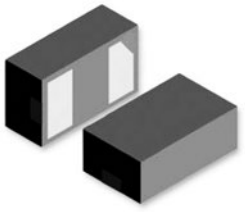
GOOD-ARK SEMICONDUCTOR

GSEZ18B0035
Ultra-Low Capacitance ESD TVS

Features

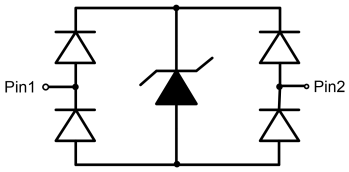
- Bi-directional, stand-off voltage: 18V Max.
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±15kV (contact)
  IEC61000-4-5(surge): 4A (8/20μs)
- Ultra-low capacitance: C_J=0.35pF typ.
- Ultra-low leakage current: I_R<1nA typ.
- Low clamping voltage: V_{CL}=9.0V typ. I_{PP}=16A (TLP)
- Solid-state silicon technology
- Integrated one pair of ultra-low capacitance steering diodes and a TVS diode



DFN1006-2L

Applications

- NFC antenna protection
- Protection of high-speed and standard data lines with high signal levels
- Portable electronics and notebooks



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs)	P_{PK}	36	W
Peak Pulse Current (tp=8/20μs)	I_{PP}	4	A
ESD According to IEC61000-4-2 Air Discharge	V_{ESD}	±15	kV
ESD According to IEC61000-4-2 Contact Discharge		±15	
Junction Temperature	T_J	125	°C
Operating Temperature	T_{OP}	-40 to 85	°C
Lead Temperature	T_L	260	°C
Storage Temperature	T_{STG}	-55 to 150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

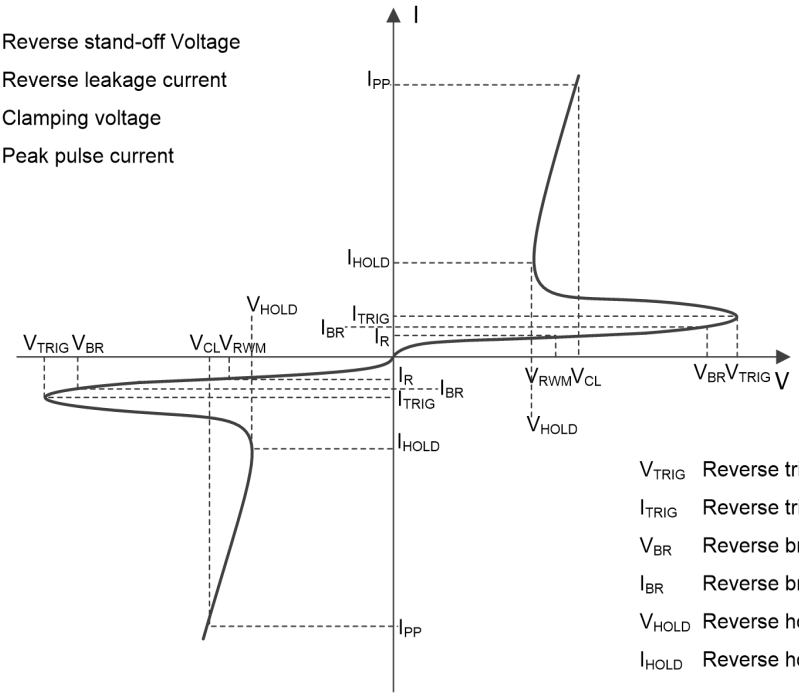
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Maximum Working Voltage	V_{RWM}	-	-	-	±18	V
Reverse Leakage Current	I_R	V_{RWM}=18V	-	<1	50	nA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	18.5	-	-	V
Clamping Voltage[1]	V_{CL}	I_{PP}=16A, t_p=100ns	-	9.0	-	V
Dynamic Resistance[1]	R_{DYN}	-	-	0.33	-	Ω
Clamping Voltage[2]	V_{CL}	V_{ESD}=8kV	-	9.0	-	V
Clamping Voltage[3]	V_{CL}	I_{PP}=1A, t_p=8/20μs	-	5	7	V
		I_{PP}=4A, t_p=8/20μs	-	7	9	V
Junction Capacitance	C_J	V_R=0V, f=1MHz	-	0.35	0.50	pF

