DESCRIPTION

The SDxx 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 (8/20μs)
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Protects one I/O line (Unidirectional)
- 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 SD03000000S03W For RFQ and Order.

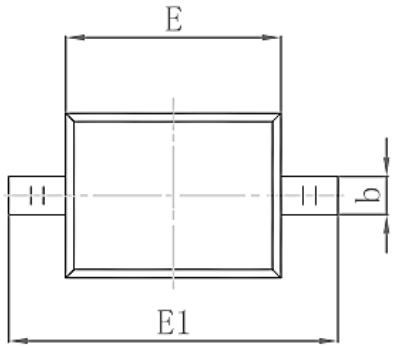
PART CODE GUIDE

RFQ
Request For Quotation

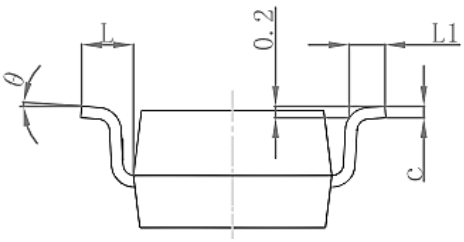
CODE	NAME	KEY SPECIFICATION OPTION
SD	Product Series Code	SMD Plastic-Encapsulate ESD Protection Diodes, Case SOD-323, 2 pads, Uni-Directional Type
03	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
000000S	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
03W	Marking Code	Marking "03W" or 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

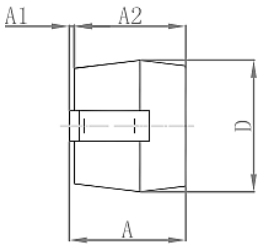
DIMENSION- Unit: mm, Case SOD-323 Outline

Top View



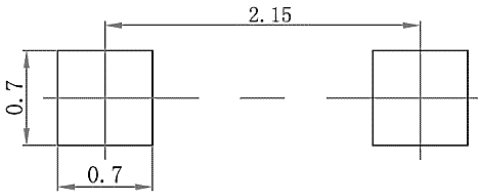
Side View



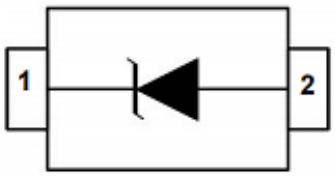


SYMBOL	DIMENSION (MM)		DIMENSION (INCH)	
	MIN.	MAX.	MIN.	MAX.
A	0.80	1.10	0.032	0.043
A1	0.00	0.20	0.000	0.008
A2	0.70	1.05	0.028	0.042
b	0.20	0.40	0.007	0.016
C	0.05	0.20	0.0019	0.0079
D	1.10	1.45	0.043	0.057
E	1.40	1.80	0.063	0.070
E1	2.50	2.80	0.098	0.110
L	0.35	0.60	0.014	0.024
L1	0.15	0.45	0.006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

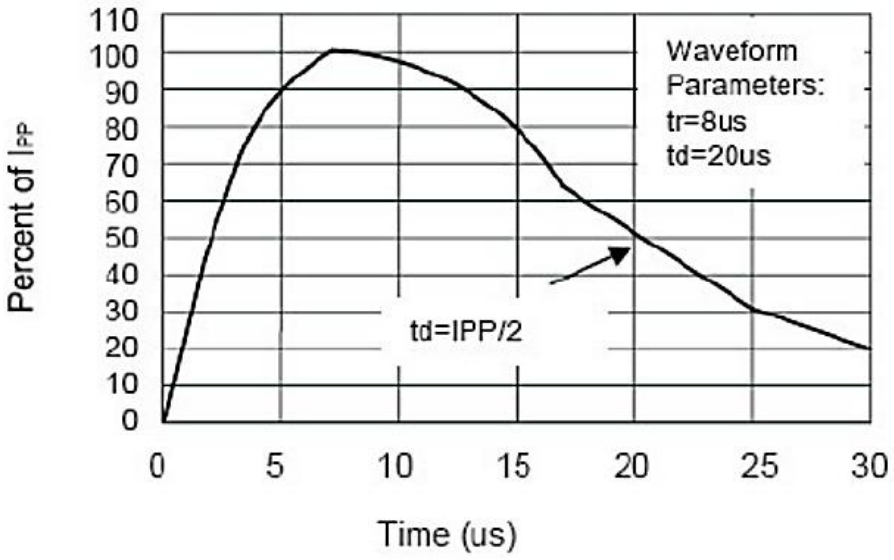
ABSOLUTE MAX. RATING & CHARACTERISTICS - T_A=25°C unless otherwise specified, For Reference Only

