

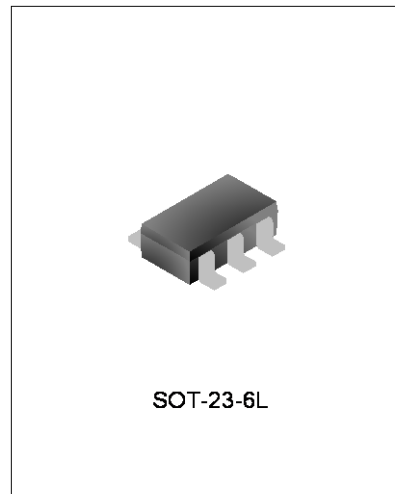
5-Channel Low Capacitance ESD Protection Diode Array

General Description

The GG199A6 is a 5-channel ultra low capacitance rail clamp ESD protection diode 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 a typical application, 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 a Zener diode and the positive ESD voltage is clamped to the Zener voltage.

The GG199A6 is ideal to protect high speed data lines.



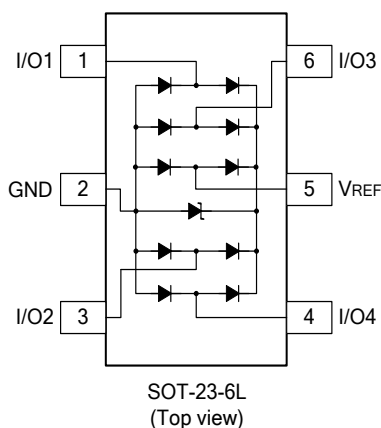
Features

- 5 channels of ESD protection
- Provides ESD protection to IEC61000-4-2 level 4
 - $\pm 17\text{kV}$ air discharge
 - $\pm 15\text{kV}$ contact discharge
- Channel I/O to GND capacitance: 1.5pF(Max)
- Channel I/O to I/O capacitance: 0.8pF(Max)
- Low clamping voltage
- Improved Zener structure
- SOT-23-6L package
- 5V Low operating voltage
- RoHS compliant

Applications

- HDMI / DVI ports
- 10M / 100M / 1G Ethernet
- USB 2.0 interface
- VGA interface
- Set-top box
- Flat panel Monitors / TV

