SDxxC Series

Bi-directional TVS Diodes

SOD-323 Plastic-Encapsulate ESD Protection Diodes

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).

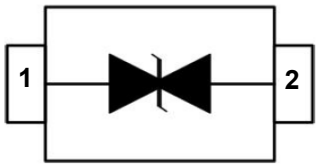
Features

- 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 (bidirectional)
- Low clamping voltage
- Low leakage current
- Working voltages : 3V, 5V, 8V, 12V, 15V, 18V, 20V, 24V, 36V
- Meets MSL 1 Requirements

Pin Configuration

RoHS COMPLIANT

Circuit Diagram



Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

Mechanical Characteristics

- Package: SOD-323
- Flammability Rating: UL 94V-0
- Terminal: Matte tin plated.
- High temperature soldering guaranted: 260℃/10s
- Packaging: Tape and Reel

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	± 30 ± 30	KV
Peak Pulse Power(tp=8/20us waveform)	P_{PP}	350	W
Operating Temperature	T_{OPT}	−55 to +150	°C
Storage Temperature	T_{STG}	−55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260(10 sec.)	°C

The above data are for reference only.

Electrical Characteristics (T_A=25°C unless otherwise specified)

PART NUMBER	DEVICE MARKING	V_{RWM} (V) (max.)	V_B (V) (min.)	I_T (mA)	V_C@1A (V) (max.)	V_C (V) (max.)	(@A)	I_R (μA) (max.)	C_T (pF) (max.)
SD03C	2A	3.3	4	1	7.5	16	20	40	450
SD05C	2B	5	6	1	9.8	18	17	10	300
SD08C	2C	8	8.5	1	13.4	24	15	2	120
SD12C	2D	12	13.3	1	19	32	11	1	75
SD15C	2J	15	16.7	1	24	38	10	1	68
SD18C	2K	18	20.0	1	29	45	9	1	57
SD20C	2L	20	22.3	1	35	50	8	1	52
SD24C	2H	24	26.7	1	43	52	7	1	50
SD36C	2N	36	40	1	60	75	4.5	1	35

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ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20μs Waveform per IEC61000-4-5