Notes:

1. TLP parameter: Z_0=50Ω, t_p=100ns, t_r=2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
2. Contact discharge mode, according to IEC61000-4-2.
3. Non-repetitive current pulse, according to IEC61000-4-5.

Definitions of Electrical Characteristics

V_{RWM} Reverse stand-off Voltage
I_R Reverse leakage current
V_{CL} Clamping voltage
I_{PP} Peak pulse current



V_{TRIG} Reverse trigger voltage
I_{TRIG} Reverse trigger current
V_{BR} Reverse breakdown voltage
I_{BR} Reverse breakdown current
V_{HOLD} Reverse holding voltage
I_{HOLD} Reverse holding current

Ratings and Characteristics Curves (T_A=25°C unless otherwise specified)

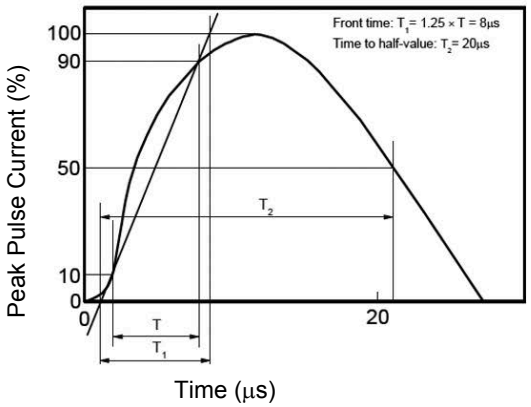


