

SOD-323 Plastic-Encapsulate ESD Protection Diodes

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).

Features

- ♦ 350 Watts Peak Pulse Power per (8/20µs)
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- Protects one I/O line (unidirectional)
- Low clamping voltage
- Low leakage current
- Working voltages: 3V, 5V, 12V, 15V, 18V, 20V, 24V, 36V
- Meets MSL 1 Requirements

Applications

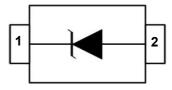
- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

Pin Configuration





Circuit Diagram



Mechanical Characteristics

◆ Package: SOD-323

Flammability Rating: UL 94V-0

♦ 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)	Vesd	± 15 ± 8	KV
Peak Pulse Power(tp=8/20us waveform)	P _{PP}	350	W
Operating Temperature	T _{OPT}	−55 to +150	°C
Storage Temperature	Tstg	−55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260(10 sec.)	°C

The above data are for reference only.



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

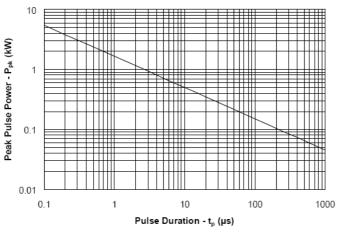
PART NUMBER	DEVICE MARKING	V _{RWM} (V) (max.)	V _B (V) (min.)	I _T (mA)	V _C @1A (V) (max.)	V (V (max.)		I _R (μΑ) (max.)	C _T (pF) (max.)
SD03	03W	3.3	4	1	6.5	14	20	40	450
SD05	05W	5	6	1	9.8	18	17	10	300
SD12	12W	12	13.3	1	19	32	11	1	130
SD15	15W	15	16.7	1	24	38	10	1	120
SD18	18W	18	20.0	1	29	45	9	1	100
SD20	20W	20	22.3	1	35	50	8	1	90
SD24	24W	24	26.7	1	43	52	7	1	80
SD36	36W	36	40	1	60	75	5	1	60

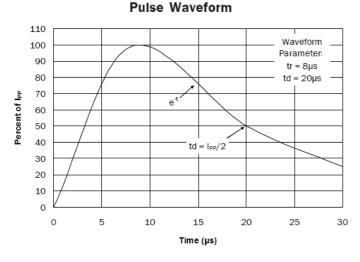
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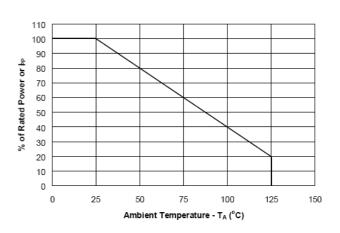
ELECTRICAL CHARACTERISTICS CURVE

Non-Repetitive Peak Pulse Power vs. Pulse Time

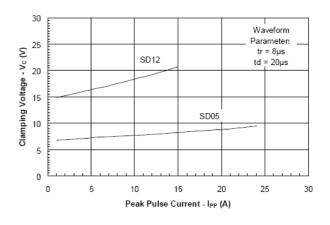




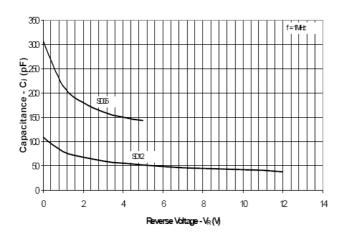
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

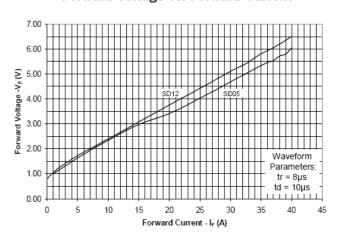


Capacitance vs. Reverse Voltage



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Forward Voltage vs. Forward Current

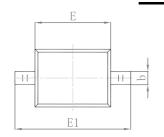


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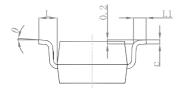


Outlitne Drawing

SOD-323 Package Outline Dimensions

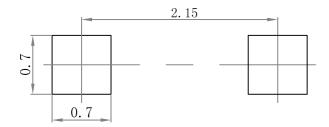






Symbol	Dimensions	In Millimeters	Dimensions In Inches		
Syllibol	Min.	Max.	Min.	Max.	
Α		1.000		0.039	
A1	0.000	0.100	0.000	0.004	
A2	0.800	0.900	0.031	0.035	
b	0.250	0.350	0.010	0.014	
С	0.080	0.150	0.003	0.006	
D	1.200	1.400	0.047	0.055	
E	1.600	1.800	0.063	0.071	
E1	2.550	2.750	0.100	0.108	
L,	0.475	REF.	0.019	REF.	
L1	0.250	0.400	0.010	0.016	
θ	0°	8°	0°	8°	

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

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