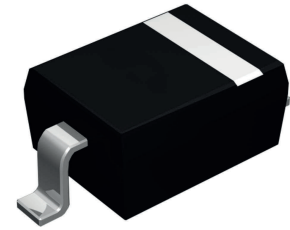


Features

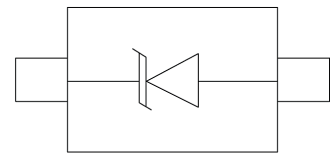
- 500W peak pulse power (8/20μs)
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 3.3V, 5V, 8V, 15V, 18V, 24V, 36V, 40V
- Ultra low clamping voltage
- Complies with following standards:
 -IEC 61000-4-2 (ESD) immunity test
 Air discharge: ±30kV
 Contact discharge: ±30kV



SOD-323

Applications

- Cellular handsets and accessories
- Personal digital assistants
- Notebooks and handhelds
- Portable instrumentation
- Peripherals
- Pagers peripherals



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PK}	500	W
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 ($T_A=25^\circ\text{C}$ unless otherwise specified)

GSEDC3U2800						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	3.3	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	3.8	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3\text{V}$	-	-	0.5	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20μs pulse)	-	-	5	V
Clamping Voltage	V_C	$I_{PP}=40\text{A}$ (8 x 20μs pulse)	-	-	12.5	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	40	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	280	400	pF

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

GSEDC5U2300						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$	-	-	0.5	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=5\text{A}$ (8 x 20 μs pulse)	-	-	9.5	V
Clamping Voltage	V_C	$I_{PP}=36\text{A}$ (8 x 20 μs pulse)	-	-	14	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	36	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	230	300	pF
GSEDC8U2000						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	8	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	8.5	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=8\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=5\text{A}$ (8 x 20 μs pulse)	-	-	12	V
Clamping Voltage	V_C	$I_{PP}=28\text{A}$ (8 x 20 μs pulse)	-	-	18	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	28	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	200	250	pF
GSEDC15U750						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	15	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	16.8	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=15\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	20	V
Clamping Voltage	V_C	$I_{PP}=17\text{A}$ (8 x 20 μs pulse)	-	-	30	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	17	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	75	120	pF

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

GSEDC18U500						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	18	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	19	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=18\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	-	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	23	V
Clamping Voltage	V_C	$I_{PP}=10\text{A}$ (8 x 20 μs pulse),	-	-	32	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	10	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	50	-	pF
GSEDC24U540						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	24	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	27	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=24\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	40	V
Clamping Voltage	V_C	$I_{PP}=10\text{A}$ (8 x 20 μs pulse)	-	-	50	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	10	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	54	100	pF
GSEDC36U500						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	36	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	38	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=36\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	45	V
Clamping Voltage	V_C	$I_{PP}=8\text{A}$ (8 x 20 μs pulse)	-	-	62.5	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	8	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	50	70	pF

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

GSEDC40U360						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	40	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	44	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=40\text{V}$	-	-	0.2	μA
Forward Voltage	V_F	$I_F=10\text{mA}$	-	0.8	1.2	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	50	V
Clamping Voltage	V_C	$I_{PP}=6\text{A}$ (8 x 20 μs pulse)	-	-	83	V
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	-	-	6	A
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	36	-	pF