Figure 1. 8/20μs Waveform per IEC61000-4-5

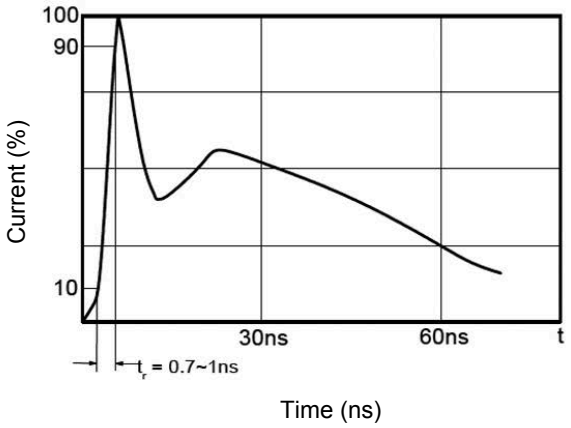


Figure 2. Contact Discharge Current Waveform per IEC61000-4-2

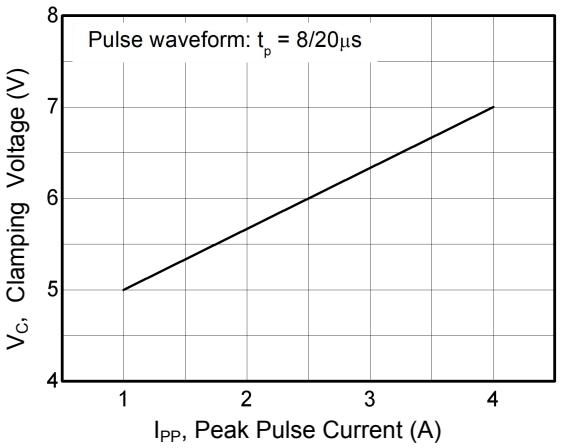


Figure 3. Clamping Voltage vs Peak Pulse Current

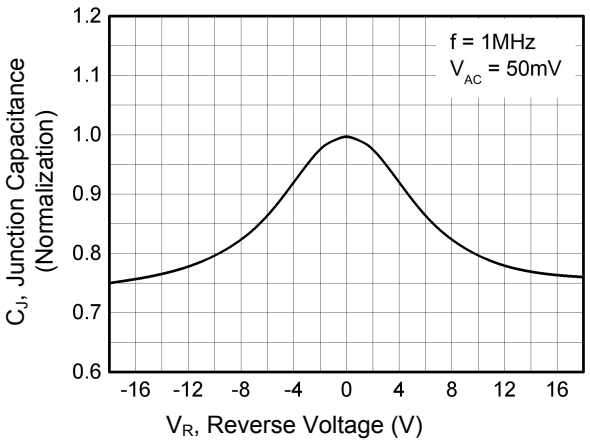


Figure 4. Junction Capacitance vs. Reverse Voltage

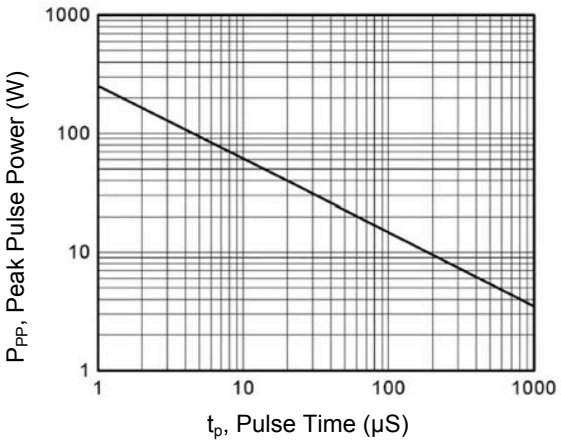


Figure 5. Peak Pulse Power vs. Pulse Time

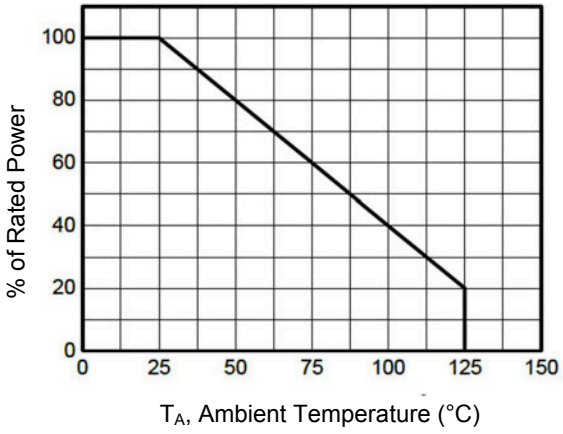


Figure 6. Power Derating Curve

Ratings and Characteristics Curves (T_A=25°C unless otherwise specified)

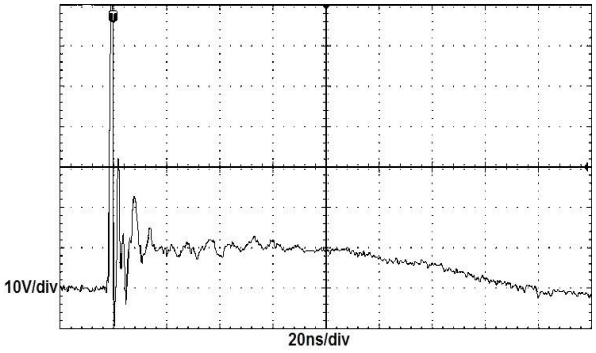


Figure 7. ESD Clamping
(+8kV Contact Discharge per IEC61000-4-2)

