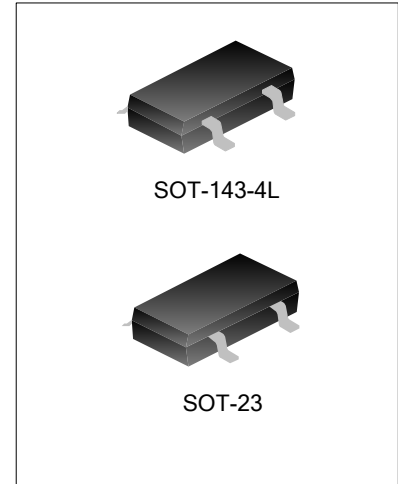


2-Channel Low Capacitance ESD Protection Diode Array

General Description

The GG1025QG/AG is a 2-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 respectively to the positive or negative rail. The capacitance of the channel to ground is 1.2pF. A Zener diode is integrated in the array between the positive and negative supply rails. In the typical applications, the negative rail pin is connected with the ground of the circuit protected. The positive ESD current is steered to the ground through the internal Zener diode to protect the power supply of the circuit protected. GG1025QG/AG is ideal to protect high speed data lines.



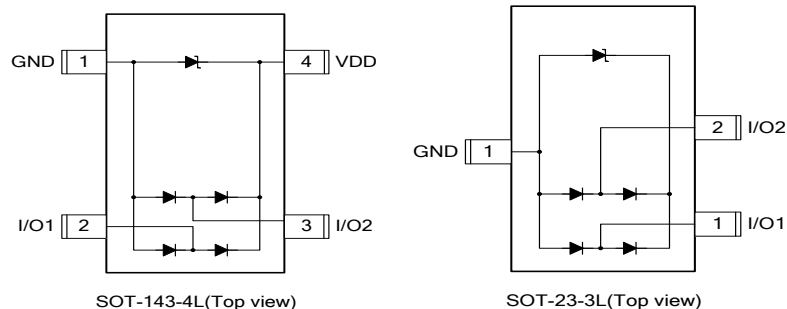
Features

- 2-channel ESD protection
- ESD protection meets IEC61000-4-2(ESD):
 - ±15kV air discharge
 - ±10kV contact discharge
- Super low capacitance between input & ground < 1.4pF
- Capacitance between I/O pins is no more than 0.7pF
- Low clamping voltage
- 5V low operating voltage
- Reliable silicon device avalanche breakdown structure
- Optimized package for easy PCB layout of high speed data lines

Applications

- HDMI ports
- DVI interface
- 10 / 100/ 1000M Ethernet
- USB2.0 interface protection
- Flat panel Monitors / TVs
- Set-top box
- VGA interface

Pin Configuration



Absolute Maximum Ratings

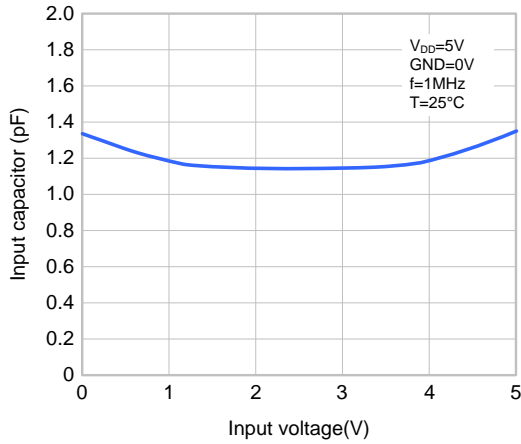
Characteristics		Symbol	Rating	Unit
Peak Pulse Power(8/20 μ s)		P_{PP}	150	W
Peak Pulse Current(8/20 μ s)		I_{PP}	5	A
Max. ESD Tolerance	IEC61000-4-2(Air)	V_{ESD1}	± 15	kV
	IEC61000-4-2(Contact)	V_{ESD2}	± 12	kV
Operating Temperature Range		T_{opr}	-55 ~ +125	$^{\circ}$ C
Storage Temperature Range		T_{stg}	-55 ~ +150	$^{\circ}$ C

Electrical Characteristics (T_{amb}=25 $^{\circ}$ C)

