



# GBLCxxCI Series

## Bidirectional TVS Diode Array

### Description

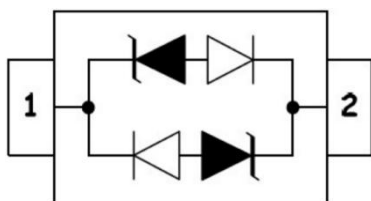
The GBLCxxCI Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

This series has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

### Ordering Information

- Device:GBLCxxCI
- Package:SOD-323
- Material:Halogen free and RoHS compliant
- Packing:Tape & Reel
- Quantity per reel:3,000pcs

### Pin Configuration



### Features

- IEC 61000-4-2(ESD)  $\pm 30\text{kV}$ (Contact)  
 $\pm 30\text{kV}$ (Air)
- IEC61000-4-4(EFT) 40A(5/50ns)
- 450W peak pulse power per ( $t_p=8/20\mu\text{s}$ )
- Protects two bidirectional lines
- Low clamping voltage
- Working voltage: 3.3V to 36V
- Low leakage current

### Mechanical Data

- SOD-323 package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed:  
260°C/10s
- Packaging: Tape and Reel
- Reel size: 7 inch

### Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

### Package Outline





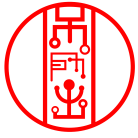
# GBLCxxCI Series

## Absolute Maximum Rating

| Parameter                           | Symbol    | Value    | Unit |
|-------------------------------------|-----------|----------|------|
| ESD per IEC 61000-4-2(Air)          | $V_{ESD}$ | $\pm 30$ | kV   |
| ESD per IEC 61000-4-2(Contact)      |           | $\pm 30$ | kV   |
| Peak Pulse Power(8/20 $\mu$ s)      | $P_{PP}$  | 450      | W    |
| Operating Temperature               | $T_{OPT}$ | -55~+150 | °C   |
| Storage Temperature                 | $T_{STG}$ | -55~+150 | °C   |
| Lead Soldering Temperature(10 sec.) | $T_L$     | 260      | °C   |

## Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ )

| Part Number | Device Marking | $V_{RWM}$<br>(V)<br>(max.) | $V_{BR}$<br>(V)<br>(min.) | $I_T$<br>(mA) | $V_C@1A$<br>(V)<br>(max.) | $V_C$<br>(V)<br>(max.)<br>@A |    | $I_R$<br>( $\mu$ A)<br>(max.) | $C_J$<br>(pF)<br>(typ.) |
|-------------|----------------|----------------------------|---------------------------|---------------|---------------------------|------------------------------|----|-------------------------------|-------------------------|
| GBLC03CI    | CC             | 3.3                        | 4.0                       | 1             | 7.0                       | 18.0                         | 23 | 2                             | 0.8                     |
| GBLC05CI    | AC             | 5.0                        | 6.0                       | 1             | 9.8                       | 19.0                         | 22 | 1                             | 0.8                     |
| GBLC08CI    | BC             | 8.0                        | 8.5                       | 1             | 13.4                      | 24.0                         | 20 | 1                             | 0.8                     |
| GBLC12CI    | DC             | 12.0                       | 13.3                      | 1             | 19.0                      | 29.0                         | 17 | 1                             | 0.8                     |
| GBLC15CI    | EC             | 15.0                       | 16.7                      | 1             | 24.0                      | 34.0                         | 13 | 1                             | 0.8                     |
| GBLC18CI    | FC             | 18.0                       | 20.0                      | 1             | 29.0                      | 50.0                         | 10 | 1                             | 0.8                     |
| GBLC20CI    | GC             | 20.0                       | 22.3                      | 1             | 35.0                      | 53.0                         | 9  | 1                             | 0.8                     |
| GBLC24CI    | HC             | 24.0                       | 26.7                      | 1             | 43.0                      | 55.0                         | 9  | 1                             | 0.8                     |
| GBLC36CI    | IC             | 36.0                       | 40.0                      | 1             | 60.0                      | 75.0                         | 6  | 1                             | 0.8                     |