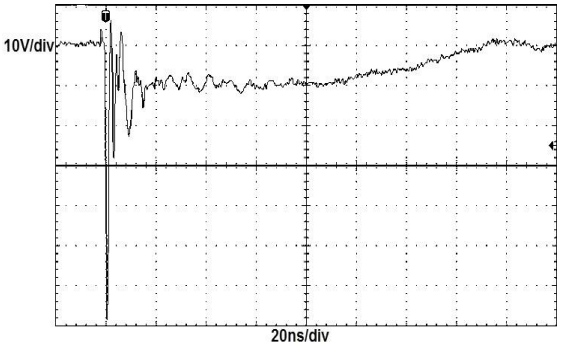


Figure 8. ESD Clamping
(-8kV Contact Discharge per IEC61000-4-2)

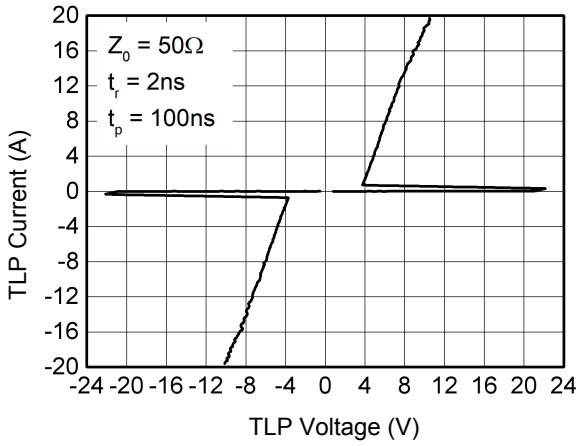
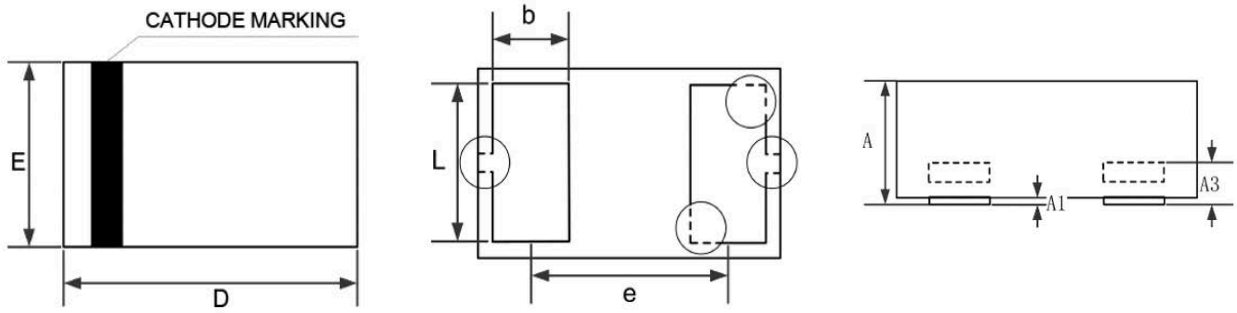


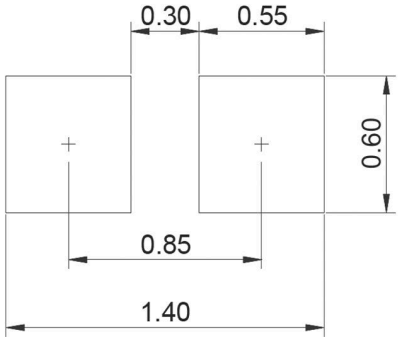
Figure 9. TLP Measurement

Package Outline Dimensions (DFN1006-2L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.340	0.530	0.013	0.021
A1	0.000	0.050	0.000	0.002
A3	0.125 REF		0.005 REF	
D	0.950	1.080	0.037	0.043
E	0.550	0.680	0.022	0.027
b	0.200	0.300	0.008	0.012
L	0.450	0.550	0.018	0.022
e	0.650 BSC		0.026 BSC	

Recommended Pad Layout



unit:mm

Order Information

MPN	Package	Marking	Quantity	HSF Status
GSEZ18B0035	DFN1006-2L	8U	10,000pcs / Reel	RoHS compliant