UMW GBLCxxI/CI

1.Description

The GBLCxxI and GBLCxxCI Series are ultra low capacitance transient voltage suppressor arrays, designed to protect applications such as portable electronics and SMART phones. This series is available in both unidirectional and bidi-rectional configurations and is rated at 250W for an 8/20μs waveshape.

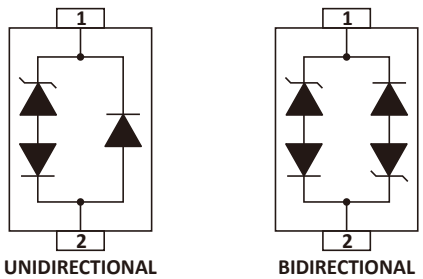
2.Machanical Data

- Molded JEDEC SOD-323 Package
- Approximate Weight: 5 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0
- Patent Pending

3.Features

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV
  Contact -8kV
  Exceeds Level 4: Handles 10kV Contact & 25kV Air Discharge
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
  250W Peak Pulse Power per Line (tp = 8/20μs)
- Replacement for MLV (0805)
- Unidirectional & Bidirectional Configurations
- Protects One Power or I/O Port
- ESD Protection > 25kV
- Low Clamping Voltage
- Ultra Low Capacitance: 0.6pF (Typical)
- RoHS Compliant
- REACH Compliant
- Available in Multiple Voltages Ranging From 3V to 24V

4.Pinning information



SOD-323

5.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs) - See Figure 1	P_{pp}	250	W
Junction Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

6.Electrical Characteristics Per Line @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1 -2)	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE @ 1mA	MAXIMUM CLAMPING VOLTAGE @ I_P=1A	MAXIMUM LEAKAGE CURRENT @V_{WM}	TYPICAL CAPACITANCE @0V, 1MHz
	V_{WM}	$V_{(BR)}$	V_C	I_D	C
	VOLTS	VOLTS	VOLTS	μA	pF
GBLC031	3.0	4.0	7.0	5	0.6
GBLC03CI	3.0	4.0	7.0	5	0.6
GBLCO5I	5.0	6.0	9.8	5	0.6
GBLCO5CI	5.0	6.0	9.8	5	0.6
GBLCO8I	8.0	8.5	13.4	2	0.6
GBLCO8CI	8.0	8.5	13.4	2	0.6
GBLC12I	12.0	13.3	19.0	1	0.6
GBLC12CI	12.0	13.3	19.0	1	0.6
GBLC151	15.0	16.7	24.0	1	0.6
GBLC15CI	15.0	16.7	24.0	1	0.6
GBLC18I	18.0	20.0	29.0	1	0.6
GBLC18CI	18.0	20.0	29.0	1	0.6
GBLC24I	24.0	26.7	43.0	1	0.6
GBLC24CI	24.0	26.7	43.0	1	0.6

Notes:

1. Part numbers with an additional “C” suffix are bidirectional devices, i.e., GBLC05CI.

2. Unidirectional Only: Positive potential is applied from pin 1 to 2.

7.Typical characteristic

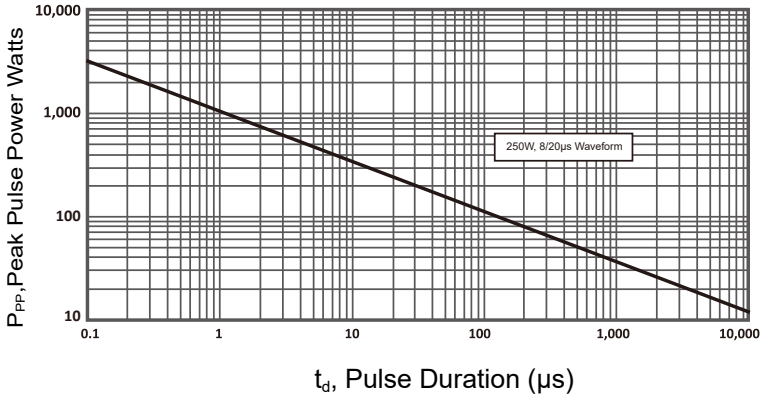


Figure 1: Peak Pulse Power Vs Pulse Time

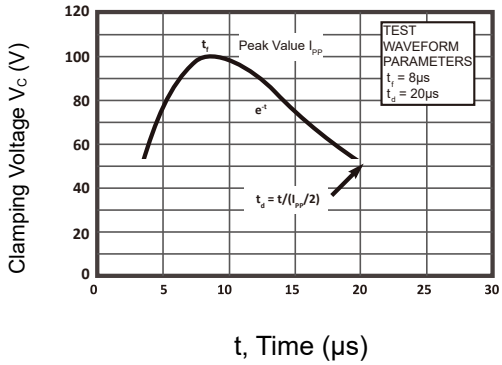
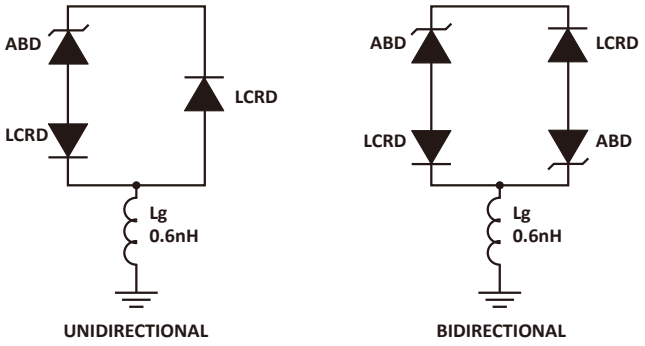


