




<b>SPECIFICATION SHEET NO.</b>	S0427- SD03C00000S02A	
<b>ORIGINAL MFG/PART NO.</b>	MDD Diodes/SD03C	
<b>NEXTGEN PART CODE</b>	SD03C00000S02A	Indicate This Code For <a href="#">RFQ</a> /Order
<b>DATE</b>	Apr. 27, 2025	
<b>REVISION</b>	A3	Updated With Most Recent Data
<b>DESCRIPTION AND MAIN PARAMETRICS</b>	<p>SMD Plastic-Encapsulate ESD Protection Diodes, SD Series</p> <p>Case SOD-323, 2 Pads, Bi-Directional Type</p> <p>Reverse Working Voltage (VRWM): 3.3V</p> <p>Clamping Voltage (Vc): 7.5VC Max.@1.0A</p> <p>Operating Temperature Range (TOPT) -55°C ~+150°C</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p>	
<b>CUSTOMER</b>		
<b>CUSTOMER PART NUMBER</b>		
<b>CROSS REF. PART NUMBER</b>		
<b>MEMO</b>		

<b>VENDOR APPROVE</b>
<div> <div>Issued/Checked/Approved</div> <div>    </div> </div>
Effective Date: Apr. 27, 2025

<b>CUSTOMER APPROVE</b>
Date:

## DESCRIPTION

The SDxxC 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).



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

## MAIN FEATURE

- 350 Watts Peak Pulse Power per (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, 20V, 24V, 36V
- 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 and Networking and Telecom
- Serial/Parallel Ports/Peripherals

## 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 SD03C00000S02A For RFQ and Order.

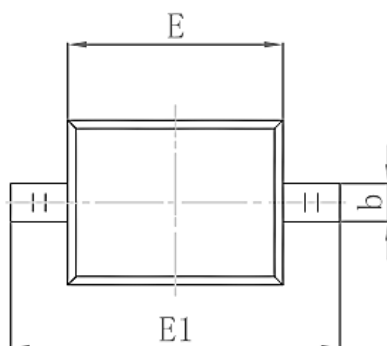
## PART CODE GUIDE

**RFQ**  
Request For Quotation

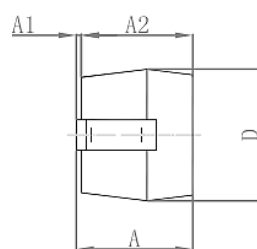
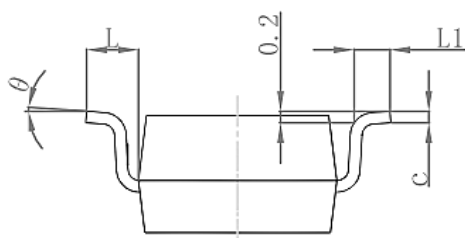
CODE	NAME	KEY SPECIFICATION OPTION
SD	Product Series Code	SMD Plastic-Encapsulate ESD Protection Diodes, Case SOD-323, 2 pads, Bi-Directional Type
03C	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
00000S0	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
2A	Marking Code	Marking "2A" or See 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



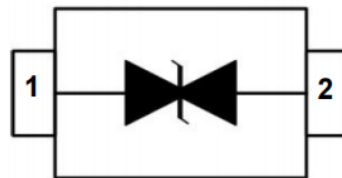
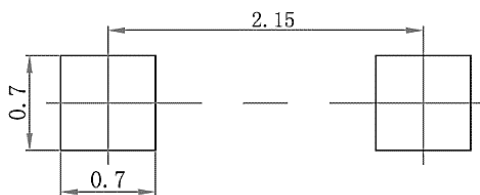
Side View



