SPECIFICATION SHEET

SMD ESD PROTECTION DIODES CASE SOD-323 GBLC SERIES

SPECIFICATION SHEET NO.	S0427- GBLC05C000S0AC	
ORIGINAL MFG/PART NO.	MDD Diodes/GBLC05C/SOD323LC05CSAC	
NEXTGEN PART CODE	GBLC05C000S0AC	Indicate This Code For RFQ /Order
DATE	Apr. 27, 2025	
REVISION	A3	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Plastic-Encapsulate ESD Protection Diodes TVs Array, GBLC Series Case SOD-323, 2 Pads, Ultra Low Capacitance, Bi-Directional Type Reverse Working Voltage (V_{RWM}): 5.0V Clamping Voltage (V_C): 9.8VC Max.@1.0A Operating Temperature Range (T_{OPT}) -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE			
Issued/Checked/Approved	Mandy Xu	Ruby Zhang	Jack Zhang
Effective Date: Apr. 27, 2025			

CUSTOMER APPROVE
Date:

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 8/20µs wave shape. The GBLCxxC 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.

Image shown is a representation only. Exact specifications should be obtained from the product dimension.

MAIN FEATURE

- Peak Power Dissipation: 300W (8/20µs)
- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 12A (8/20µs)
- Protects one directional I/O line
- Low Clamping Voltage
- Response Time is < 1 ns
- Working voltages: 3V, 5V, 8V, 12V, 15V, 24V
- Meet MSL 1 Requirement
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)

APPLICATION

- Cell phone Handsets And Accessories
- Microprocessor Based Equipment and Personal Digital Assistants (PDA's)
- Notebooks, Desktops And Servers
- Portable Instrumentation/Peripherals/USB Interface

ELECTRICAL CHARACTERISTICS

- See Page 5 ~Page 6.
- All Parameters are Subject To NextGen Components' Final Confirmation

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code GBLC05C000S0AC For RFQ and Order.

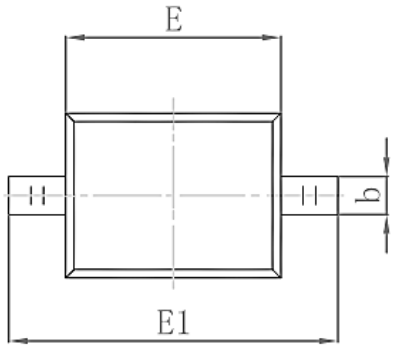
PART CODE GUIDE

RFQ
Request For Quotation

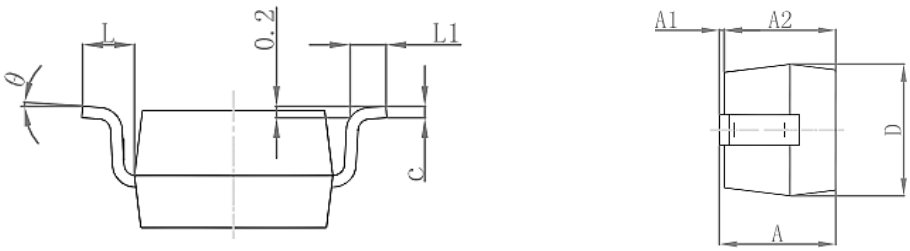
CODE	NAME	KEY SPECIFICATION OPTION
GBLC	Product Series Code	SMD Plastic-Encapsulate ESD Protection Diodes TVs Array Case SOD-323, 2 pads, Bi-Directional Type
05C	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
000S0	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
AC	Marking Code	Marking "AC" or See Marking list For different part code
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 0~9) for Special Parametric Blank: N/A

DIMENSION- Unit: mm, Case SOD-323 Outline

Top View

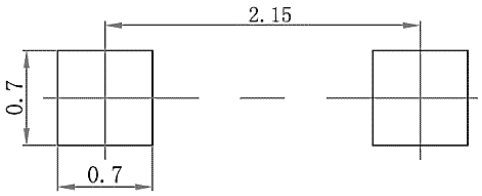


Side View

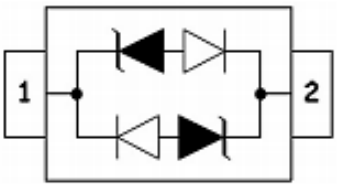


SYMBOL	DIMENSION (MM)		DIMENSION (INCH)	
	MIN.	MAX.	MIN.	MAX.
A	0.80	1.10	0.032	0.043
A1	0.00	0.20	0.000	0.008
A2	0.70	1.05	0.028	0.042
b	0.20	0.40	0.007	0.016
C	0.05	0.20	0.0019	0.0079
D	1.10	1.45	0.043	0.057
E	1.40	1.80	0.063	0.070
E1	2.50	2.80	0.098	0.110
L	0.35	0.60	0.014	0.024
L1	0.15	0.45	0.006	0.016
θ	0 °	9 °	0 °	9 °

