GOOD-ARK SEMICONDUCTOR

GSEY12U4000
ESD Protection Diode

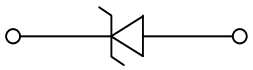
Features

- 1800W peak pulse power (tp= 8/20μs)
- Uni-directional configuration
- Low operating voltage
- Ultra Low clamping voltage
- Low leakage current
- ESD Protection for high-speed data lines to:
  IEC 61000-4-2 Air: ±30KV Contact: ±30KV
  IEC 61000-4-5 (Lightning) 75A (8/20μs)
- RoHS compliant

DFN1610

Applications

- Power Management
- Industrial Application
- Power Supply Protection
- Many Other Portable Devices



Schematic Diagram

Absolute Maximum Ratings (T_A=25°C, Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PK}	1800	W
Peak Pulse Current (8/20μs)	I_{PP}	75	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	°C
Storage Temperature Range	T_{STG}	- 55 to +150	°C

Electrical Characteristics (T_A=25°C, Unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	12	V
Breakdown Voltage	V_{BR}	I_T = 1mA	13	14.5	-	V
Reverse Leakage Current	I_R	V_{RWM} = 12V	-	-	1.0	μA
Clamping Voltage	Vc	I_{PP} = 50A (8x20μs pulse)	-	21	-	V
Clamping Voltage	Vc	I_{PP} = 75A (8x20μs pulse)	-	24	-	V
Junction Capacitance	C_J	V_R = 0V, f = 1MH z	-	400	-	pF