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
$\theta$	0 °	9 °	0 °	9 °

Recommend Pad Layout - Tolerance:  $\pm 0.05\text{mm}$ 

Circuit Diagram



## MECHANICAL CHARACTERISTICS

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

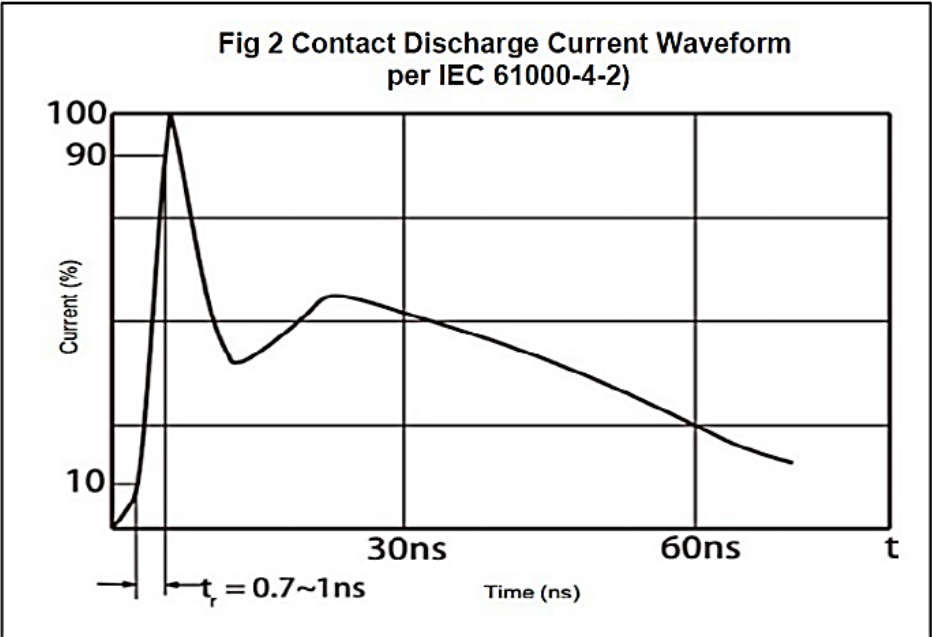
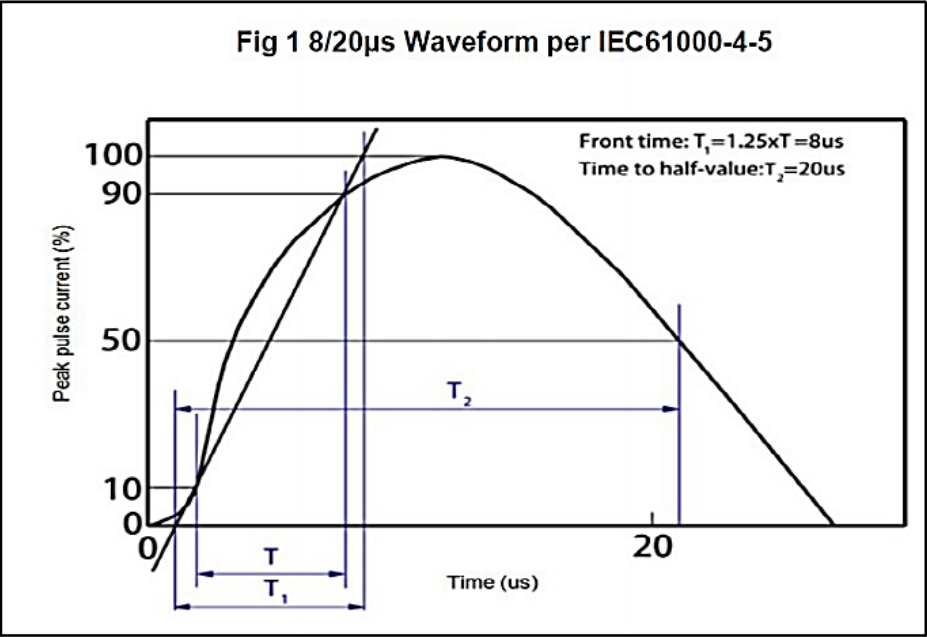
## ABSOLUTE MAX. RATING & CHARACTERISTICS - $T_A=25^\circ\text{C}$ unless otherwise specified, For Reference Only

PARAMETER	SYMBOLS	VALUE	UNITS
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	KV
ESD per IEC 61000-4-2 (Contact)	VESD	$\pm 30$	KV
Peak Pulse Power( $t_p=8/20\mu\text{s}$ waveform)	PPP	350	W
Operating Temperature Range	TOPT	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	TSTG	-55 ~ +150	$^\circ\text{C}$
Lead Solder Temperature- Max. (10s Duration)	TL	260 /10s	$^\circ\text{C}$