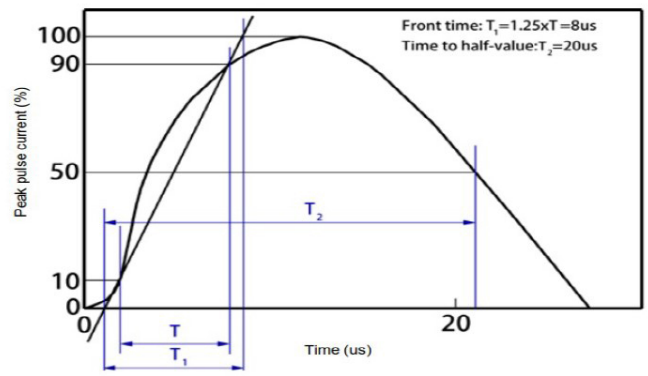


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

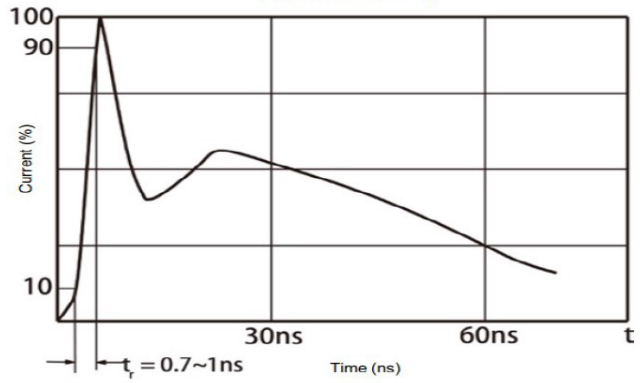


Fig 3 Voltage vs Capacitance

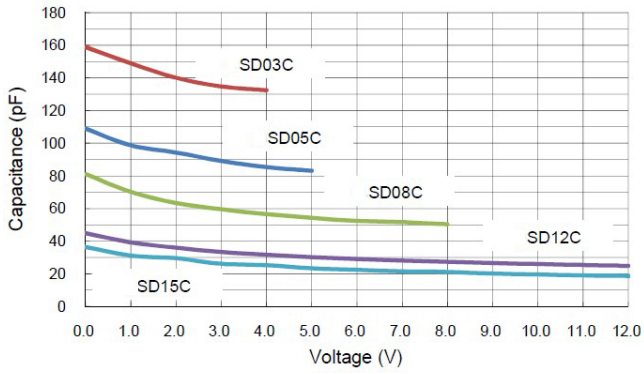


Fig 4 Voltage vs Capacitance

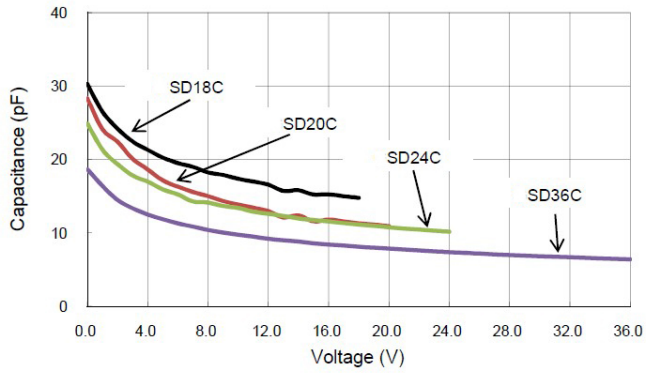


Fig 5 Clamping Voltage vs Peak Pulse Current

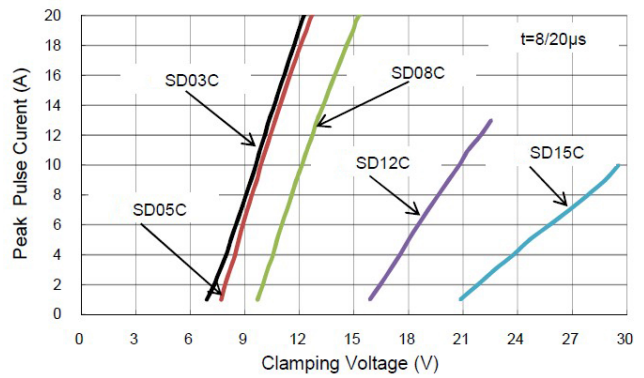
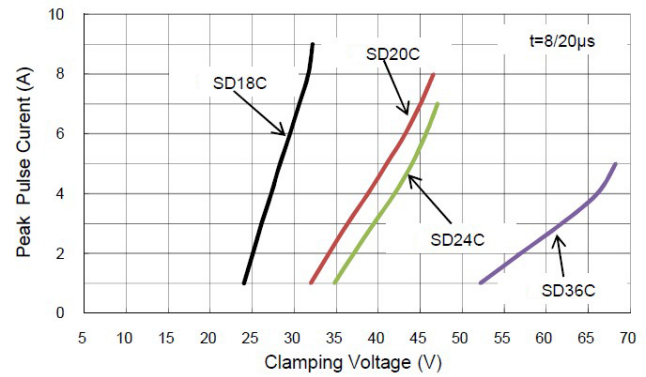


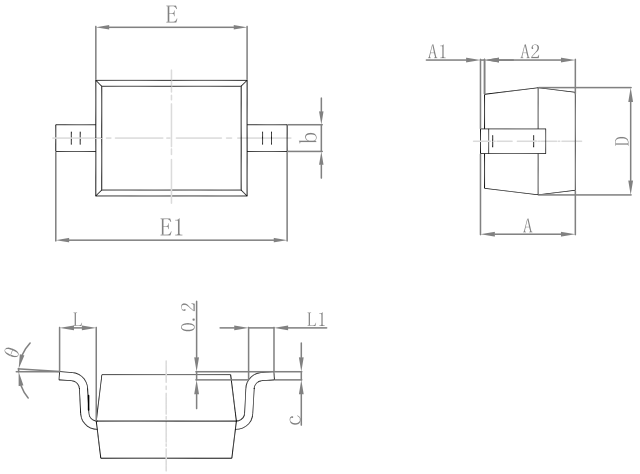
Fig 6 Clamping Voltage vs Peak Pulse Current



The curve above is for reference only.

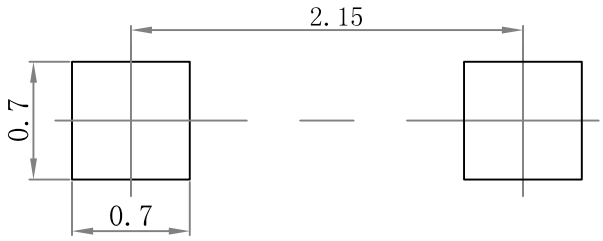
Outlitne Drawing

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: ±0.05mm.
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