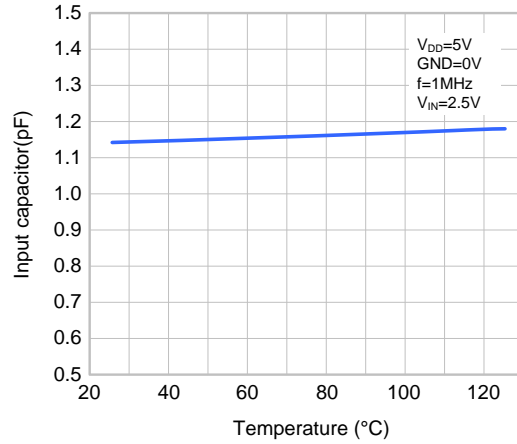
Characteristics	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND	--	--	5	V
Reverse Breakdown Voltage	V_{BR}	Any I/O pin to GND; $I_t=1mA$	6	--	--	V
Reverse Leakage Current	I_R	$V_{RWM}=5V$; $T=25^{\circ}C$; Any I/O pin to GND	--	--	1	μA
Positive Clamping Voltage	V_{C1}	$I_{PP}=1A$, $t_p=8/20\mu S$; Positive pulse; Any I/O pin to GND	--	8.5	12.0	V
Negative Clamping Voltage	V_{C2}	$I_{PP}=1A$, $t_p=8/20\mu S$; Negative pulse; Any I/O pin to GND	--	1.8	--	V
Junction Capacitance Between Channels	C_{J1}	$V_R=0V$, $f=1MHz$; Any I/O pin to GND	--	0.6	0.7	pF
Junction Capacitance between I/O And GND	C_{J2}	$V_R=0V$, $f=1MHz$; Any I/O pin to GND	--	1.2	1.4	pF

Typical Characteristics

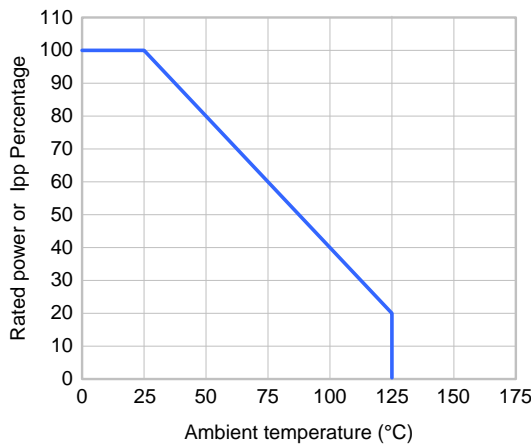
Typical curve of C_{IN} following V_{IN}



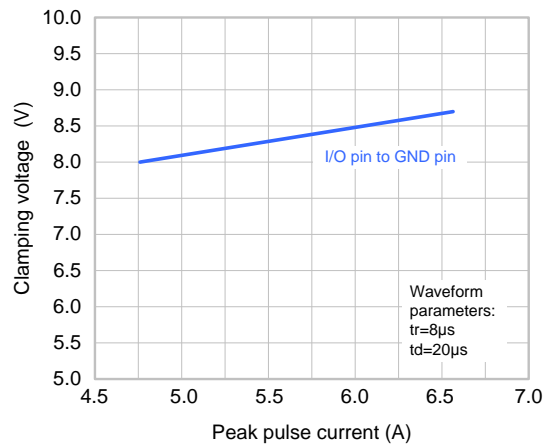
Typical curve of C_{IN} following the temperature



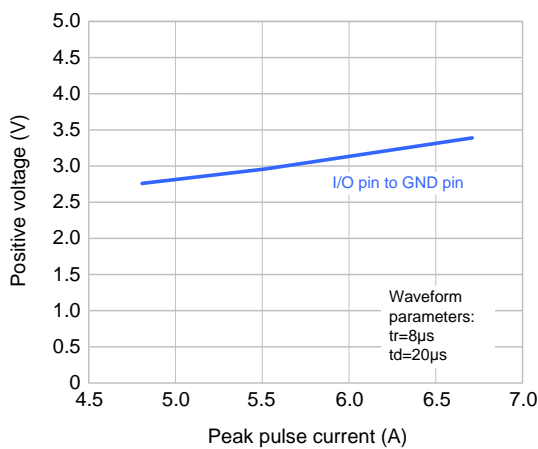
Power decline curve



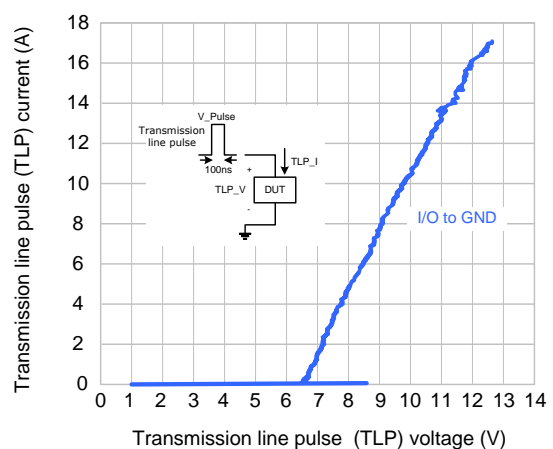
Clamping voltage vs. Peak pulse current



Positive voltage vs. Positive current



Transmission line pulse (TLP)

