

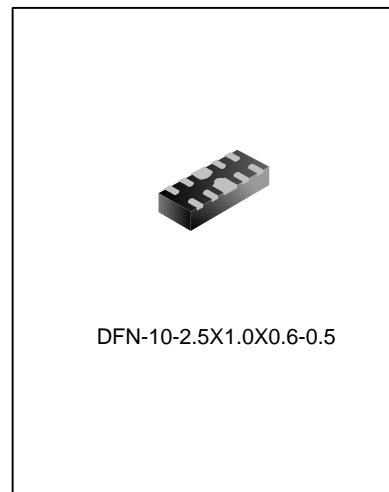
4-Channel Low Capacitance ESD Protection Diode Array

General Description

The GG0524PG 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 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 Zener diode and the positive ESD voltage is clamped to the Zener voltage.

The GG0524PG is ideal to protect high speed data lines.



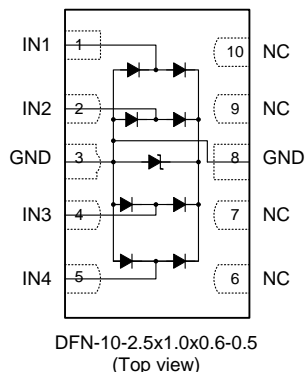
Features

- 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: 0.45pF(Max)
- Low clamping voltage
- 5V low operating voltage
- Improved Zener structure
- Optimized package for easy high speed data lines PCB layout
- RoHS compliant

Applications

- HDMI/DVI ports;
- Display Port interface;
- 10M / 100M / 1G Ethernet;
- USB 2.0 interface;
- VGA interface;
- Set-top box;
- Flat panel Monitors / TVs;
- PC / Note book.

