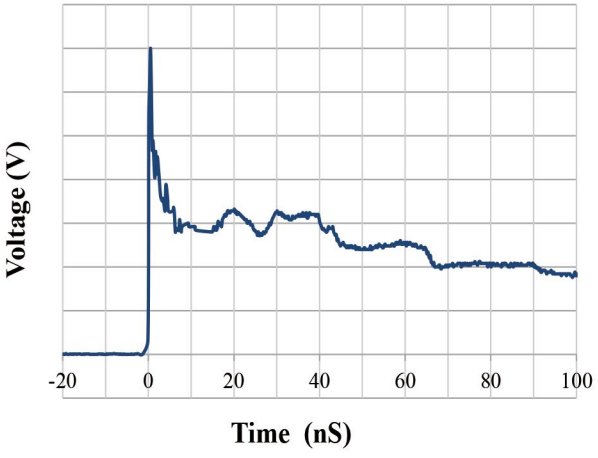
Junction Capacitance vs. Reverse Voltage



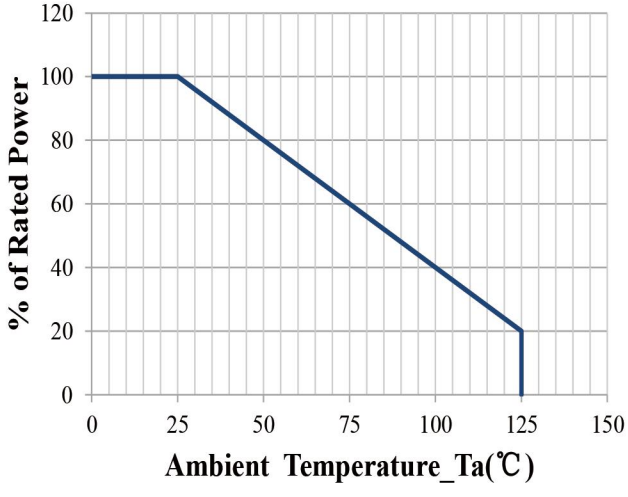
Clamping Voltage vs. Peak Pulse Current



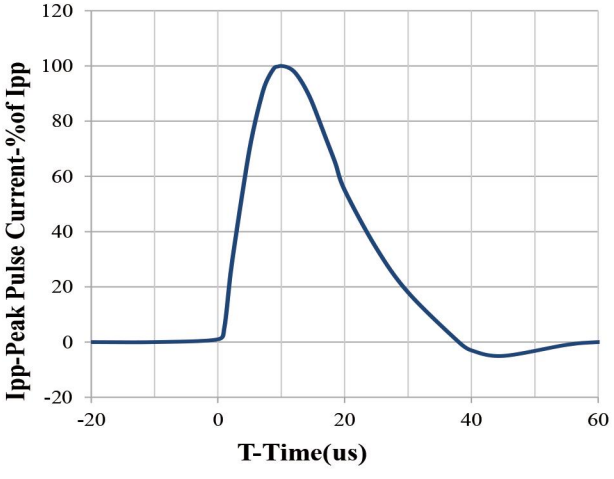
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

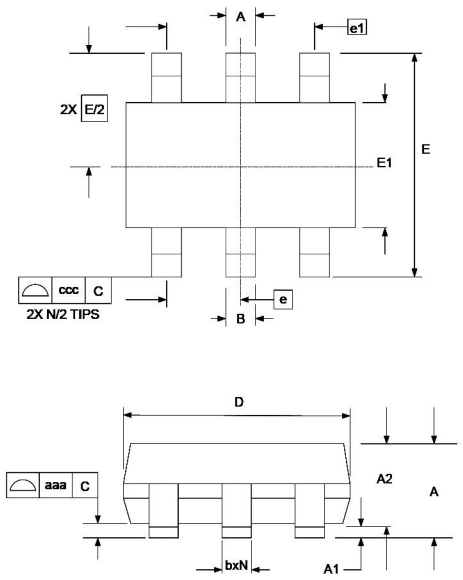


Power Derating Curve



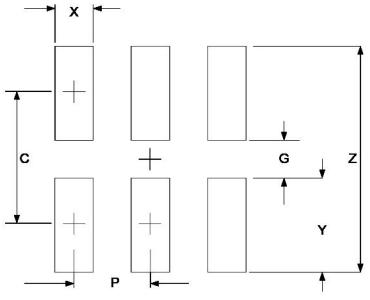
8 X 20us Pulse Waveform

SOT23-6 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141