

### SOD-323 Plastic-Encapsulate ESD Protection Diodes

## DESCRIPTION

The 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 bidirectional configurations and is rated at 350 Watts for an 8/20 $\mu$ s wave shape.

The GBLCxxCI and Series meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This series offers a ultra low capacitance and low leakage current in a miniature SOD-323 package.

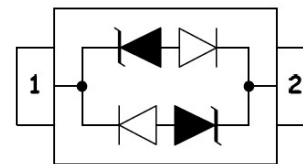
## Features

- ◆ Peak Power Dissipation 350 W (8/20 $\mu$ s)
- ◆ IEC61000-4-2 (ESD)  $\pm$ 30kV (air),  $\pm$ 30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects one I/O line (bidirectional)
- ◆ Low clamping voltage
- ◆ Working voltages : 3.3V, 5V, 8V, 12V, 15V, 18V, 20V,24V,36V
- ◆ Response Time is < 1 ns
- ◆ Meets MSL 1 Requirements

## Pin Configuration



## Circuit Diagram



## Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ USB Interface

## Mechanical Characteristics

- ◆ Package: SOD-323
- ◆ Flammability Rating: UL 94V-0
- ◆ High temperature soldering guaranteed: 260  $^{\circ}$ C/10s
- ◆ Packaging: Tape and Reel

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

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm$ 30	kV
ESD per IEC 61000-4-2 (Contact)		$\pm$ 30	
Peak Pulse Power(tp=8/20us waveform)	P <sub>PP</sub>	350	W
Operating Temperature	T <sub>OPT</sub>	-55 to +150	$^{\circ}$ C
Storage Temperature	T <sub>STG</sub>	-55 to +150	$^{\circ}$ C
Lead Solder Temperature – Maximum (10 Second Duration)	T <sub>L</sub>	260(10 sec.)	$^{\circ}$ C

The above data are for reference only.



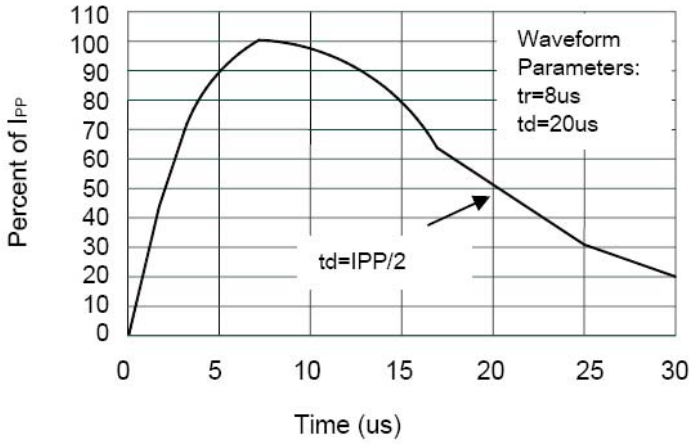
# GBLCxxCI Series

## Bi-directional Ultra Low Capacitance TVS Array

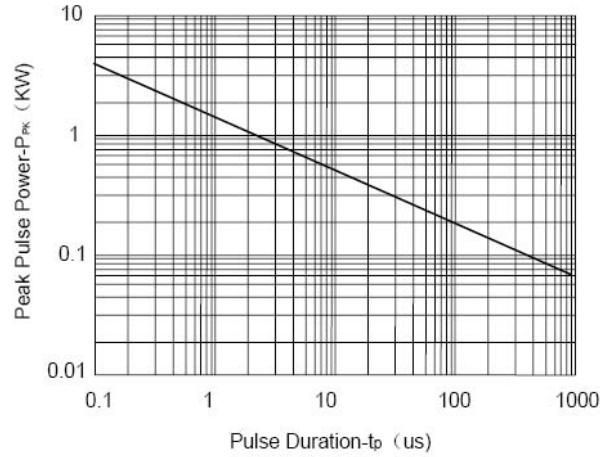
### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

PART NUMBER	DEVICE MARKING	$V_{RWM}$ (V)	$V_B@1mA$ (V)	$V_C@1A$ (V)	$V_C@I_{pp}$ (V)		$V_C@I_{pp}$ (V)		$I_R$ ( $\mu\text{A}$ )	$C_T$ (pF)
		Max	Min	Max	Max	$I_{pp}$ (A)	Max	$I_{pp}$ (A)	Max	Typ.
GBLC03CI	CC	3.3	4.0	7.0	13.9	8	20.0	20	0.1	0.8
GBLC05CI	AC	5.0	6.0	9.8	18.3	8	20.0	18	0.1	0.8
GBLC08CI	BC	8.0	8.5	13.4	18.5	8	24.0	18	0.1	0.8
GBLC12CI	DC	12.0	13.3	19.0	24.0	6	28.6	12	0.1	0.8
GBLC15CI	EC	15.0	16.7	24.0	29.0	5	31.8	10	0.1	0.8
GBLC18CI	FC	18.0	20.0	35.0	45.0	5	53.0	7	0.1	0.8
GBLC20CI	GC	20.0	22.0	38.0	45.0	4	55.0	7	0.1	0.8
GBLC24CI	HC	24.0	26.7	43.0	45.0	3	56.0	6	0.1	0.8
GBLC36CI	IC	36.0	40.0	60.0	65.0	2	75.0	4.5	0.1	0.8