Recommend Pad Layout - Tolerance: ±0.05mm



Circuit Diagram



MECHANICAL CHARACTERISTICS

CASE	FLAMMABILITY RATING	TERMINALS	MARKING
JEDEC SOD-323 molded plastic body	UL 94V-0	High temperature soldering guaranteed: 260℃/10s	See Marking list For different part code

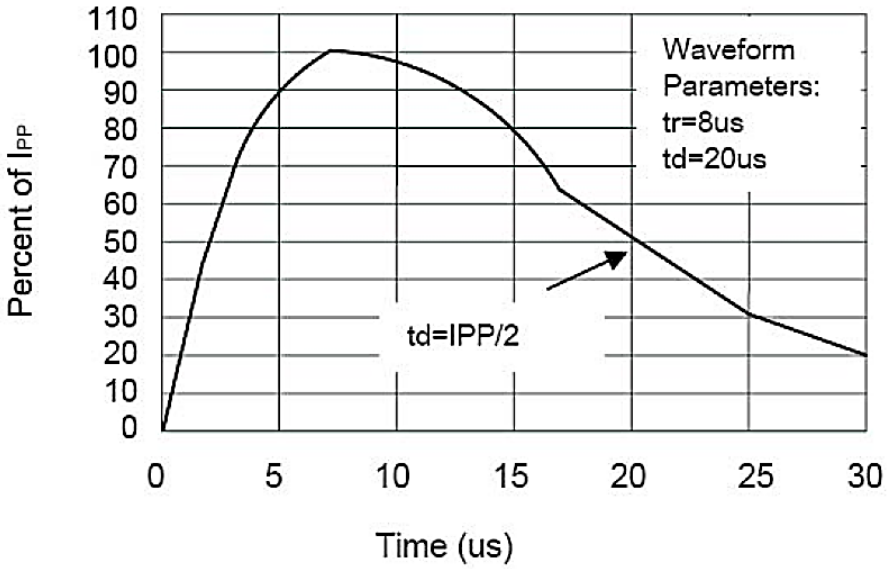
ABSOLUTE MAX. RATING & CHARACTERISTICS - T_A=25°C unless otherwise specified, For Reference Only

PARAMETER	SYMBOLS	VALUE	UNITS
ESD per IEC 61000-4-2 (Air)	V_{ESD}	±15	KV
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±8	KV
Peak Pulse Power(tp=8/20us waveform)	P_{PP}	300	W
Operating Temperature Range	T_{OPT}	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C
Lead Solder Temperature- Max. (10s Duration)	T_L	260 /10s	°C

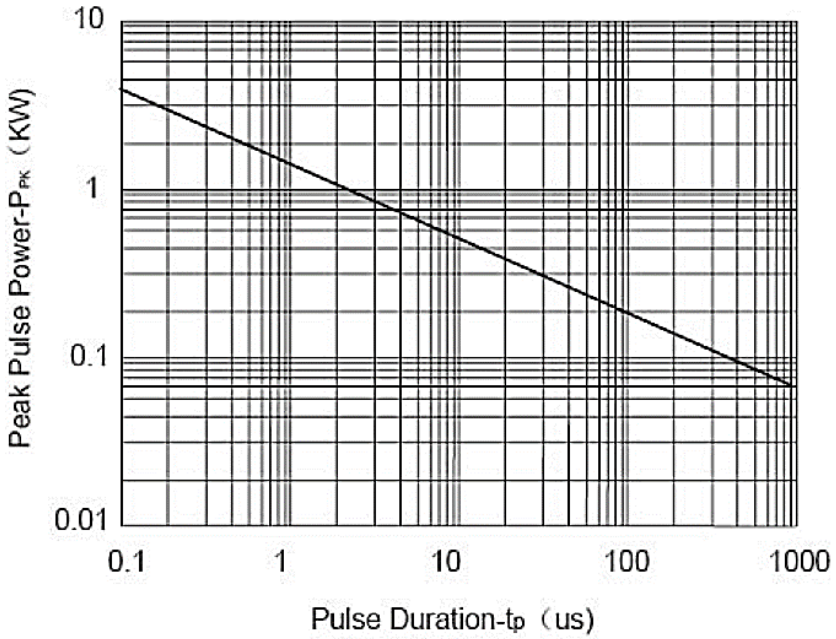
ELECTRICAL CHARACTERISTICS - T_A=25°C unless otherwise specified, For Reference Only

