

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

## DESCRIPTION

The GBLCxxC 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 300 Watts for an 8/20 $\mu$ s wave shape.

The GBLCxxC 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.

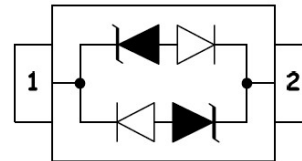
## Features

- ◆ Peak Power Dissipation 300W (8/20 $\mu$ s)
- ◆ IEC61000-4-2 (ESD)  $\pm$ 15kV (air),  $\pm$ 8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects one I/O line (bidirectional)
- ◆ Low clamping voltage
- ◆ Working voltages : 3V, 5V, 8V, 12V, 15V, 24V
- ◆ Response Time is < 1 ns
- ◆ Meets MSL 1 Requirements

## Pin Configuration



## Circuit Diagram



## Mechanical Characteristics

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

## Applications

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

## Absolute Maximum Ratings (T<sub>A</sub>=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>	300	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.



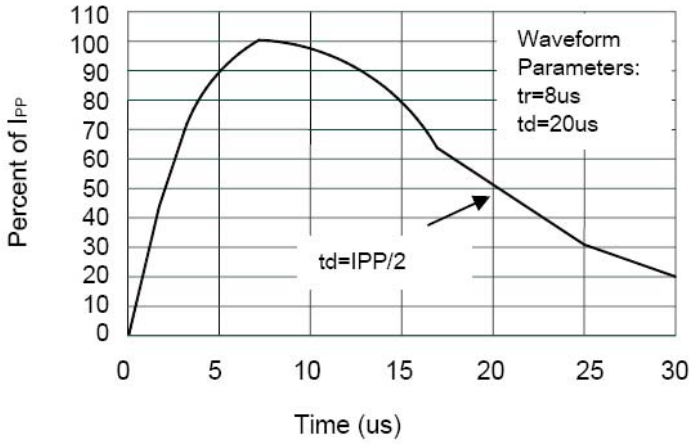
## GBLCxxC Series

### Bi-directional Ultra Low Capacitance TVS Array

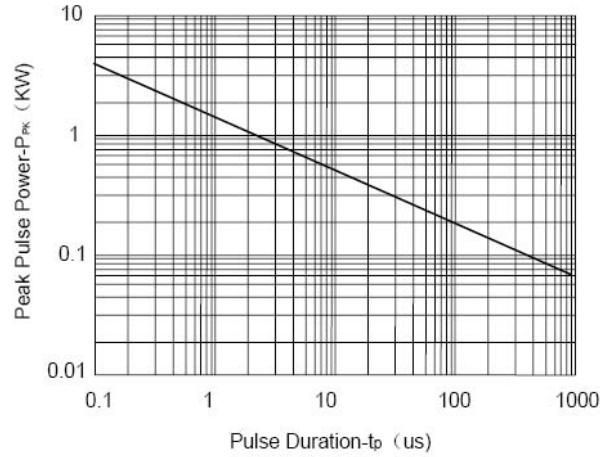
#### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

PART NUMBER	DEVICE MARKING	$V_{RWM}$	$V_B$	$I_T$	$V_C@1A$	$V_C$		$I_R$	$C_T$
		(V) (max.)	(V) (min.)	(mA)	(V) (max.)	(V) (max.)	(@A)	( $\mu\text{A}$ ) (max.)	(pF) (typ.)
GBLC03C	CC	3.3	4.0	1	7.0	13.9	8	2	0.8
GBLC05C	AC	5.0	6.0	1	9.8	18.3	8	1	0.8
GBLC08C	BC	8.0	8.5	1	13.4	18.5	8	1	0.8
GBLC12C	DC	12.0	13.3	1	19.0	28.6	6	1	0.8
GBLC15C	EC	15.0	16.7	1	24.0	31.8	5	1	0.8
GBLC24C	HC	24.0	26.7	1	43.0	56.0	3	1	0.8

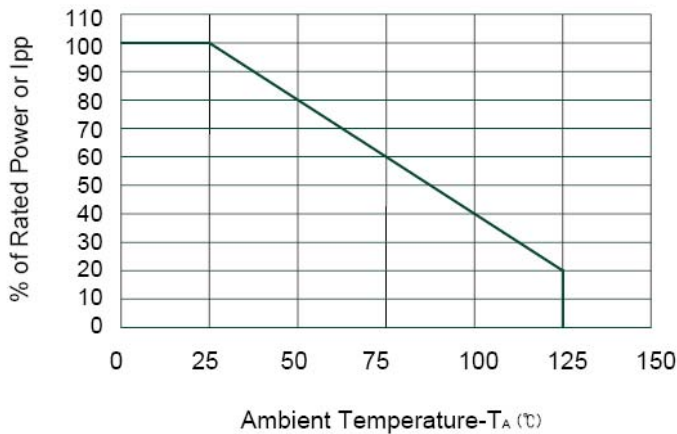
### ELECTRICAL CHARACTERISTICS CURVE



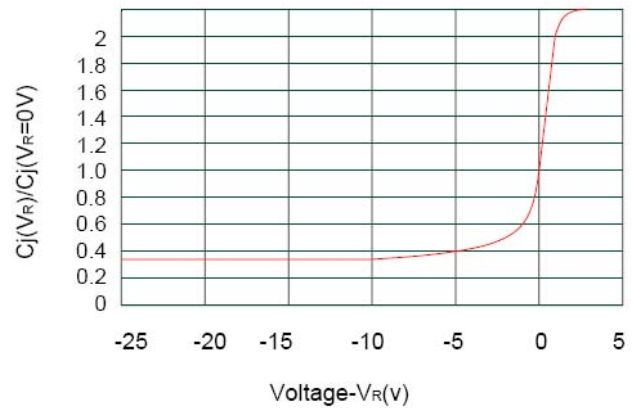
**Pulse Waveform**



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



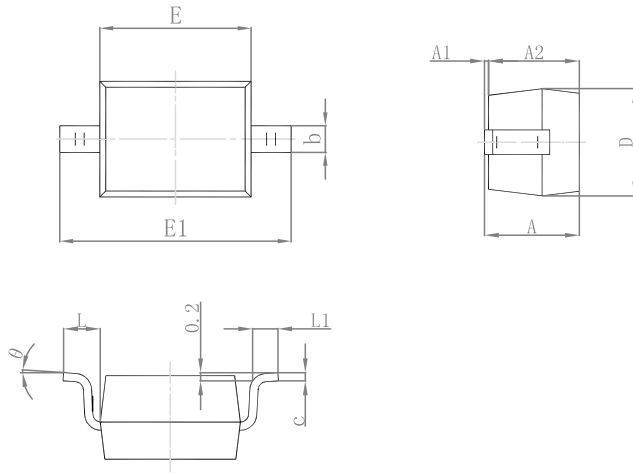
**Power Derating Curve**



**Junction Capacitance vs. Reverse Voltage**

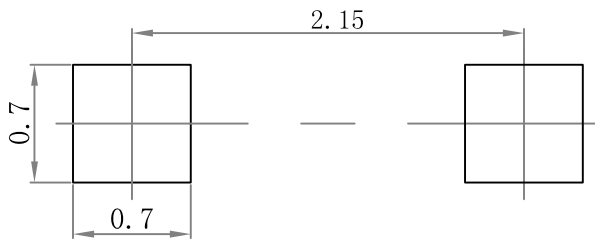
### Outline Drawing

#### 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:  $\pm 0.05$ 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