PARAMETER	SYMBOLS	VALUE	UNITS
ESD per IEC 61000-4-2 (Air)	V_{ESD}	±30	KV
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±30	KV
Peak Pulse Power(tp=8/20us waveform)	P_{PP}	350	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

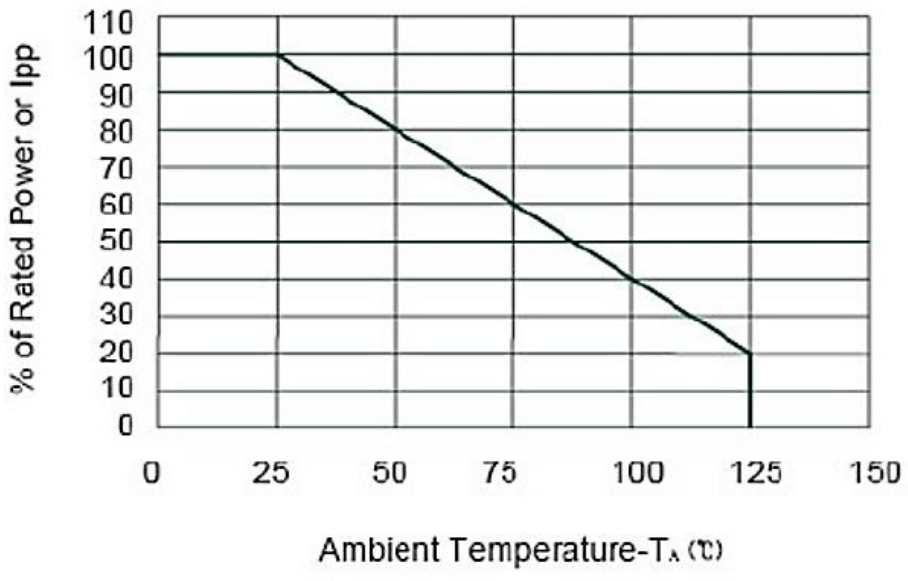
ELECTRICAL CHARACTERISTICS - T_A=25°C unless otherwise specified, For Reference Only

PART CODE	MAX. V_{RWM}	MIN. V_B	I_T	V_C				MAX. I_R	MAX. C_T	MARKING LIST
				MAX.	@A	MAX.	@A			
	V	V	mA	V		V		µA	PF	
SD03000000S03W	3.3	4	1	6.5	1	14	20	40	450	03W
SD05000000S05W	5	6	1	9.8	1	18	17	10	300	05W
SD08000000S08W	8	8.5	1	10.5	1	24	15	1	240	08W
SD12000000S12W	12	13.3	1	19	1	32	11	1	130	12W
SD15000000S15W	15	16.7	1	24	1	38	10	1	120	15W
SD18000000S18W	18	20	1	29	1	45	9	1	100	18W
SD20000000S20W	20	22.3	1	35	1	50	8	1	90	20W
SD24000000S24W	24	26.7	1	43	1	52	7	1	80	24W
SD36000000S36W	36	40	1	60	1	75	5	1	60	36W