Figure 2: Pulse Wave Form

8.Spice Model

FIGURE 1
SPICE MODEL

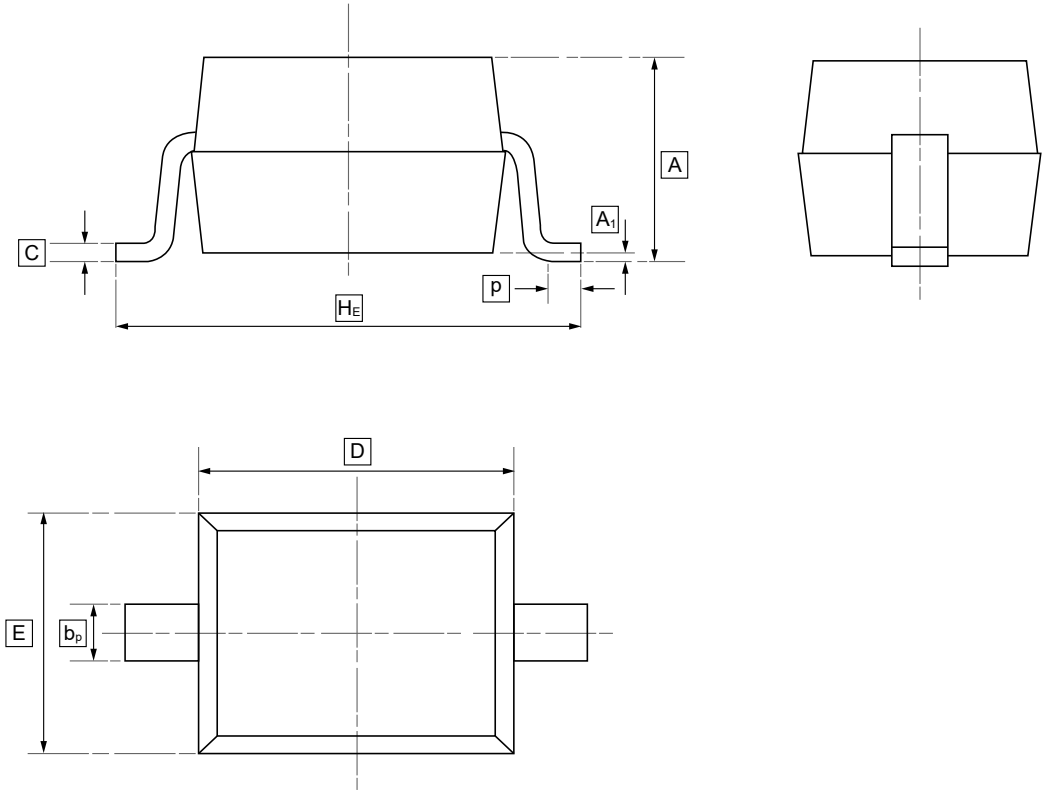


ABD - Avalanche Breakdown Diode (TVS)
LCRD: Low Capacitance Rectifier Diode
Lg - Lead Inductance

TABLE 1 - SPICE PARAMETERS			
Parameter	**Unit**	**ABD(TVS)**	**Lcrd**
BV	V	See Table 2	100
IBV	μA	1	0.6
C_{JO}	pF	See Table 2	0.3
I_S	A	See Table 2	1E-11
V_J	V	0.6	0.6
M		0.33	0.33
N		1	1
R_S	Ohms	See Table 2	0.75
TT	s	1E-8	1E-9
EG	eV	1.11	1.11

Table 2 - Abd Specific Spice Parameters				
Part Number	**B_V(VOLTS)**	**C_{jo}(pF)**	**I_S(AMPS)**	**R_S(OHMS)**
GBLC03I	4.0	200	1E-11	0.22
GBLC051	6.0	140	1E-11	0.18
GBLC08I	8.5	67	1E-11	0.12
GBLC12I	13.3	55	1E-13	1.10
GBLC151	16.7	47	1E-13	1.43
GBLC181	20.0	40	1E-13	2.30
GBLC24I	26.7	28	1E-13	4.24
GBLC03CI	4.0	200	1E-11	0.22
GBLC05CI	6.0	140	1E-11	0.18
GBLC08CI	8.5	67	1E-11	0.12
GBLC12CI	13.3	55	1E-13	1.10
GBLC15CI	16.7	47	1E-13	1.43
GBLC18CI	20.0	40	1E-13	2.3
GBLC24CI	26.7	28	1E-13	4.24

9.SOD-323 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	p
Min	0.80	0.25	0.10	1.50	1.15	2.30	0.01	0.20
Max	1.20	0.40	0.15	1.80	1.35	2.80	0.10	0.50

10.Ordering information



ww: Batch Code

Part Number	Marking code	Package	Base QTY	Delivery Mode
UMW GBLC03I-LF-T7	C	SOD-323	3000	Tape and reel
UMW GBLC03CI-LF-T7	CC	SOD-323	3000	Tape and reel
UMW GBLC05I-LF-T7	A	SOD-323	3000	Tape and reel
UMW GBLC05CI-LF-T7	AC	SOD-323	3000	Tape and reel
UMW GBLC08I-LF-T7	B	SOD-323	3000	Tape and reel
UMW GBLC08CI-LF-T7	BC	SOD-323	3000	Tape and reel
UMW GBLC012I-LF-T7	D	SOD-323	3000	Tape and reel
UMW GBLC012CI-LF-T7	DC	SOD-323	3000	Tape and reel
UMW GBLC015I-LF-T7	E	SOD-323	3000	Tape and reel
UMW GBLC015CI-LF-T7	EC	SOD-323	3000	Tape and reel
UMW GBLC018I-LF-T7	F	SOD-323	3000	Tape and reel
UMW GBLC018CI-LF-T7	FC	SOD-323	3000	Tape and reel
UMW GBLC024I-LF-T7	H	SOD-323	3000	Tape and reel
UMW GBLC024CI-LF-T7	HC	SOD-323	3000	Tape and reel
UMW GBLC12CI-LF-T7	DC	SOD-323	3000	Tape and reel

11.Disclaimer

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