

Features

- Low capacitance: 1.7pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Ultra low clamping voltage
- Protects up to eight lines
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 Air discharge: $\pm 30\text{kV}$, Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 40A (8/20 μs)

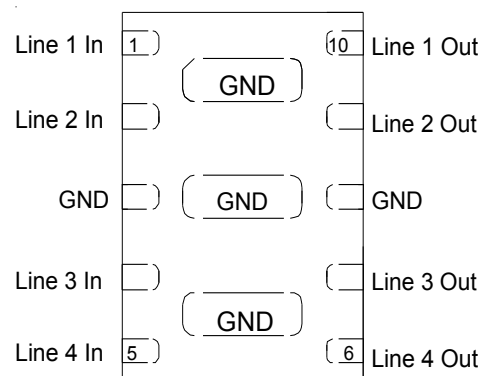
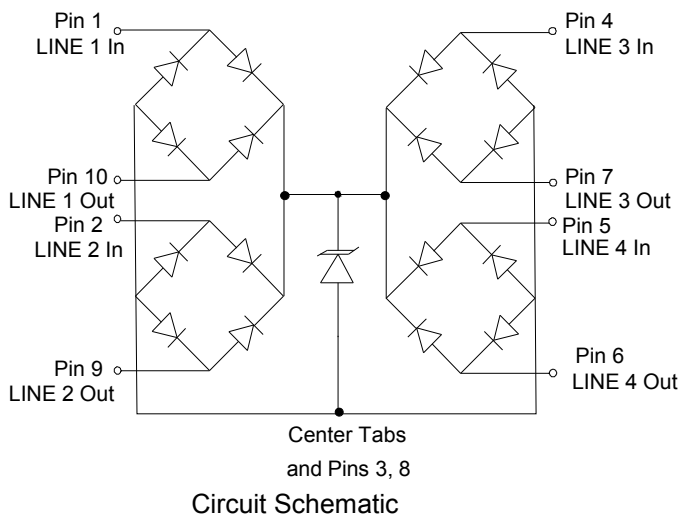


DFN3x2

Applications

- LVDS Interfaces
- 10/100/1000 Ethernet
- Notebooks, Desktops, Servers
- Networking Equipment
- Switching Systems
- Audio/Video Inputs

Schematic Diagram



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{pk}	1000	W
Peak Pulse Current (8/20 μs)	I_{pp}	40	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD Per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	3.3	V
Punch-Through Voltage	V_{PT}	$I_T=2\mu\text{A}$	3.5	-	-	V
Snap-Back Voltage	V_{SB}	$I_{SB}=50\text{mA}$	2.8	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3\text{V}$	-	-	0.5	μA
Clamping Voltage	V_C	$I_{pp}=1\text{A}$ (8 x 20 μs pulse), any I/O pin to ground	-	-	5.5	V
		$I_{pp}=10\text{A}$ (8 x 20 μs pulse), any I/O pin to ground	-	-	10.5	V
		$I_{pp}=25\text{A}$ (8 x 20 μs pulse), any I/O pin to ground	-	-	18	V
		$I_{pp}=40\text{A}$ (8 x 20 μs pulse), line to line (two I/O pins connected together on each line)	-	-	25	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $F=1\text{MHz}$, between I/O pins	-	1.7	2.5	pF
Junction Capacitance	C_J	$V_R=0\text{V}$, $F=1\text{MHz}$, any I/O pin to ground	-	3.8	5.0	pF