PART CODE	MAX. V_{RWM}	MIN. V_B	I_T	V_C				MAX. I_R	TYP. C_T	MARKING LIST
				MAX.	@A	MAX.	@A			
	V	V	mA	V		V		µA	PF	
GBLC03C000S0CC	3.0	4.0	1.0	7.0	1.0	13.9	8.0	2.0	0.8	CC
GBLC05C000S0AC	5.0	6.0	1.0	9.8	1.0	18.3	8.0	1.0	0.8	AC
GBLC08C000S0BC	8.0	8.5	1.0	13.4	1.0	18.5	8.0	1.0	0.8	BC
GBLC12C000S0DC	12	13.3	1.0	19.0	1.0	28.6	6.0	1.0	0.8	DC
GBLC15C000S0EC	15	16.7	1.0	24.0	1.0	31.8	5.0	1.0	0.8	EC
GBLC24C000S0HC	24	26.7	1.0	43.0	1.0	56.0	3.0	1.0	0.8	HC

RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

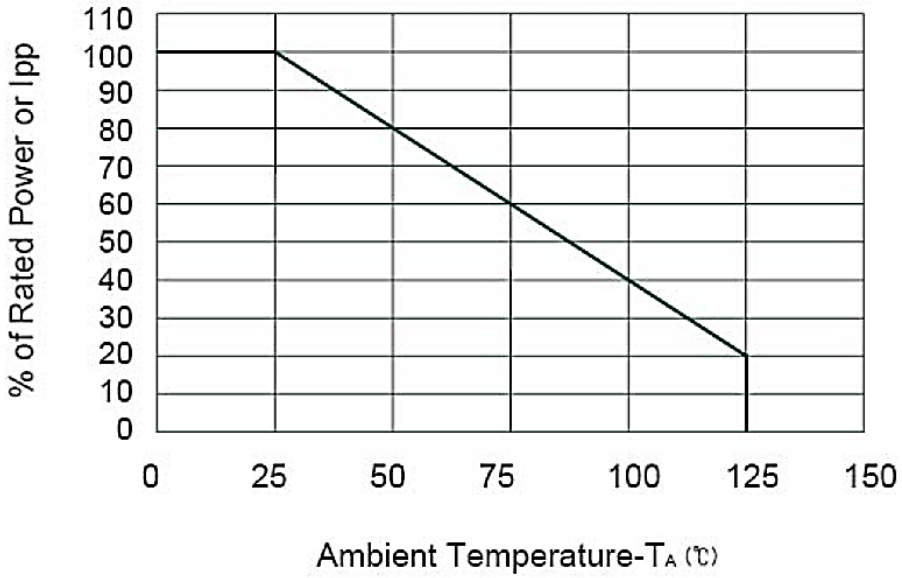


Pulse Waveform

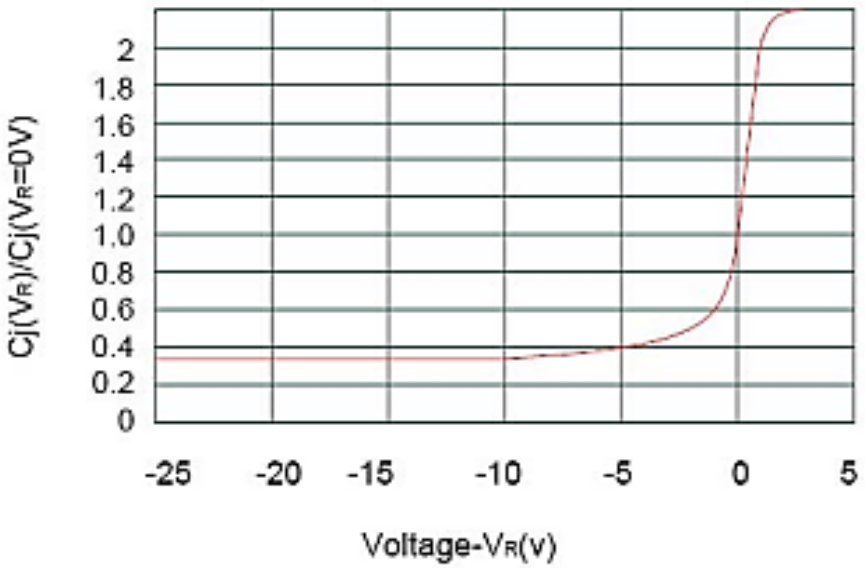


Non-Repetitive Peak Pulse Power vs. Pulse Time

RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

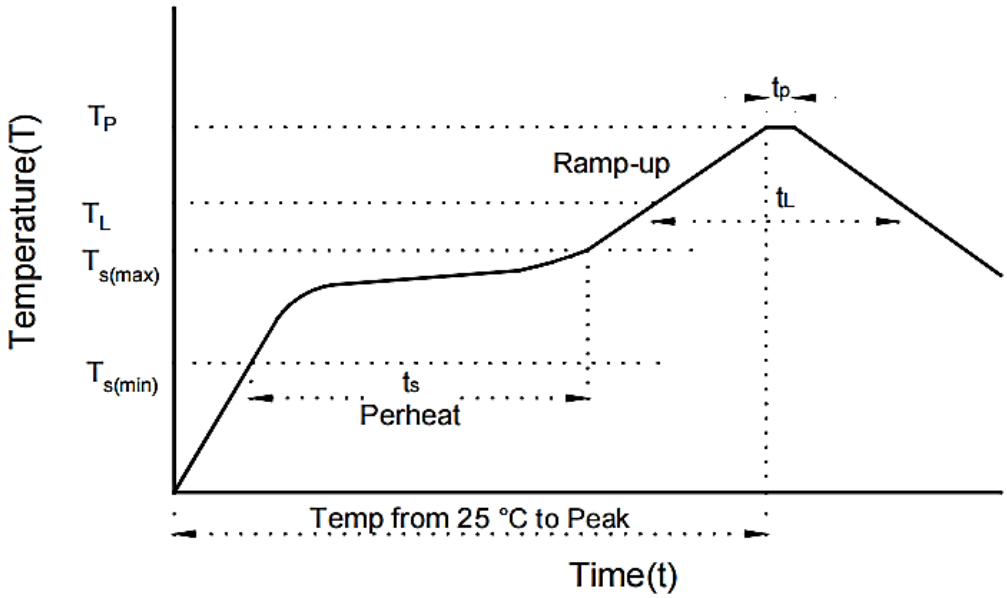


Power Derating Curve



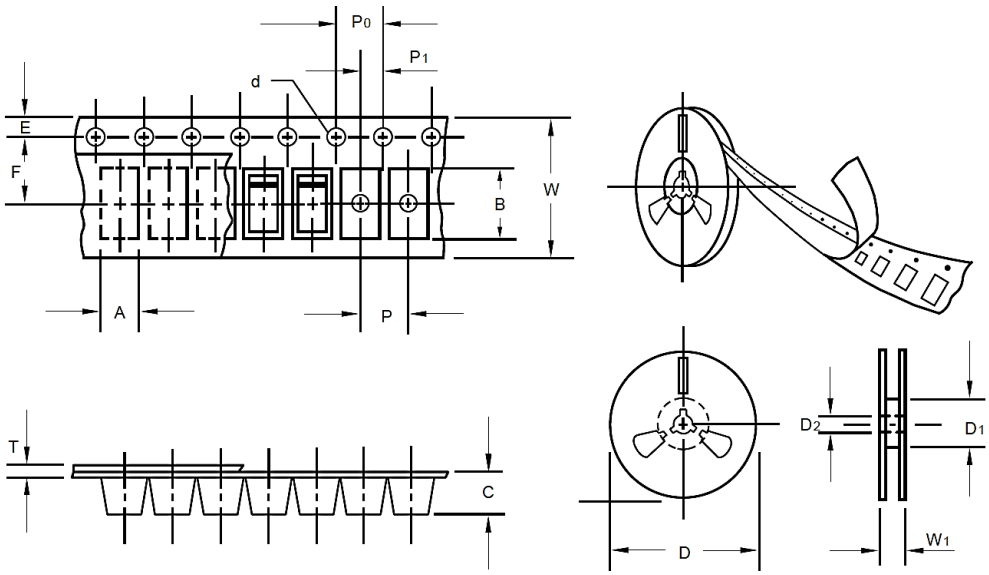
Junction Capacitance vs. Reverse Voltage

RECOMMENDED SOLDERING PARAMETERS – FOR REFERENCE ONLY



PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (T_L Max to T_p)		3°C/second Max
Preheat	Temperature Min (T_s Min.)	150°C
	Temperature Max (T_s Max.)	200°C
	Time (t_s Min. to t_s Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (T_p)		260 °C
Time within 5°C of actual Peak Temperature (t_p)		10 seconds Max.
Ramp-down Rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 Minutes Max.
Suggest reflow times		3 Times Max.

TAPE/REEL - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications



ITEM	SYMBOL	TOLERANCE	SO-323
Carrier width	A	0.1	1.46
Carrier Length	B	0.1	2.90
Carrier Depth	C	0.1	1.25
Sprocket hole	d	0.05	1.55
7”Reel outside diameter	D	2.0	178
7”Reel inner diameter	D1	Min.	50.0
Feed hole diameter	D2	0.5	13.0
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.06
Tape width	W	0.3	8.00
Reel width	W1	1.0	12.3
Qty. Per Reel (pcs)	3000		

IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
5. *NextGen* makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does *NextGen* assume any liability for application assistance or customer product design.
6. *NextGen* does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application. No license is granted by implication or otherwise under any intellectual property rights of NextGen.
7. *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen.*
8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.