

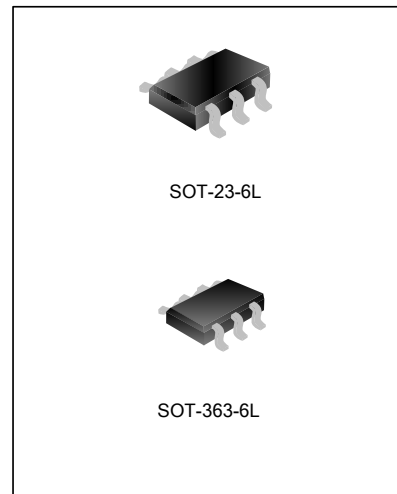
4 Channel Low Capacitance ESD Protection Diode Array

General Description

The GG4045 is a 4-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 into the array between the positive and negative supply rails.

In a 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 a Zener diode and the positive ESD voltage is clamped to the Zener voltage.

The GG4045 is ideal to protect high speed data lines. Two package types are provided for easy PCB layout.



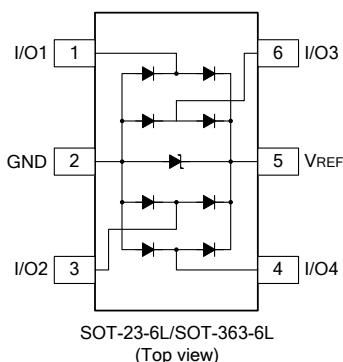
Features

- 4 channels of ESD protection
- Provides ESD protection to IEC61000-4-2 level 4
 - $\pm 15\text{kV}$ air discharge
 - $\pm 8\text{kV}$ contact discharge
- Channel I/O to GND capacitance: 0.6pF(Max)
- Channel I/O to I/O capacitance: 0.3pF(Max)
- Low clamping voltage
- Low operating voltage
- Improved Zener structure
- Optimized package for easy PCB layout of high speed data lines