Typical Characteristic Curves

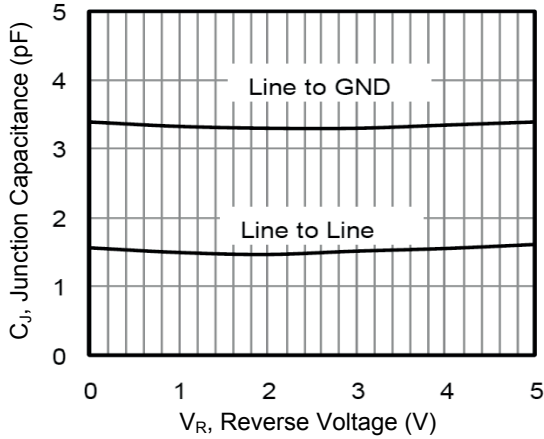


Figure 1. Junction Capacitance Vs. Reverse Voltage

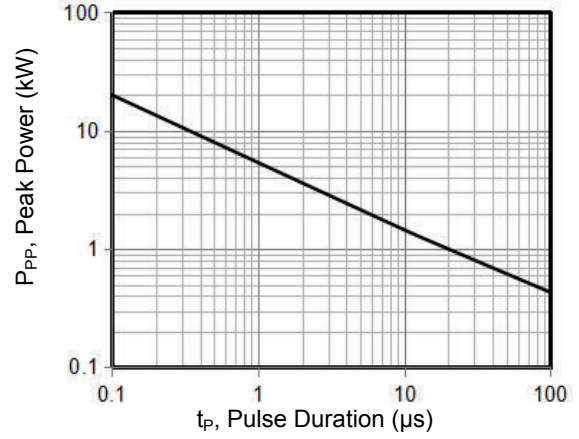


Figure 2. Peak Pulse Power Vs. Pulse Time

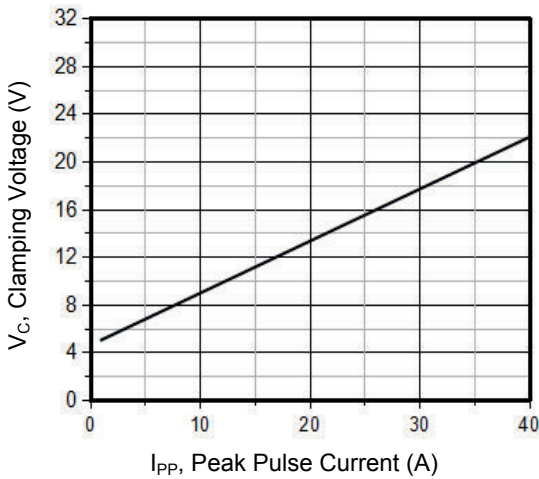


Figure 3. Clamping Voltage Vs. Peak Pulse Current

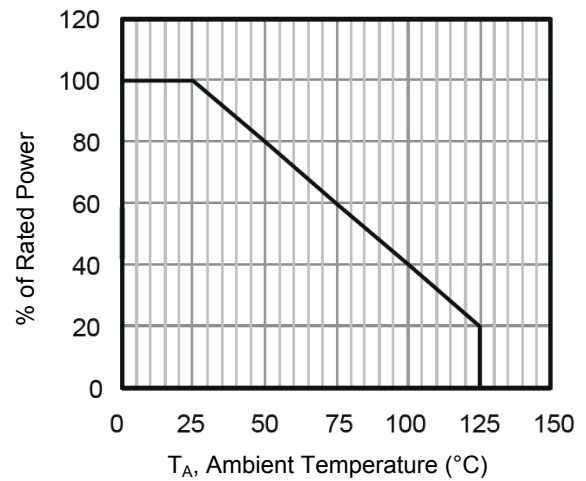


Figure 4. Power Derating Curve

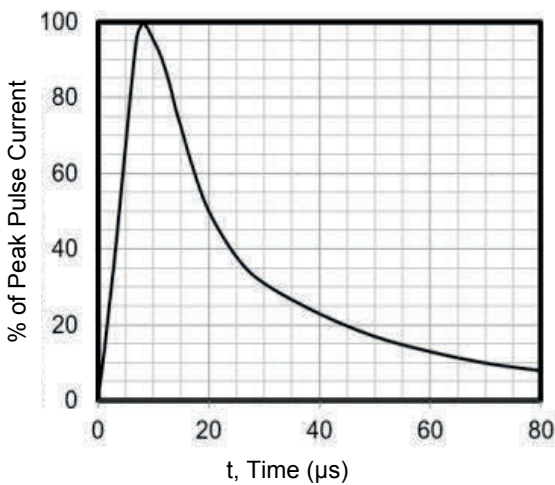
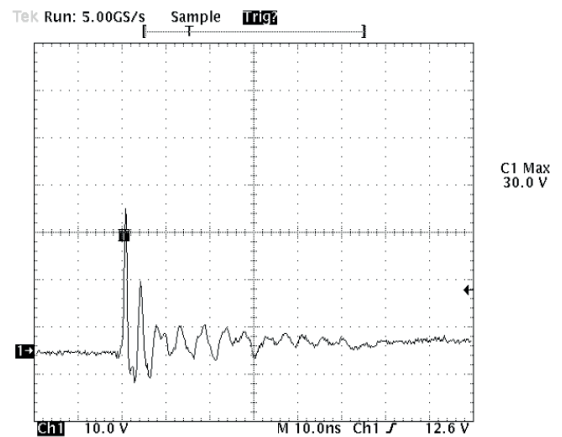
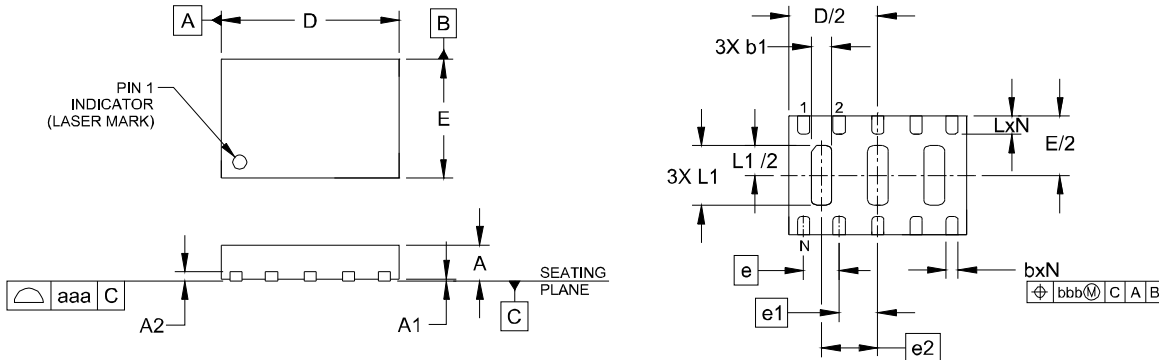


Figure 5. 8 X 20µs Pulse Waveform



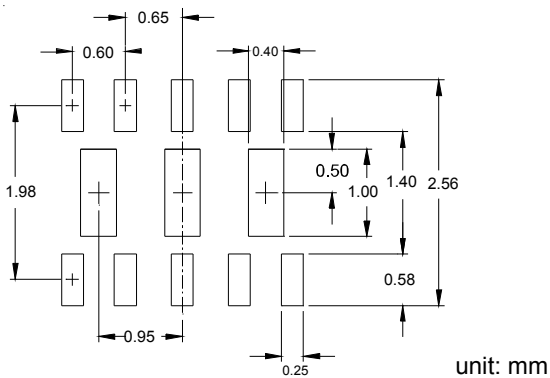
Note: Data is Taken With a 10x Attenuator
Figure 6. ESD Clamping Voltage 8 kV Contact per IEC61000-4-2

Package Outline Dimensions (DFN3x2)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.65	0.020	0.026
A1	0.00	0.05	0.000	0.002
A2	0.15 REF		0.006 REF	
b	0.15	0.25	0.006	0.010
b1	0.25	0.45	0.010	0.018
D	2.90	3.10	0.114	0.122
E	1.90	2.10	0.075	0.083
e	0.60 BSC		0.024 BSC	
e1	0.65 BSC		0.026 BSC	
e2	0.95 BSC		0.037 BSC	
L	0.25	0.35	0.010	0.014
L1	0.95	1.05	0.037	0.041
N	10 (PINs)		-	
aaa	0.08 REF		0.003 REF	
bbb	0.10 REF		0.004 REF	

Recommended Pad Layout



Order Information

Device	Package	Marking	Carrier	Quantity
GSEN3U017	DFN3x2	3374N	Tape & Reel	3,000 pcs / Reel