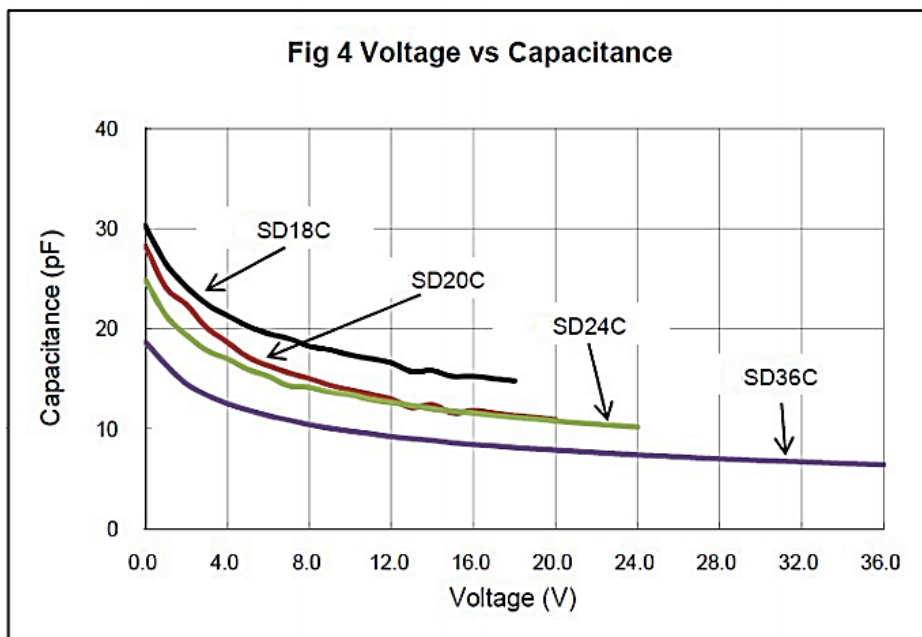
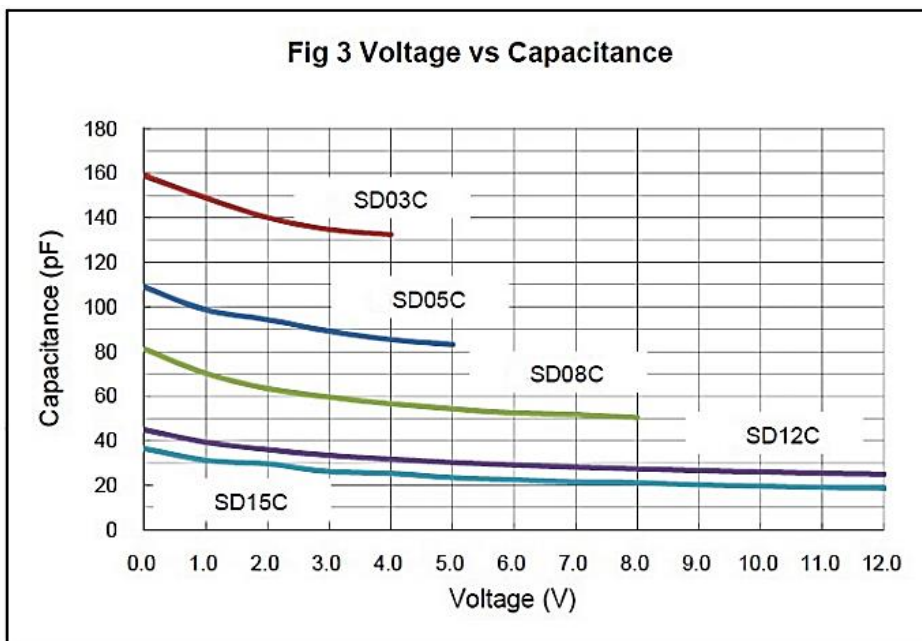
**ELECTRICAL CHARACTERISTICS** - TA=25°C unless otherwise specified, For Reference Only