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## Typical Characteristics

Fig1. 8/20 $\mu$ s Pulse Waveform

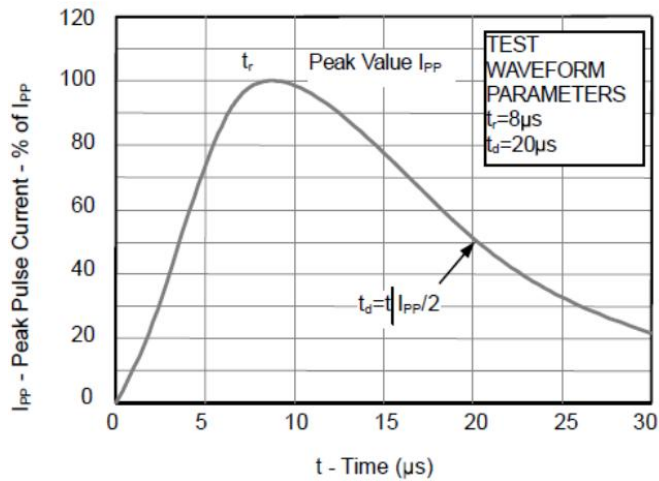


Fig2. Contact Discharge Current Waveform ( IEC 61000-4-2)

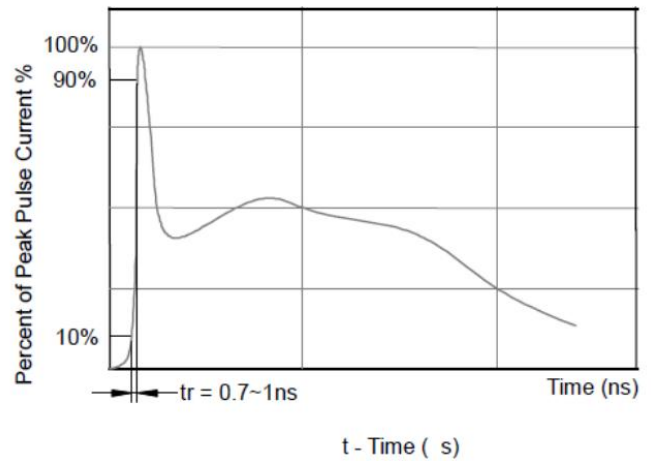


Fig3 Clamping Voltage vs Peak Pulse Current

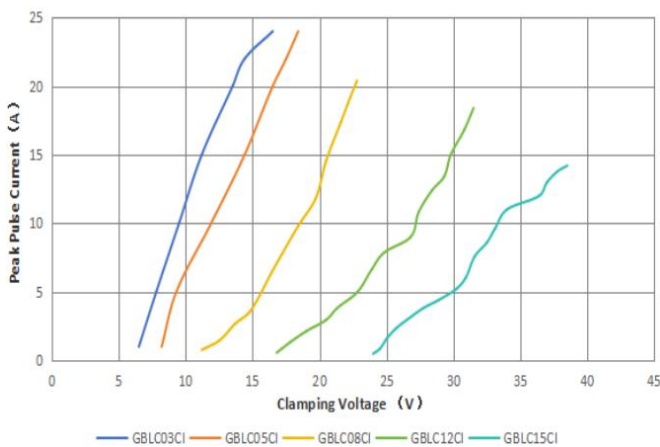


Fig4 Clamping Voltage vs Peak Pulse Current

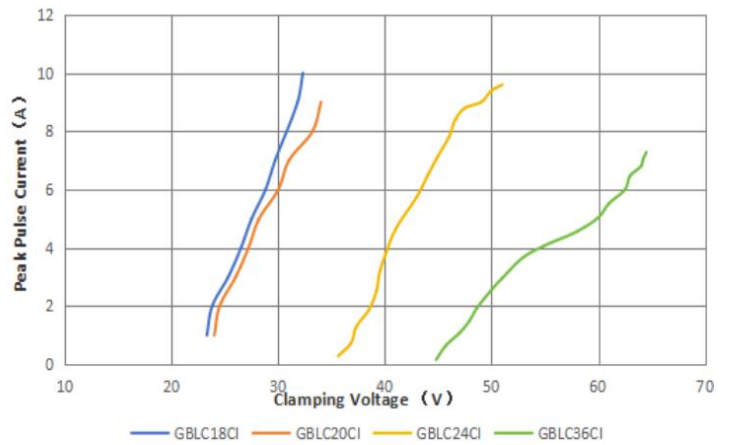
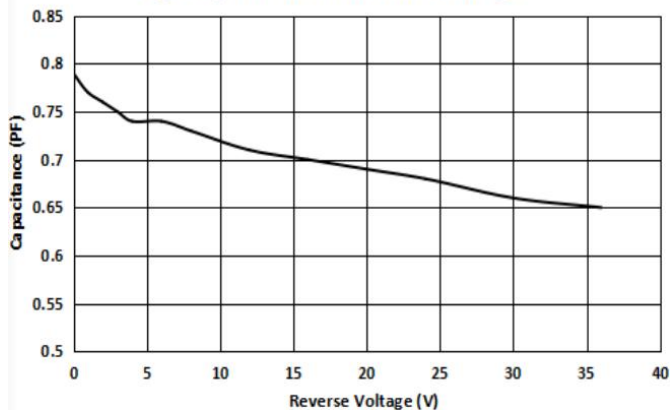