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

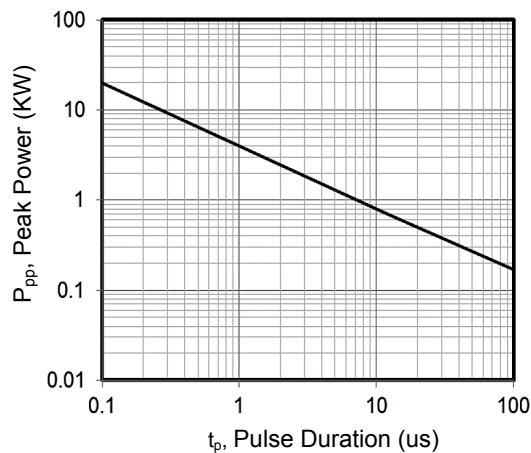


Figure 1. Peak Pulse Power vs. Pulse Time

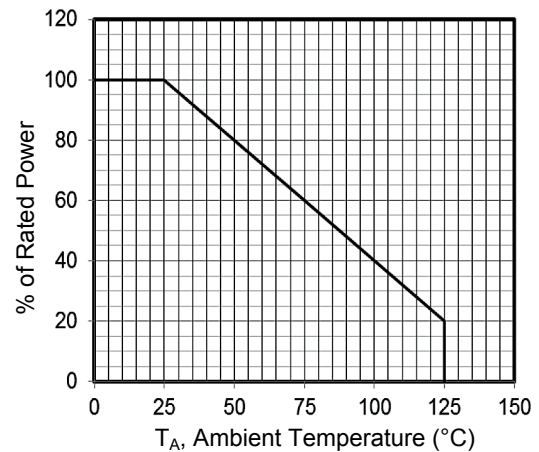


Figure 2. Power Derating Curve

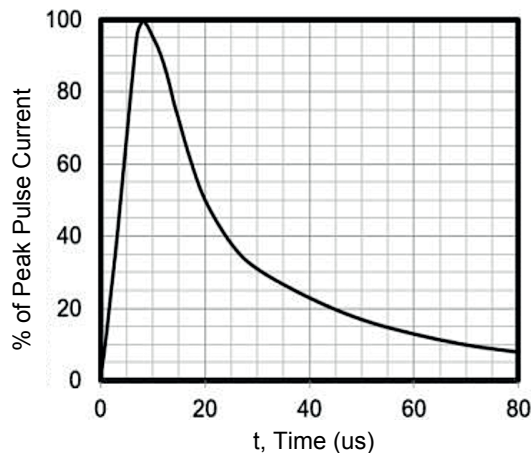
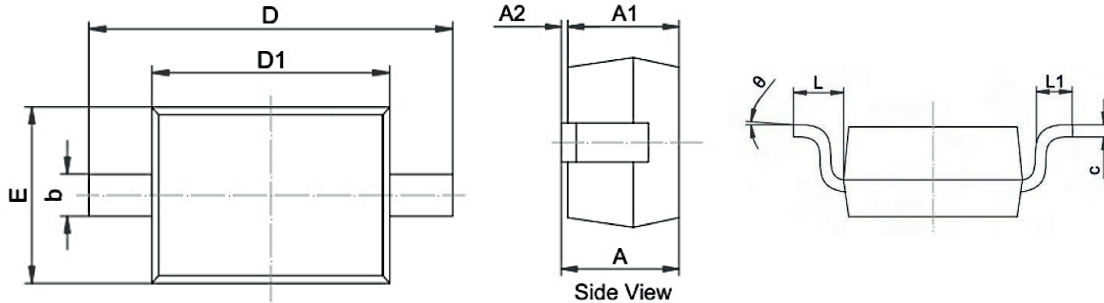


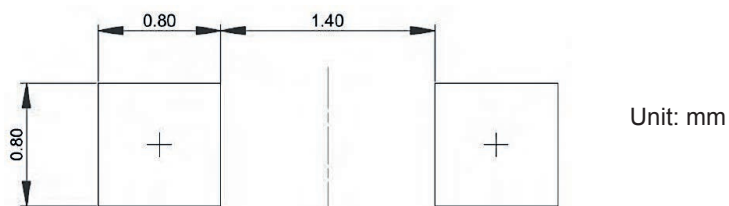
Figure 3. 8 x 20us Pulse Waveform

Package Outline Dimension (SOD-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.800	1.100	0.031	0.043
A1	0.800	0.900	0.031	0.035
A2	0.000	0.100	0.000	0.004
b	0.250	0.400	0.010	0.016
c	0.080	0.177	0.003	0.007
D1	1.600	1.800	0.063	0.071
D	2.300	2.800	0.091	0.110
E	1.150	1.400	0.045	0.055
L	0.475 REF		0.019 REF	
L1	0.100	0.500	0.004	0.020
θ	0°	8°	0°	8°

Recommended Pad Layout



Order Information

Device	Package	Marking	Packaging	SPQ
GSEDC3U2800	SOD-323	333	Tape & Reel	3,000pcs / Reel
GSEDC5U2300	SOD-323	305	Tape & Reel	3,000pcs / Reel
GSEDC8U2000	SOD-323	308	Tape & Reel	3,000pcs / Reel
GSEDC15U750	SOD-323	315	Tape & Reel	3,000pcs / Reel
GSEDC18U500	SOD-323	318	Tape & Reel	3,000pcs / Reel
GSEDC24U540	SOD-323	324	Tape & Reel	3,000pcs / Reel
GSEDC36U500	SOD-323	336	Tape & Reel	3,000pcs / Reel
GSEDC40U360	SOD-323	340	Tape & Reel	3,000pcs / Reel

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