Applications

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

Pin Configuration



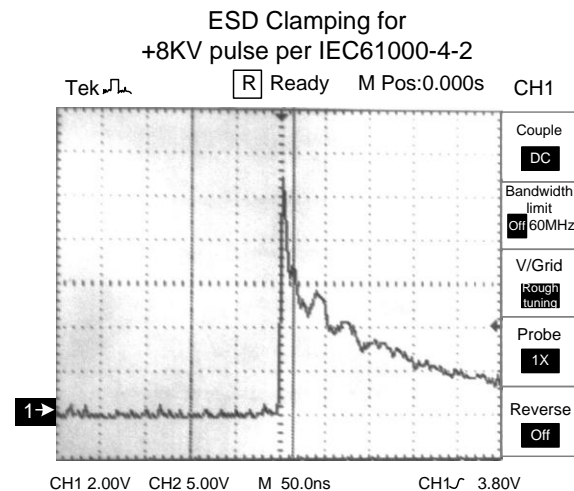
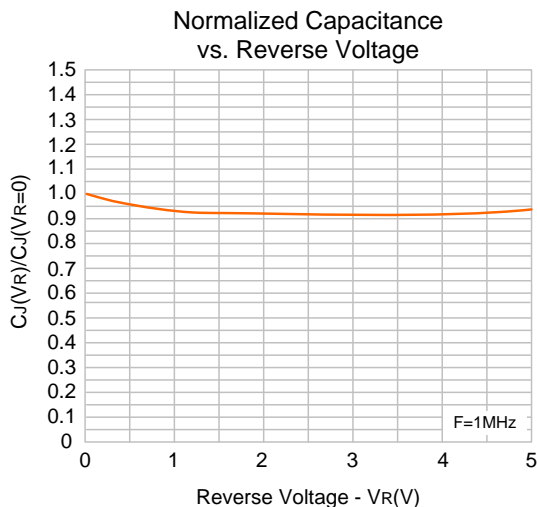
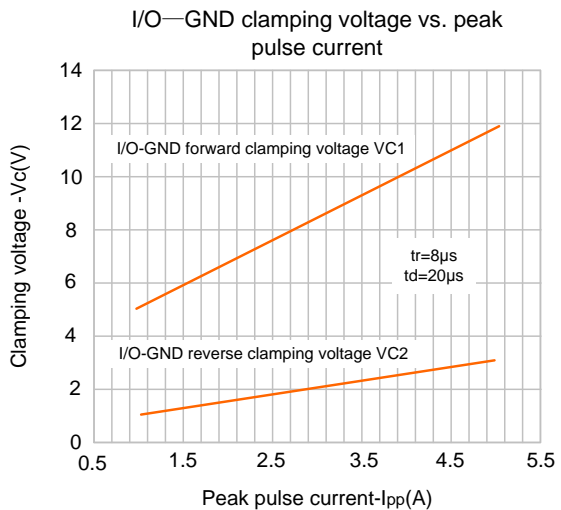
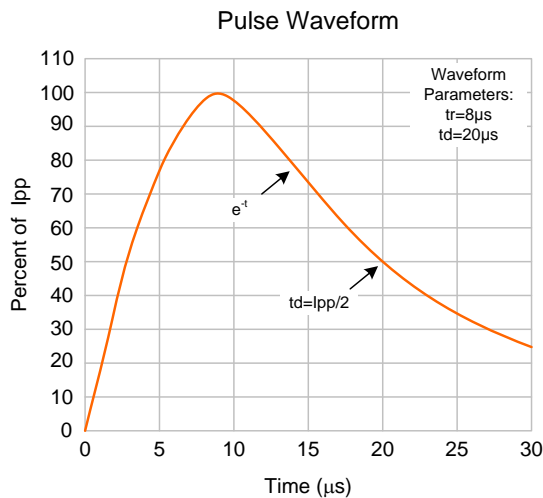
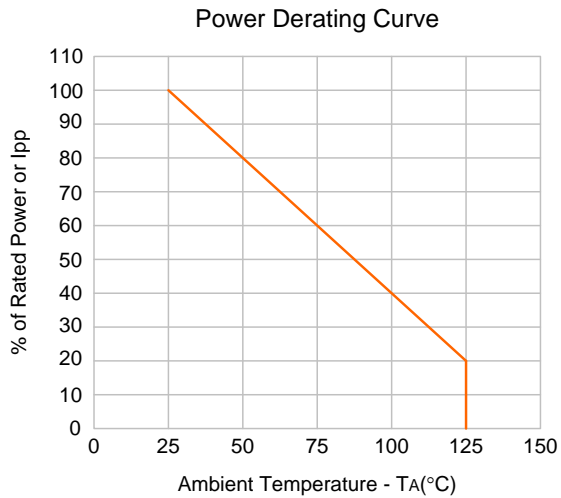
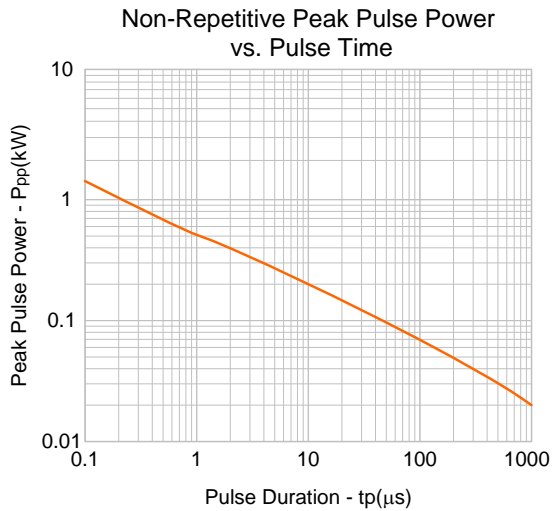
Absolute Maximum Ratings