Typical Characteristic Curves

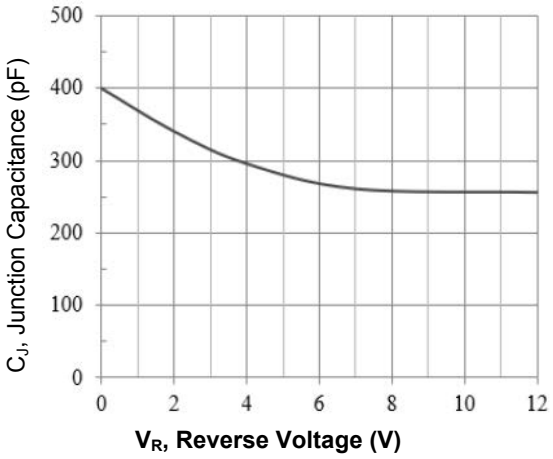


Figure 1. Junction Capacitance vs. Reverse Voltage

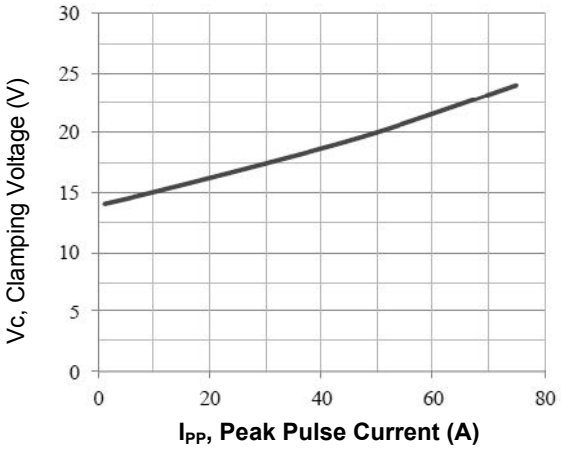


Figure 2. Clamping Voltage vs. Peak Pulse Current

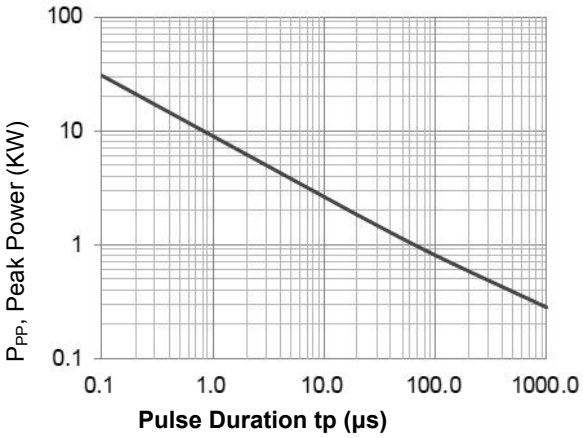


Figure 3. Peak Pulse Power vs. Pulse Time

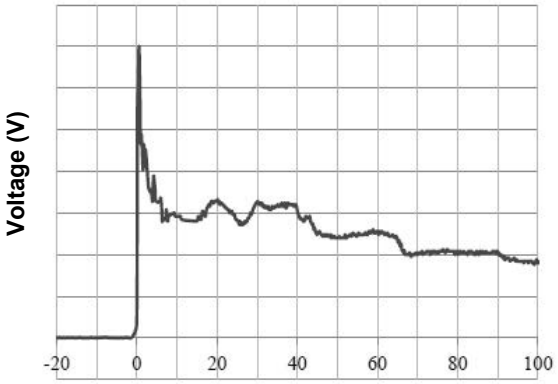


Figure 4. IEC61000-4-2 Pulse Waveform

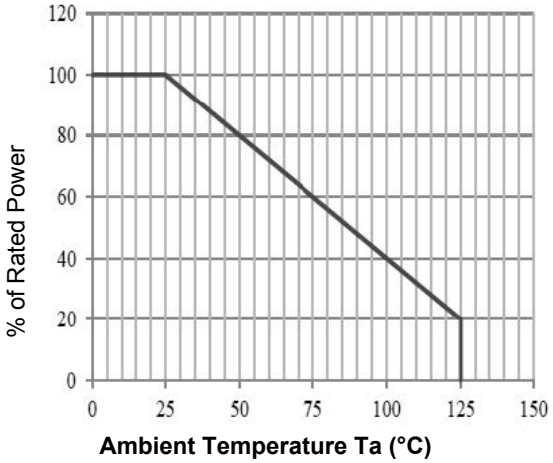


Figure 5. Power Derating Curve

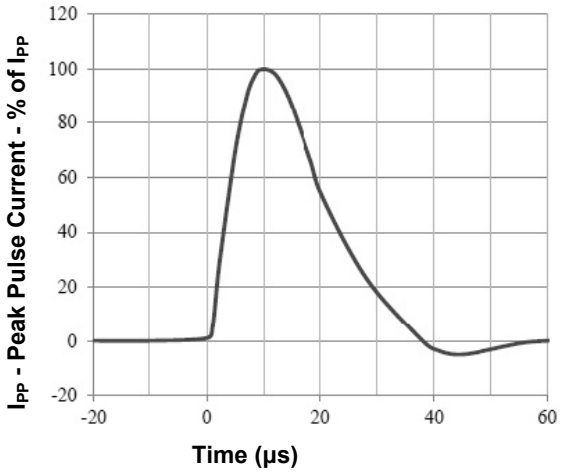
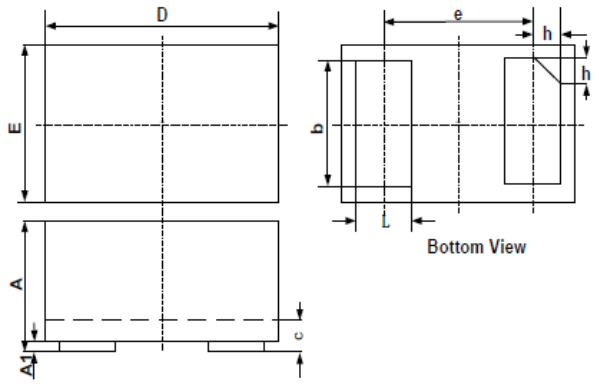


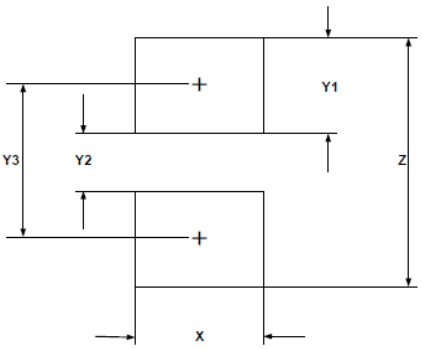
Figure 6. Pulse WaveForm-8/20μs

Package Outline Dimensions DFN1610-2L



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
C	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

Recommended Pad Layout



SYM	DIME NSIONS	
	MILLIMETE RS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

Order Information

Device	Package	Marking	Carrier	Quantity	HSF Status
GSEY12U4000	DFN1610	12P	Tape & Reel	3,000pcs / Reel	RoHS compliant