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

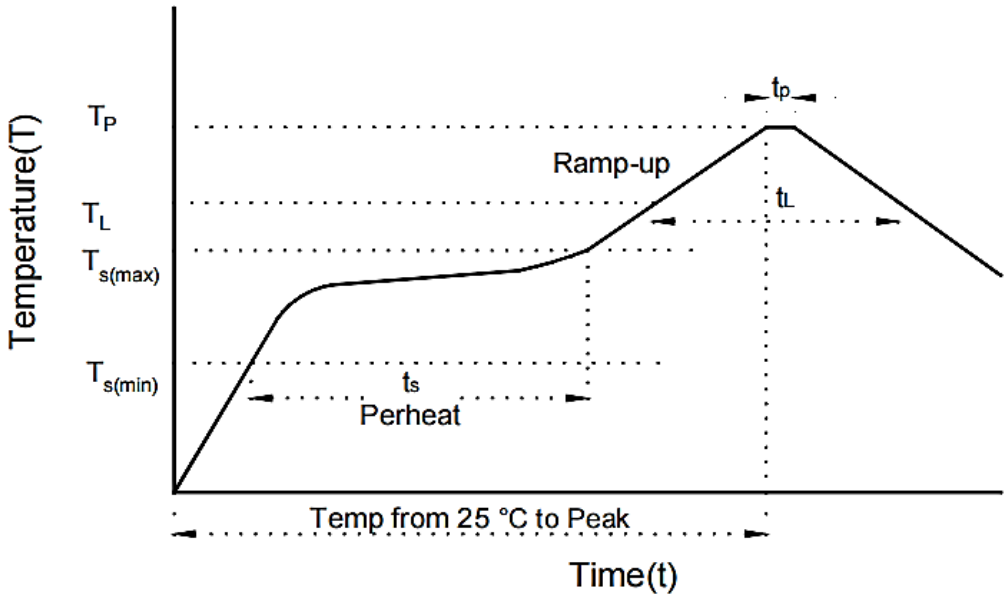


Pulse Waveform



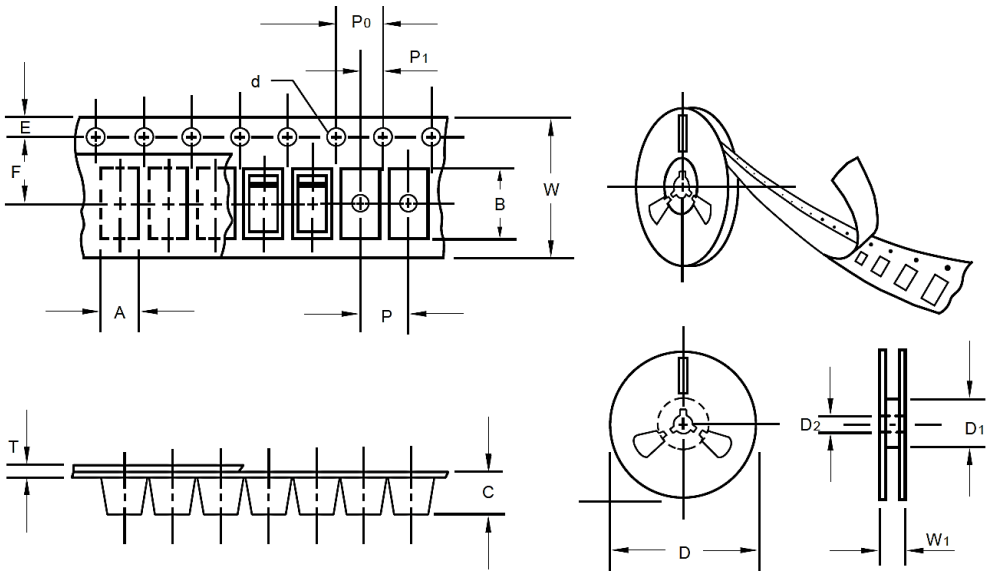
Power Derating Curve

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.
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