Pin Configuration



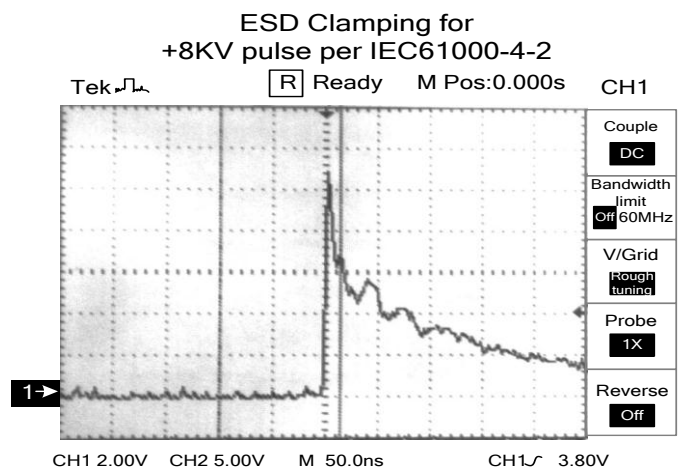
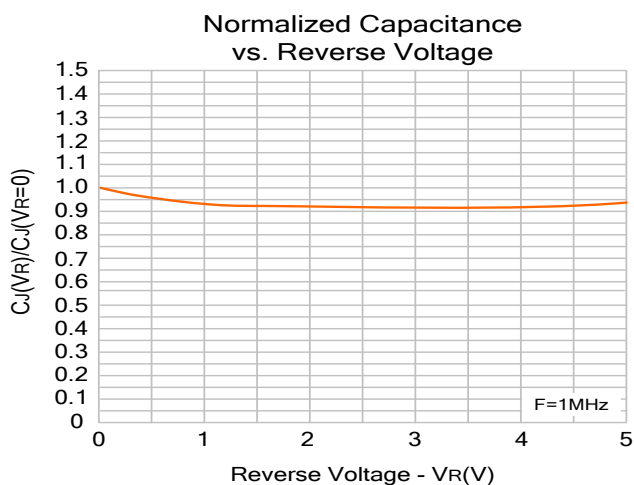
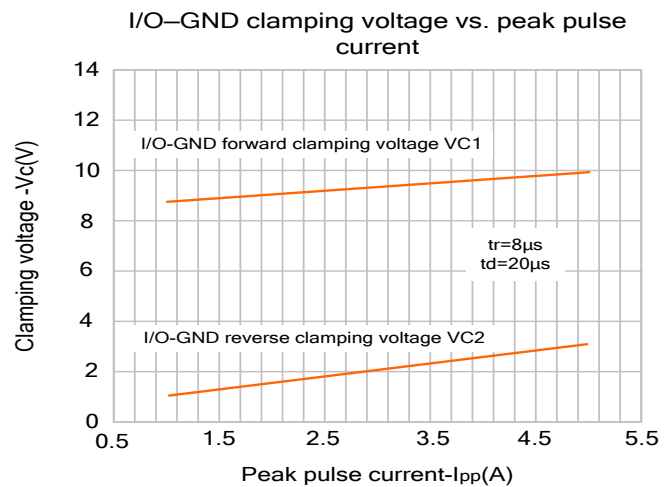
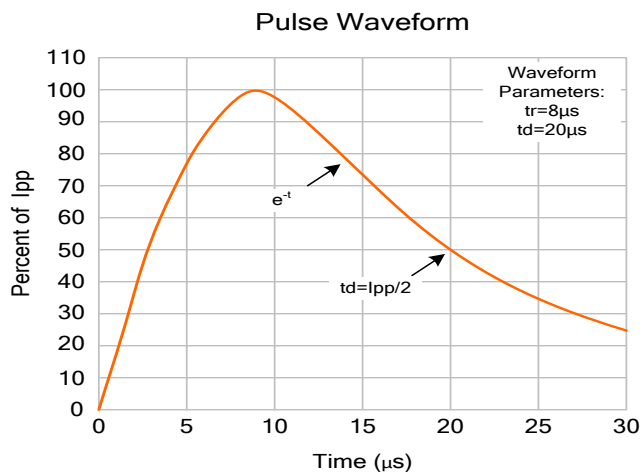
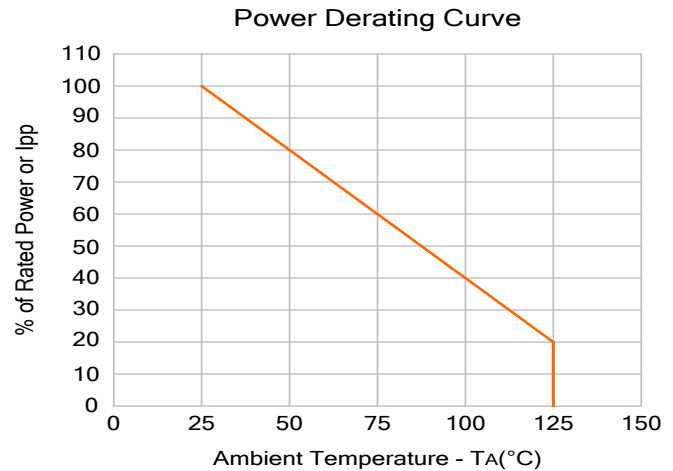
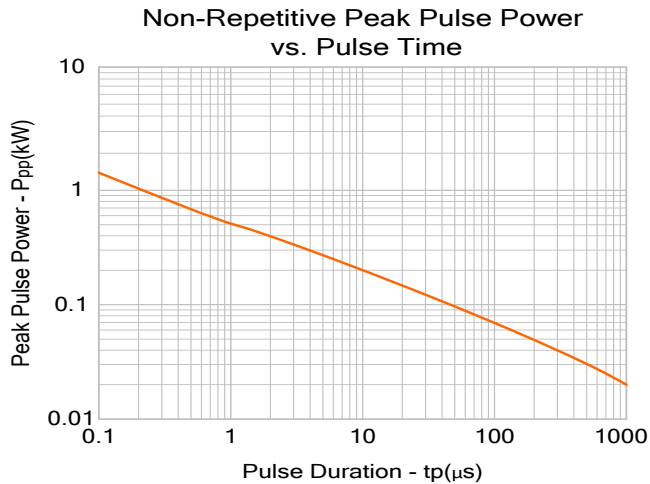
Absolute Maximum Ratings

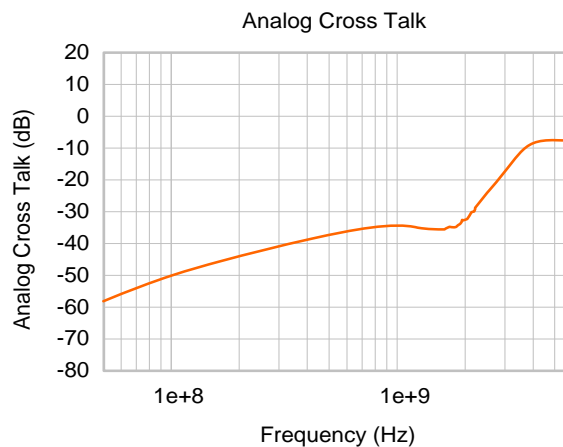
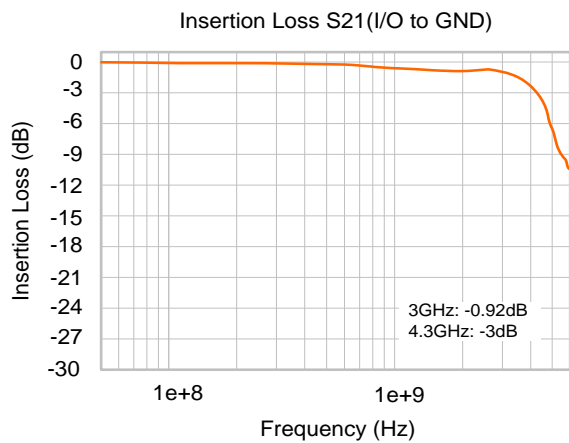
Characteristics	Symbol	Rating	Unit
Peak Pulse Power(8/20μs)	P _{PP}	150	W
Peak Pulse Current(8/20μs)	I _{PP}	5	A
ESD per IEC 61000-4-2(Air)	V _{ESD1}	±15	kV
ESD per IEC 61000-4-2(Contact)	V _{ESD2}	±8	kV
Operating Temperature Range	T _{opr}	-55 ~ +125	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C
Lead Soldering Temperature	T _L	260(10sec)	°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
Forward Voltage @ I _F	V _F	I _F =10mA	0.4	0.8	1.5	V
Reverse Breakdown Voltage	V _{BR}	I _I =1mA; Any I/O pin to GND	6.0	7.0	--	V
Reverse Leakage Current	I _R	V _{RWM} =5V, T=25°C; Any I/O pin to GND	--	0.03	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	--	0.35	0.45	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