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}	±15kV	kV
	IEC 61000-4-2(Contact)	V _{ESD2}	±8kV	kV
Operating Temperature Range		T _{opr}	-55 ~ +125	°C
Storage Temperature Range		T _{stg}	-55 ~ +150	°C

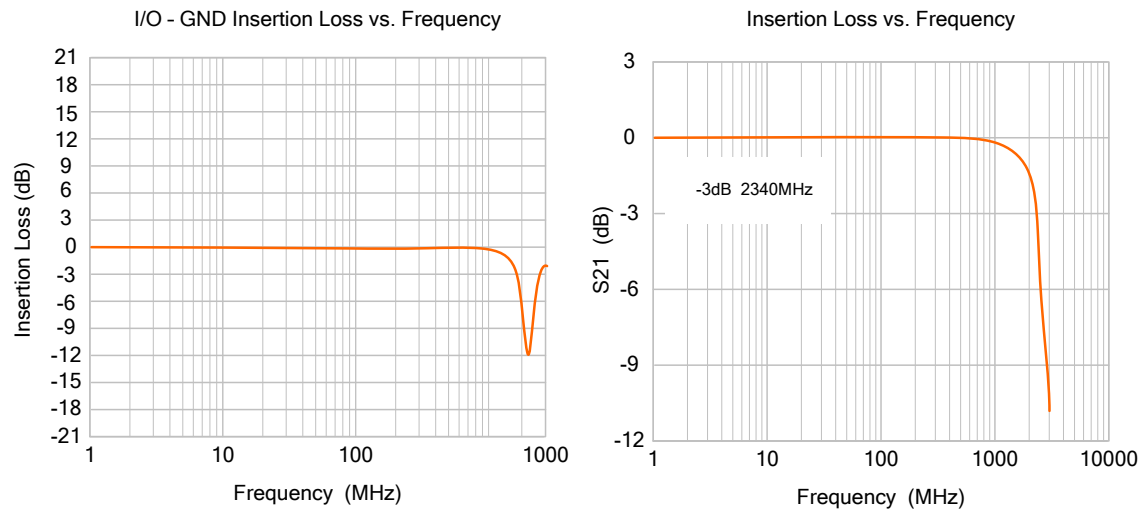
Electrical Characteristics (T_{amb}=25°C)

Characteristics	Symbol	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	--	0.25	0.3	pF
Junction Capacitance Between I/O And GND	C _{J2}	V _R =0V, f=1MHz; Any I/O pin to GND	--	0.5	0.6	pF

Typical Characteristics



Typical Characteristics (Continued)



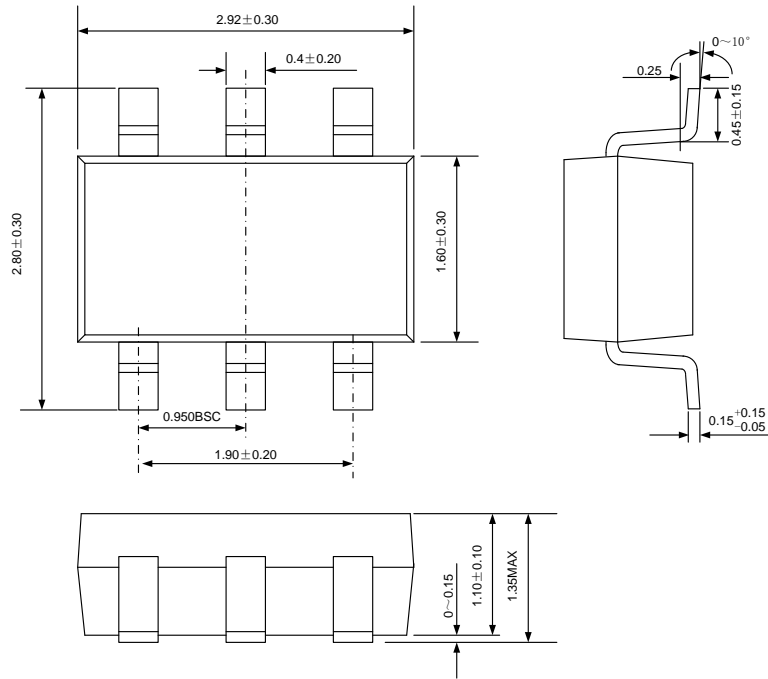
Ordering Information

Part No	Package	Marking	Material	Packing
GG4045A6GTR	SOT-23-6L	45A	Halogen free	Tape&Reel
GG4045B6GTR	SOT-363-6L	45B	Halogen free	Tape&Reel