Pin Configuration



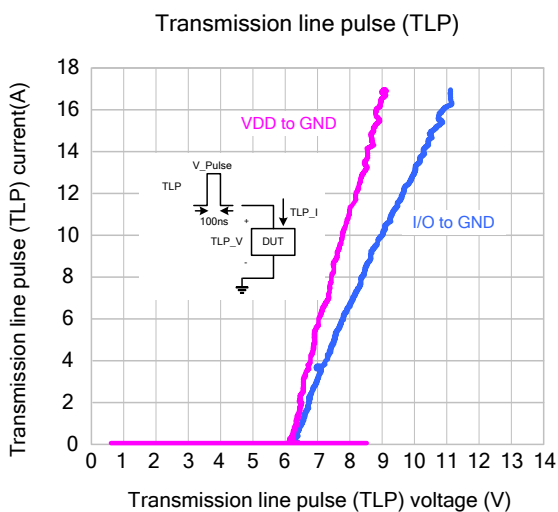
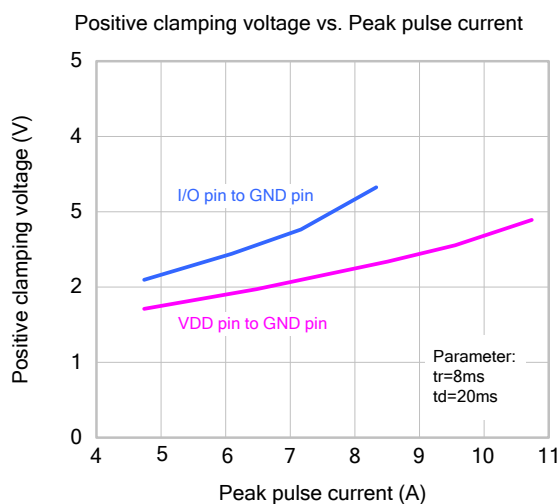
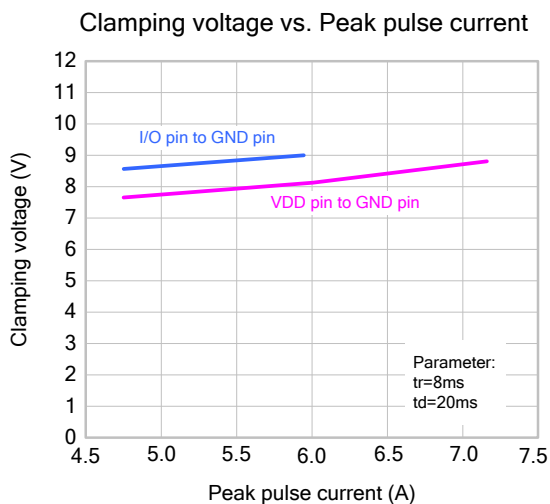
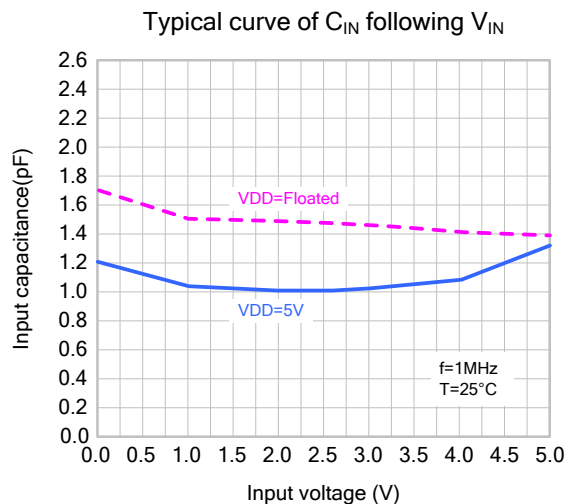
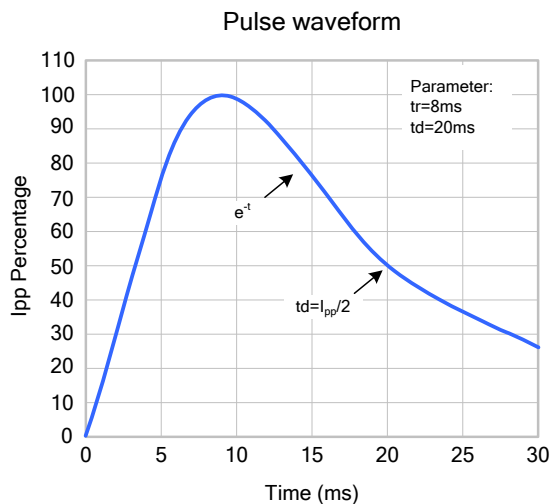
Absolute Maximum Ratings

Characteristics		Symbol	Rating	Unit
Peak Pulse Power(8/20μs)		P _{PP}	150	W
Peak Pulse Current(8/20μs)		I _{PP}	5	A
Maximum ESD Capability	IEC 61000-4-2(Air)	V _{ESD1}	±17kV	kV
	IEC 61000-4-2(Contact)	V _{ESD2}	±15kV	kV
Operating Temperature Range		T _{opr}	-55 ~ +125	°C
Storage Temperature Range		T _{stg}	-55 ~ +150	°C

Electrical Characteristics (T_{amb}=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} =1A, t _p =8/20μs; Positive pulse; Any I/O pin to GND	--	8.5	12.0	V
Negative Clamping Voltage	V _{C2}	I _{PP} =1A, 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	--	0.7	0.8	pF
Junction Capacitance Between I/O And GND	C _{J2}	V _R =0V, f=1MHz; Any I/O pin to GND	--	--	1.5	pF