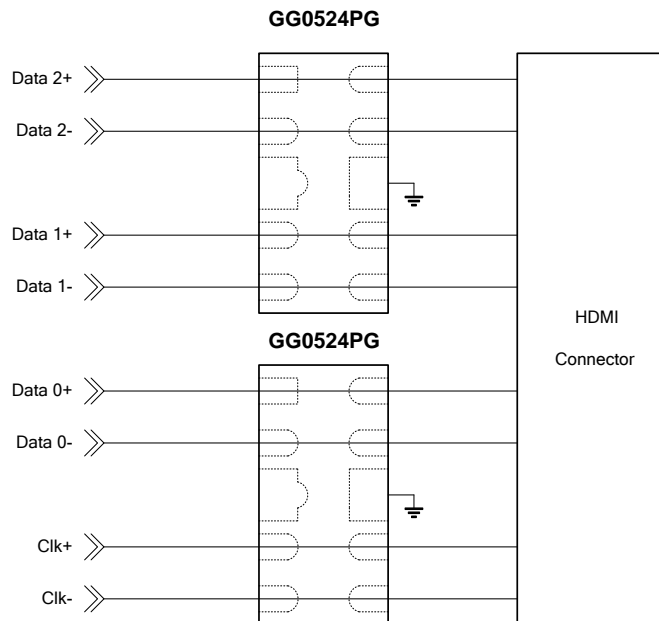
Typical Characteristics



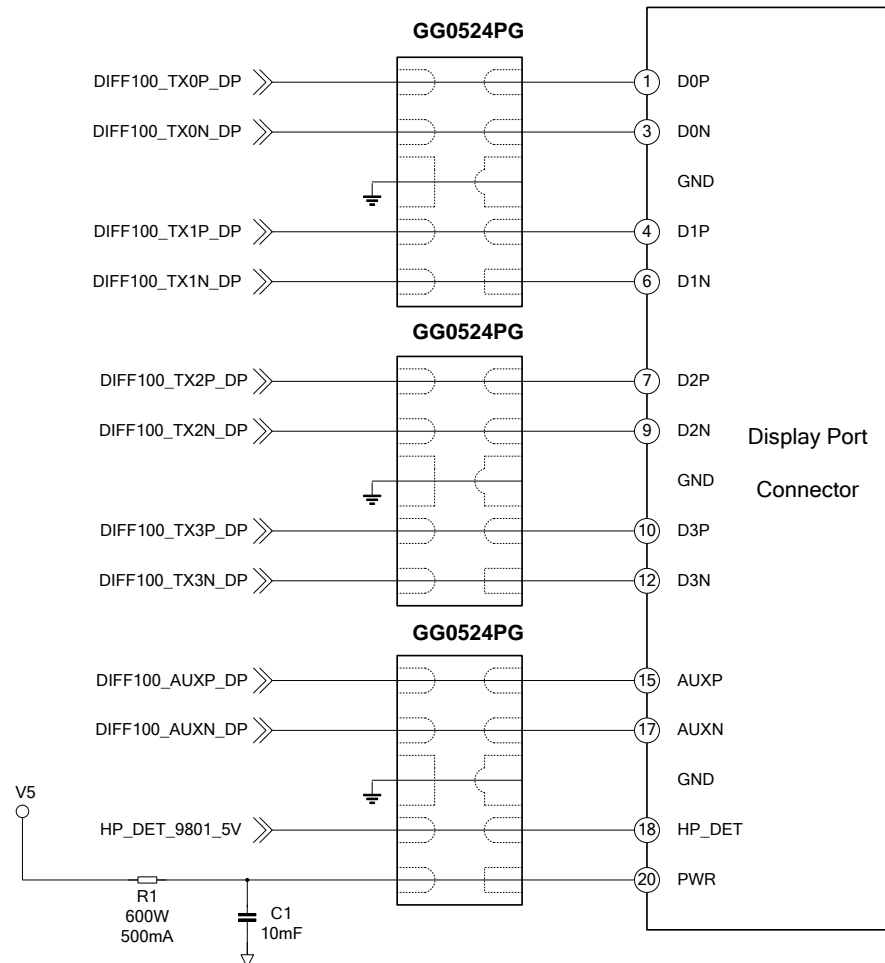


Typical Applications

1. HDMI Port Application



2. Display Port Application



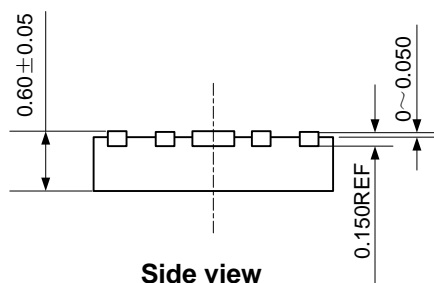
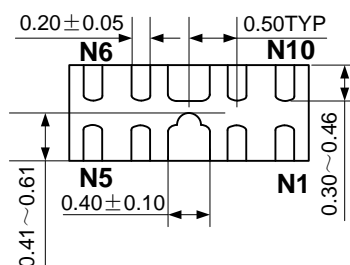
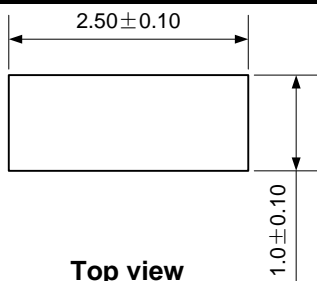
Ordering Information

Part No.	Package	Marking	Material	Packing
GG0524PGTR	DFN-10-2.5x1.0x0.6-0.5	24	Halogen free	Tape&Reel

Package Outline

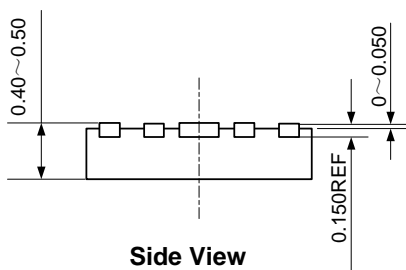
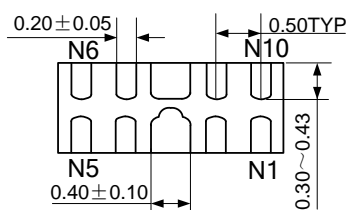
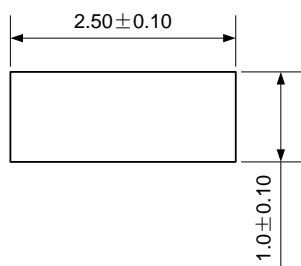
DFN-10-2.5X1.0X0.6-0.5(1)

UNIT: mm



DFN-10-2.5X1.0X0.6-0.5(2)

UNIT: mm



**MOS Devices Operation Notes:**

Electrostatic charges may exist in many things. Please take the following preventive measures to prevent effectively the MOS electric circuit as a result of the damage which is caused by discharge:

- The operator must put on wrist strap which should be earthed to against electrostatic.
- Equipment cases should be grounded.
- All tools used during assembly, including soldering tools and solder baths, must be grounded.
- MOS devices should be packed in antistatic/conductive containers for transportation.

Disclaimer:

The information furnished in this data sheet is believed to be accurate and reliable. However, no responsibility is assumed by Golden Gate Integrated Circuits (GGIC) for its use. GGIC reserves the right to change circuitry and specifications at any time without notification to the customer.

- Golden Gate Integrated Circuits reserves the right to make changes to the information herein for the improvement of the design and performance without further notice! Customers should obtain the latest relevant information before placing orders and should verify that such information is complete and current.
- All semiconductor products malfunction or fail with some probability under special conditions. When using Golden Gate Integrated Circuits products in system design or complete machine manufacturing, it is the responsibility of the buyer to comply with the safety standards strictly and take essential measures to avoid situations in which a malfunction or failure of such Golden Gate Integrated Circuits products could cause loss of body injury or damage to property.
- Golden Gate Integrated Circuits (GGIC) Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of GGIC Products for use in life support appliances, devices or systems is a Purchaser's own risk and Purchaser agrees to fully indemnify GGIC for any damages resulting from such use or sale.