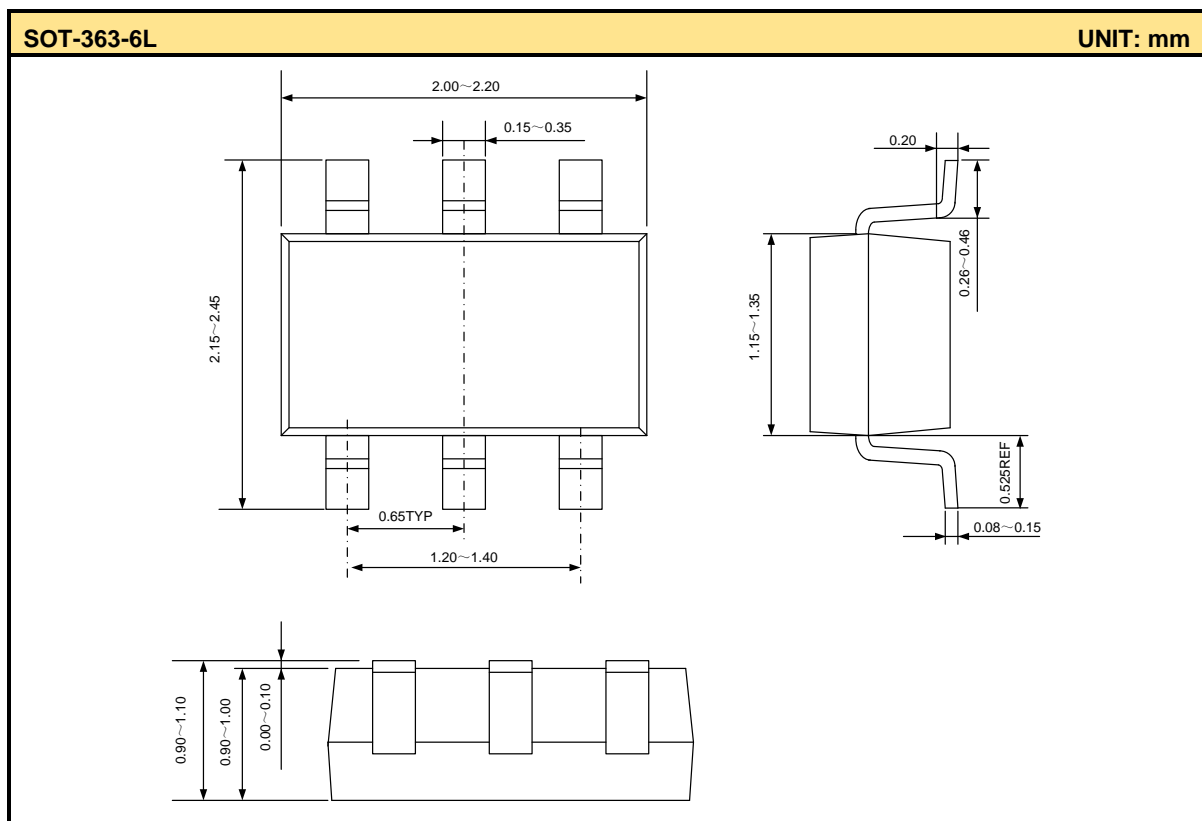
Package Outline

SOT-23-6L

UNIT: mm



Package Outline (continued)



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