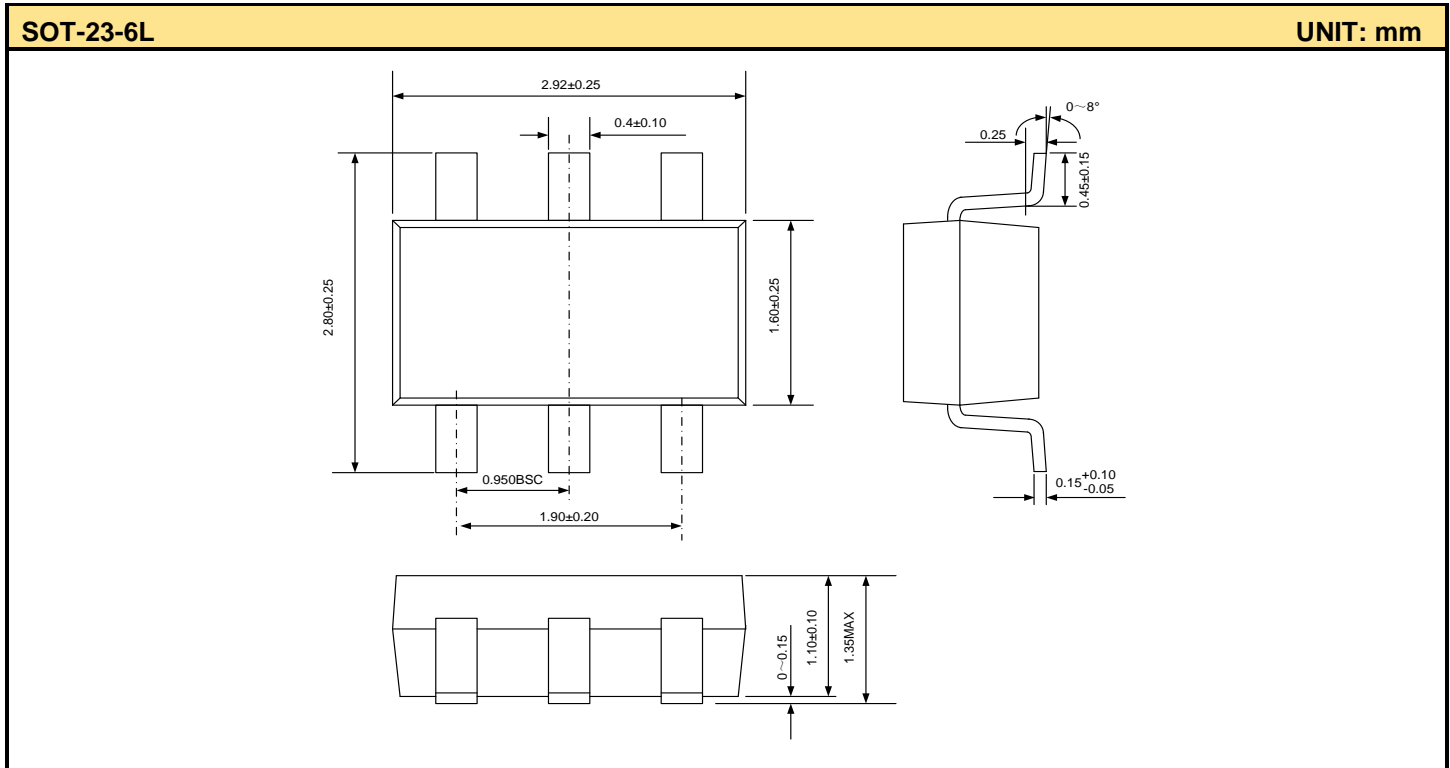
Typical Characteristics



Ordering Information

Part No	Package	Marking	Material	Packing
GG199A6	SOT-23-6L	45A6	Pb free	Tape&Reel

Package Outline



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