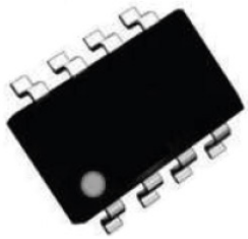
GOOD-ARK
SEMICONDUCTOR

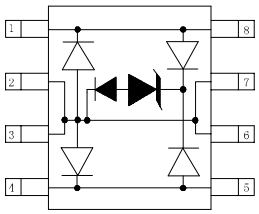
GSEQ6B080
ESD Protection Diode

Features

- Low capacitance for high speed interfaces
- Ultra low leakage: nA level
- Low operating voltage
- Low clamping voltage
- Protects two lines in common and differential mode
- JEDEC SOP-8 package
- Complies with following standards:
  -IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
  -IEC 61000-4-5 (Lightning) 100A (8/20μs)
- RoHS compliant



SOP-8



Schematic Diagram

Applications

- T1/E1 line cards
- T3/E3 and DS3 interfaces
- STS-1 interfaces
- 10/100/1000 base ethernet
- ISDN interfaces
- Low voltage interfaces

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{pk}	2600	W
Peak Pulse Current (8/20μs)	I_{PP}	100	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}	-	-	-	6	V
Breakdown Voltage	V_{BR}	I_T=1mA	6.8	-	-	V
Reverse Leakage Current	I_R	V_{RWM}=6V	-	-	25	μA
Clamping Voltage	V_C	I_{PP}=50A (8 x 20μs pulse), any I/O pin to ground	-	-	18	V
		I_{PP}=100A (8 x 20μs pulse), any I/O pin to ground	-	-	26	V
Junction Capacitance	C_J	V_R=0V, f=1MHz, between I/O pins and ground	-	16	25	pF
		V_R=0V, f=1MHz, between I/O pins	-	8	12	pF

Typical Performance Characteristic (T_A=25°C unless otherwise Specified)

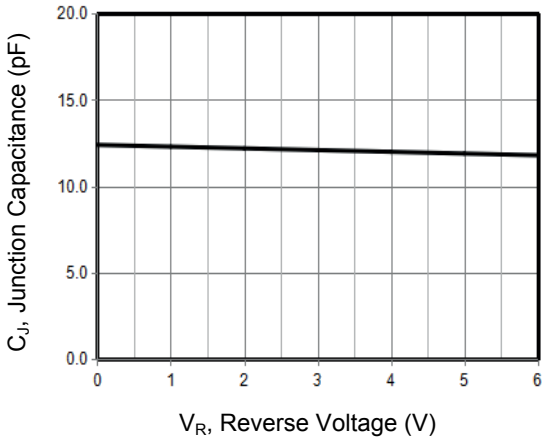


Figure 1. Junction Capacitance vs. Reverse Voltage

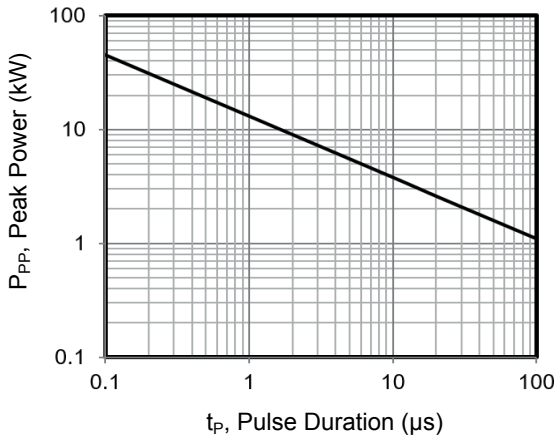


Figure 2. Peak Pulse Power vs. Pulse Time

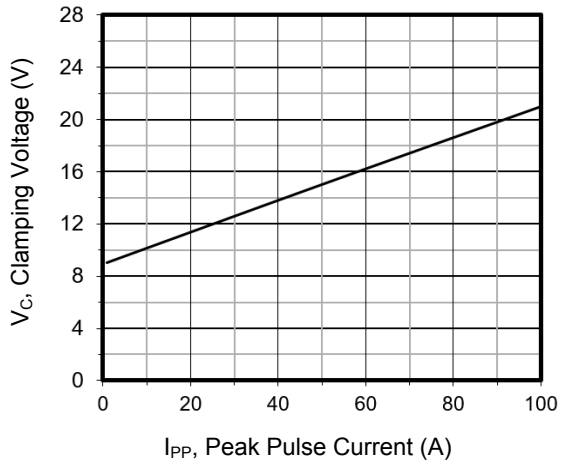


Figure 3. Clamping Voltage vs. Peak Pulse Current (t_p=8/20us)