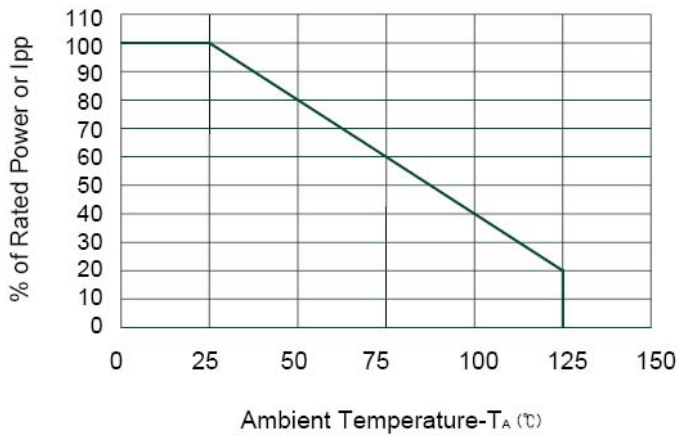
### ELECTRICAL CHARACTERISTICS CURVE



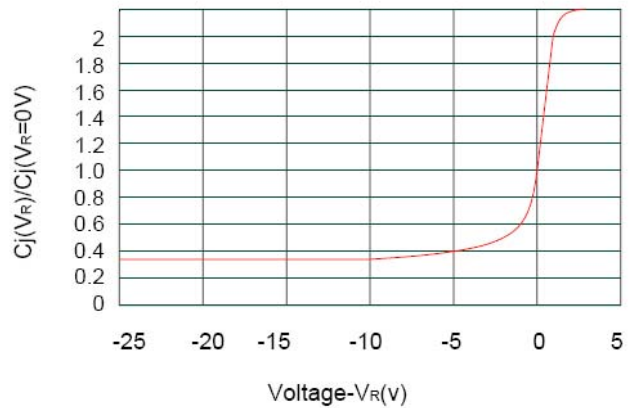
**Pulse Waveform**



**Non-Repetitive Peak Pulse Power vs. Pulse Time**



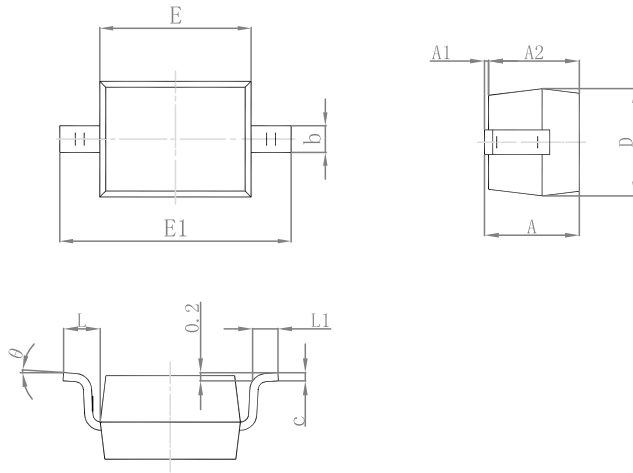
**Power Derating Curve**



**Junction Capacitance vs. Reverse Voltage**

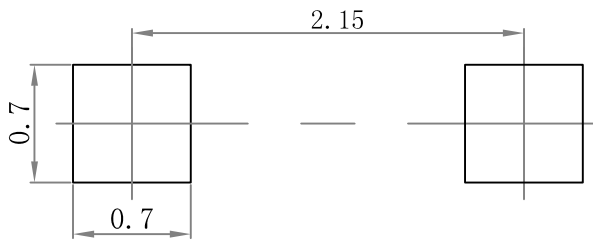
### Outline Drawing

#### SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.032	0.043
A1	0.00	0.20	0.000	0.008
A2	0.70	1.05	0.028	0.042
b	0.20	0.40	0.007	0.016
C	0.05	0.20	0.0019	0.0079
D	1.10	1.45	0.043	0.057
E	1.40	1.80	0.063	0.070
E1	2.50	2.80	0.098	0.110
L	0.35	0.60	0.014	0.024
L1	0.15	0.45	0.006	0.016
θ	0°	9°	0°	9°

### Suggested Pad Layout



Note:

1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOD-323	7'	178	3000	183×188×80	45,000	386×265×215	180,000