Fig5 Capacitance vs Reverse Voltage



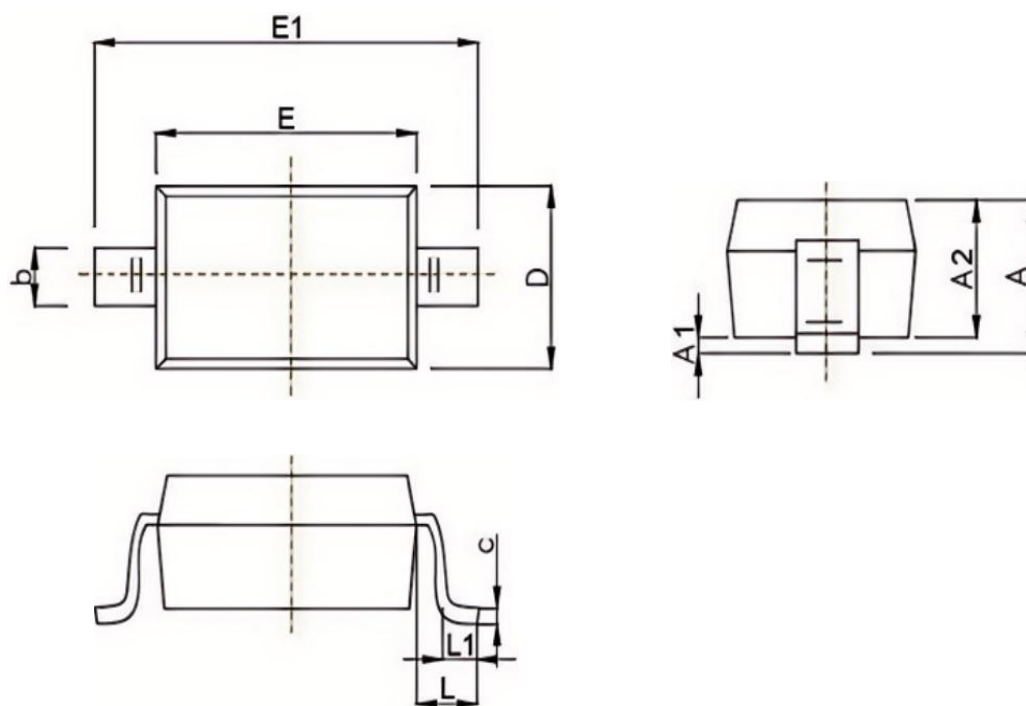


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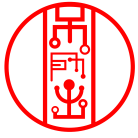
## Package Information

### SOD-323

#### Dimensions in mm



| Symbol   | Dimensions In Millimeters |       |
|----------|---------------------------|-------|
|          | Min                       | Max   |
| A        |                           | 1.00  |
| A1       | 0.000                     | 0.100 |
| A2       | 0.800                     | 0.900 |
| b        | 0.250                     | 0.350 |
| c        | 0.080                     | 0.150 |
| D        | 1.200                     | 1.400 |
| E        | 1.600                     | 1.800 |
| E1       | 2.500                     | 2.700 |
| e        | 1.800                     | 2.040 |
| L        | 0.475 REF                 |       |
| L1       | 0.250                     | 0.400 |
| $\theta$ | 0°                        | 8°    |



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