PART CODE	MAX.	MIN.	IT	VC				MAX.	MAX.	MARKING LIST
	V RWM	VB		MAX.	@A	MAX.	@A	IR	CT	
	V	V		V		V		μA	PF	
<a href="#">SD03C00000S02A</a>	3.3	4	1	7.5	1	16	20	40	450	2A
SD05C00000S02B	5	6	1	9.8	1	18	17	10	300	2B
SD08C00000S02C	8	8.5	1	13.4	1	24	15	1	120	2C
SD12C00000S02D	12	13.3	1	19	1	32	11	1	75	2D
SD15C00000S02J	15	16.7	1	24	1	38	10	1	68	2J
SD18C00000S02K	18	20	1	29	1	45	9	1	57	2K
SD20C00000S02L	20	22.3	1	35	1	50	8	1	52	2L
SD24C00000S02H	24	26.7	1	43	1	52	7	1	50	2H
SD36C00000S02N	36	40	1	60	1	75	4.5	1	35	2N

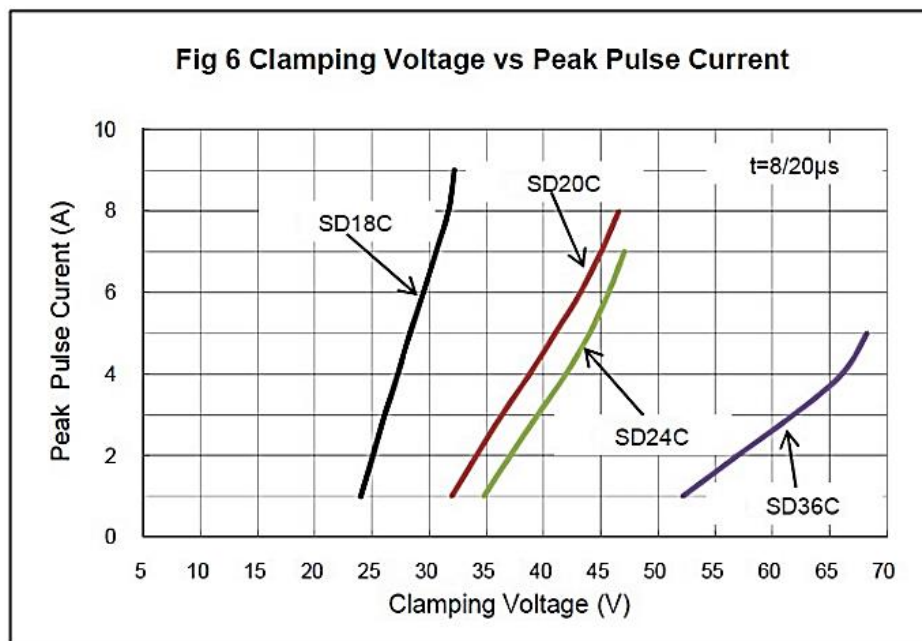
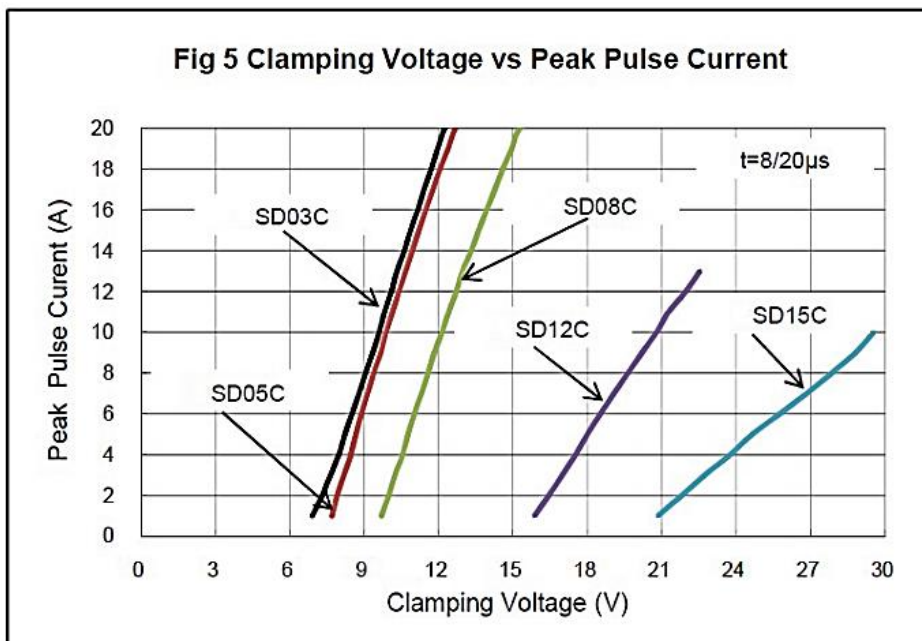
**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only, Ta=25°C Unless Otherwise Specified.