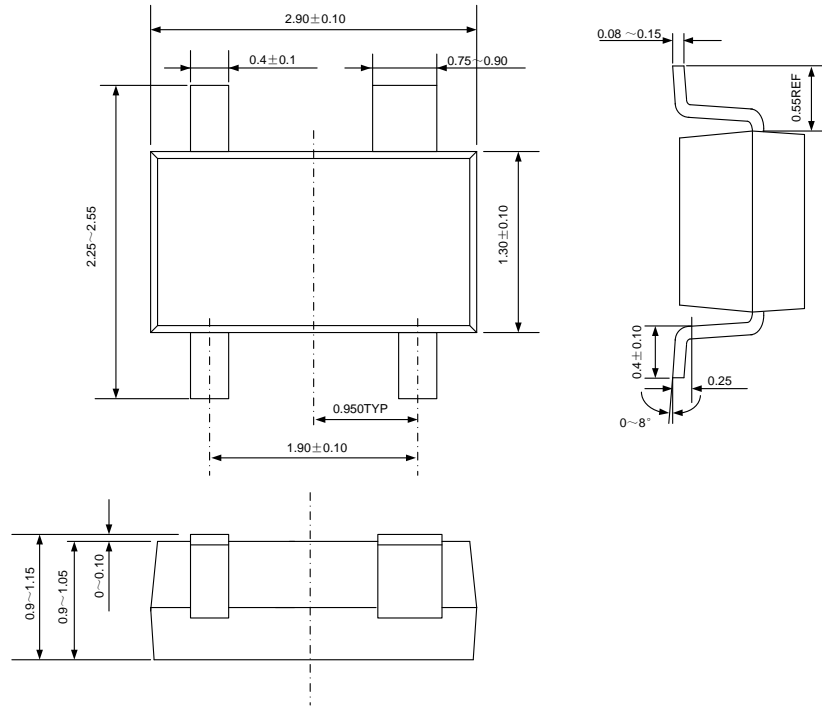


Ordering Information

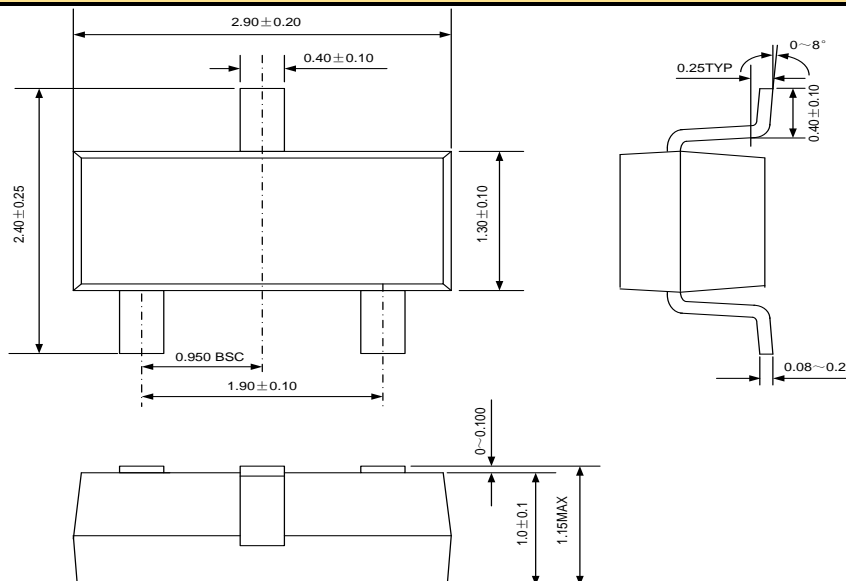
Part No	Package	Marking	Material	Packing
GG1025QGTR	SOT-143-4L	25Q	Halogen free	Tape&Reel
GG1025AGTR	SOT-23	1025A	Halogen free	Tape&Reel

Package Outline

SOT-143-4L UNIT: mm



SOT-23 UNIT: mm



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