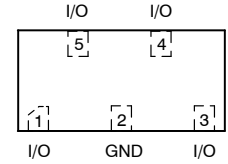
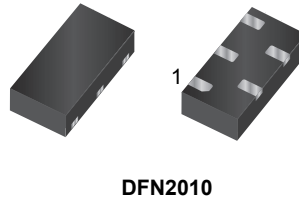


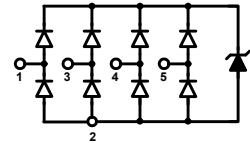
# GSEQP3U0015 Ultra Low Capacitance ESD Array

## Features

- DFN2010 package
- Protects up to 4-Lines operating at 3.3V
- R2R + zener technology
- Low clamping voltage
- Low Leakage current
- Ultra low capacitance (0.15pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:  
IEC 61000-4-2 ±10KV contact ±18KV air
- RoHS compliant



Pin Configuration



Schematic Diagram

## Applications

- USB 3.0/3.1
- HDMI 1.4/2.0, display port 1.3, eSATA
- Unified display interface (UDI)
- Digital visual interface (DVI)
- High speed serial interfaces

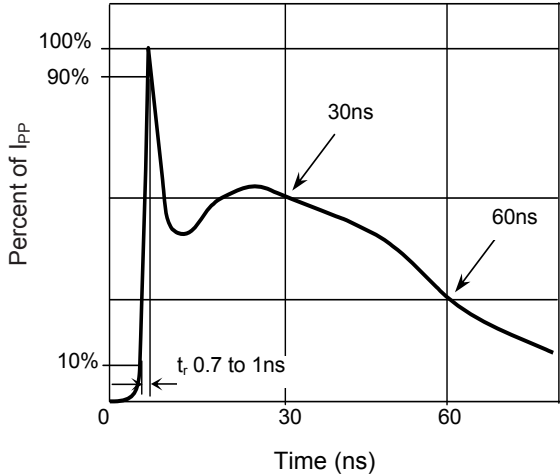
## Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Current ( t <sub>p</sub> =8/20μS )	I <sub>PP</sub>	3	A
IEC 61000-4-2 Contact (ESD)	V <sub>ESD</sub>	±10	kV
IEC 61000-4-2 Air (ESD)	V <sub>ESD</sub>	±18	kV
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Junction Temperature	T <sub>J</sub>	-55 to +125	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

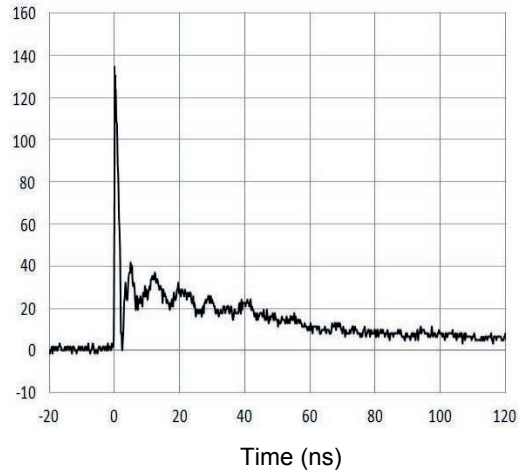
## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	V <sub>RWM</sub>	-	-	-	3.3	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	5	6	-	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =3.3V	-	0.01	1	μA
Clamping Voltage (IEC 61000-4-5)	V <sub>C</sub>	I <sub>PP</sub> =3A, T <sub>P</sub> =8/20μS	-	10	-	V
Trigger Voltage (IEC 61000-4-2)	V <sub>T</sub>	V <sub>ESD</sub> =8kV	-	135	-	V
Clamping Voltage (IEC 61000-4-2)	V <sub>C</sub>	V <sub>ESD</sub> =8kV	-	20	-	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, F=1MHz, I/O to I/O	-	0.15	-	pF
		V <sub>R</sub> =0V, F=1MHz, I/O to GND	-	0.35	-	