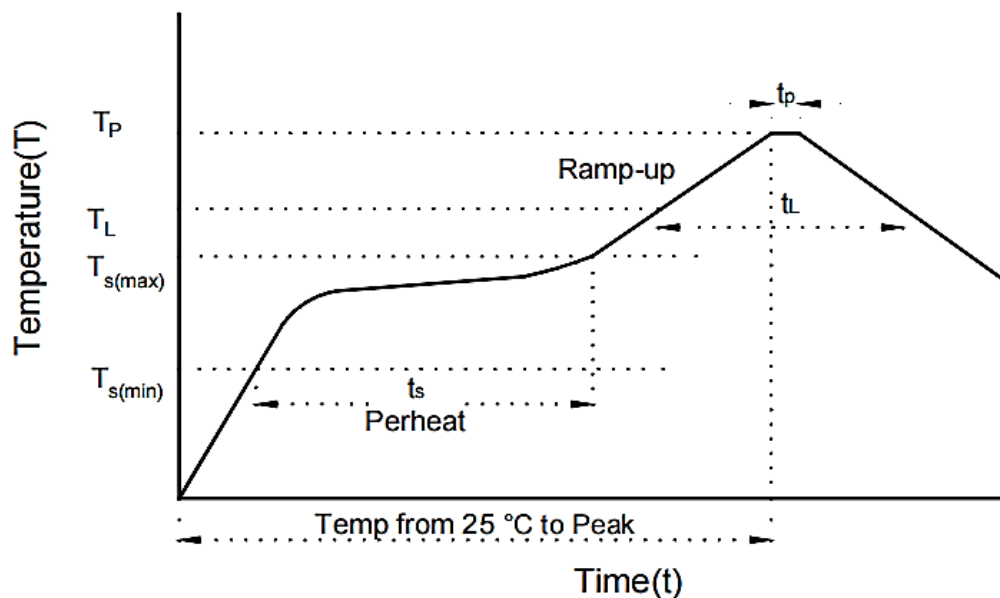


**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only, Ta=25°C Unless Otherwise Specified.



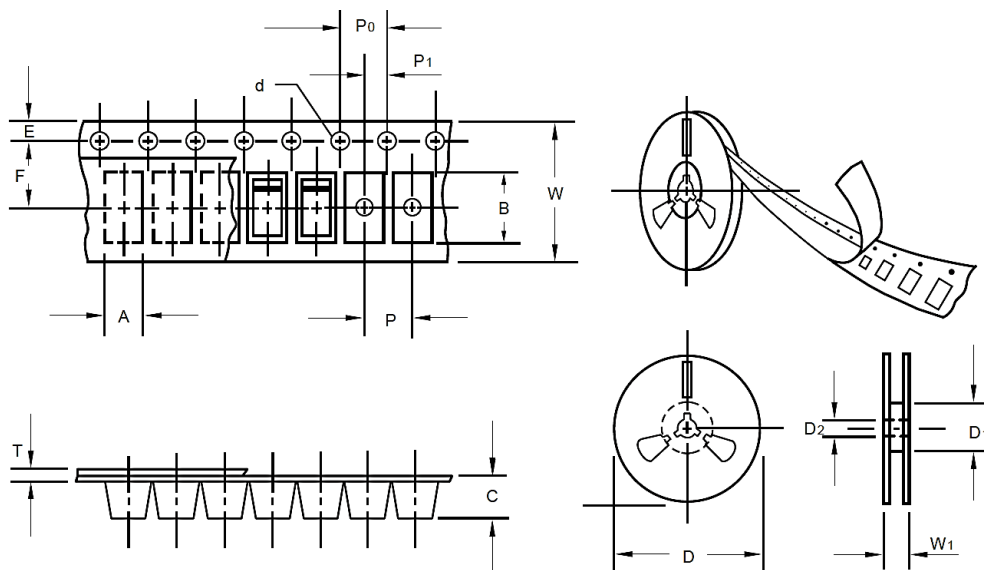
**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only, Ta=25°C Unless Otherwise Specified.



**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 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 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, nor 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.