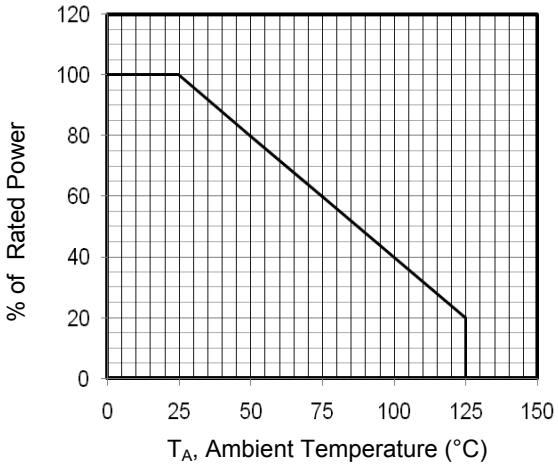


Figure 4. Power Derating Curve

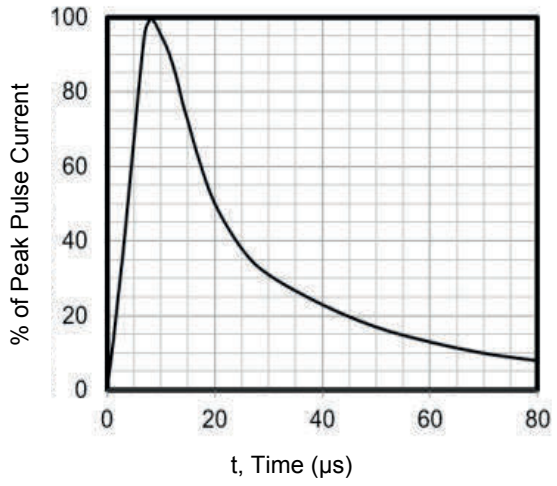
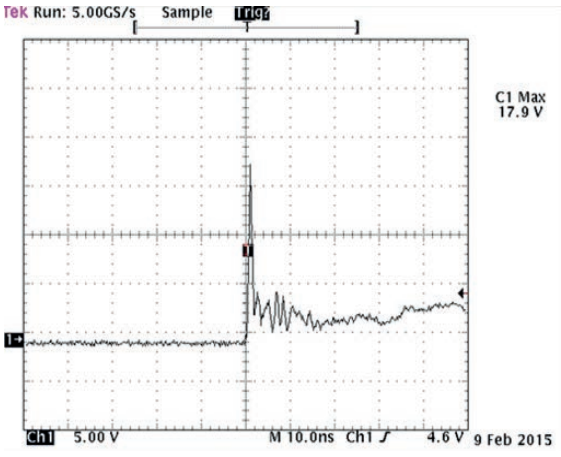


Figure 5. 8 X 20μs Pulse Waveform



Note: Data is taken with a 10x attenuator

Figure 6. ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

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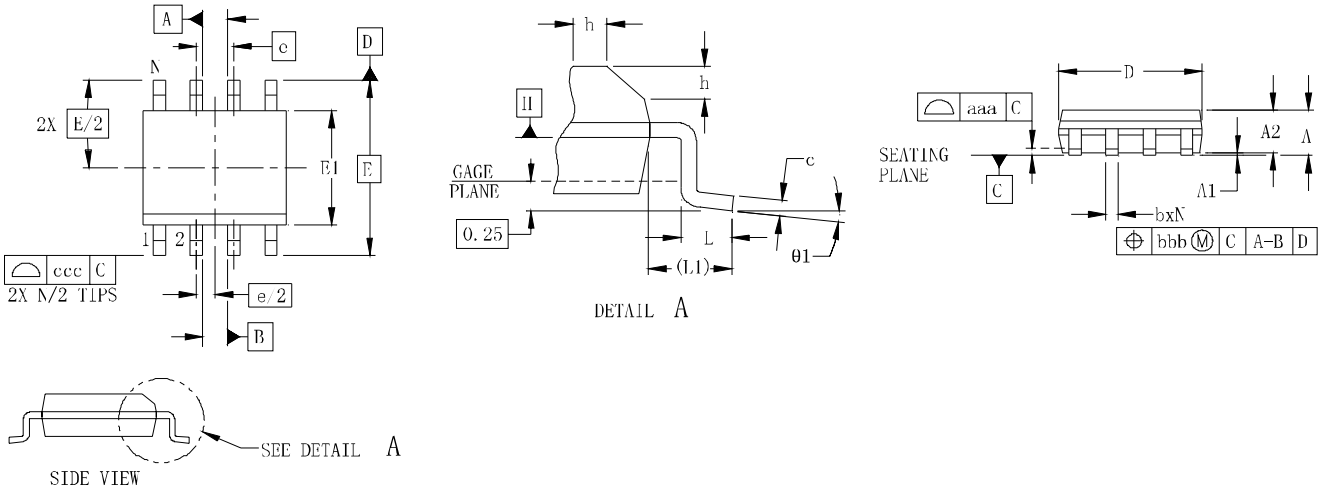
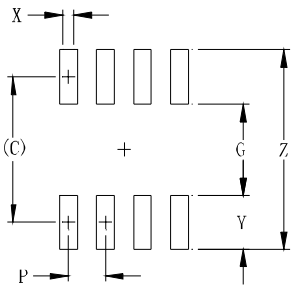
Package Outline Dimensions (SOP-8)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	1.65	0.049	0.065
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E1	3.80	4.00	0.150	0.157
E	6.00 BSC		0.236 BSC	
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.04	0.016	0.041
L1	(1.04)		(0.041)	
N	8		8	
θ1	0°	8°	0°	8°
aaa	0.10		0.004	
bbb	0.25		0.010	
ccc	0.20		0.008	

Recommended Pad Layout



Symbol	Dimensions	
	Millimeters	Inches
C	(5.20)	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Order Information

Device	Package	Marking	Carrier	Quantity
GSEQ6B080	SOP-8	LC-6	Tape & Reel	2,500pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com