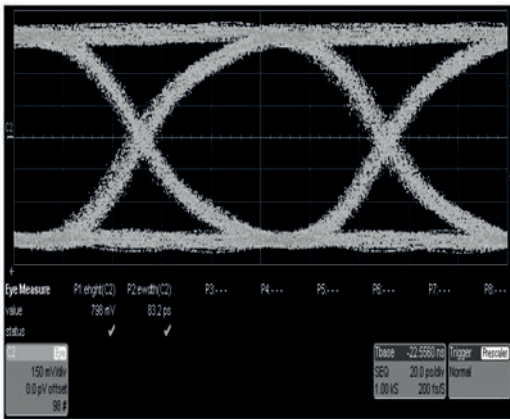
**Typical Characteristic Curves**



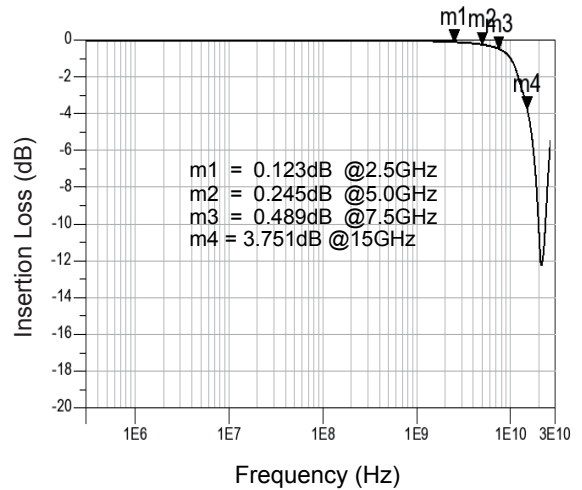
**Figure 1. Pulse Waveform-ESD (IEC61000-4-2)**



**Figure 2. IEC61000-4-2 +8kV Contact ESD Clamping Waveform**

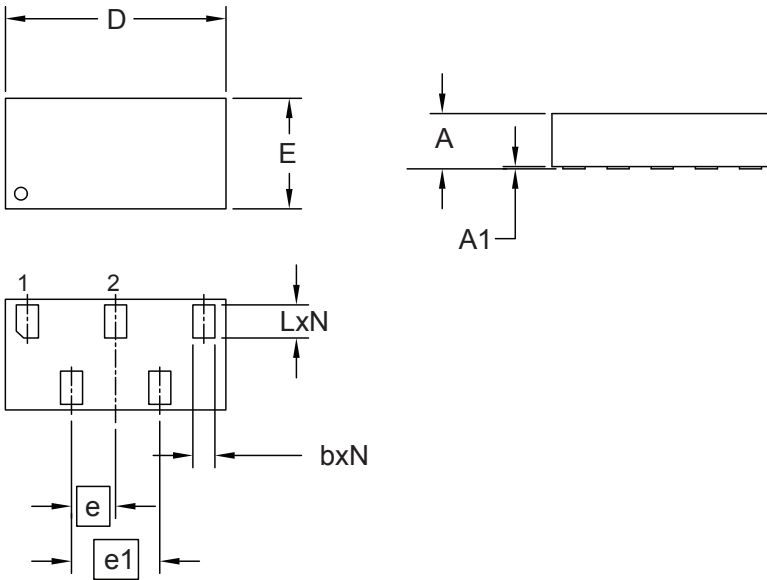


**Figure 3. Eye Diagram-USB3.1 at 10Gbps per Channel (with GSEQP3U0015)**



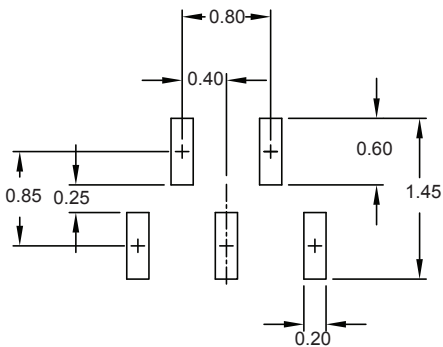
**Figure 4. Insertion Loss S21 - I/O to I/O**

**Product Outline Dimensions (DFN2010)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.45	0.55	0.018	0.022
A1	0.00	0.05	0.000	0.002
b	0.15	0.25	0.006	0.010
D	1.95	2.05	0.077	0.081
E	0.95	1.05	0.037	0.041
e	0.40 BSC		0.016 BSC	
e1	0.80 BSC		0.031 BSC	
L	0.25	0.35	0.010	0.014
N	5.00		5.00	

**Recommended Pad Layout**



**Note:**

1. Controlling dimension: in millimeters
2. The pad layout is for reference purposes only

**Order Information**

Device	Package	Marking	Carrier	Quantity
GSEQP3U0015	DFN2010	5U	Tape & Reel	3,000pcs / Reel

For more information, please contact us at: [inquiry@goodarksemi.com](mailto:inquiry@goodarksemi.com)