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

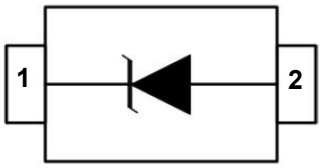
- 350 Watts Peak Pulse Power per (8/20μs)
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Protects one I/O line (unidirectional)
- Low clamping voltage
- Low leakage current
- Working voltages : 3.3V, 5V, 8V,12V, 15V, 18V, 20V,24V,36V
- Meets MSL 1 Requirements

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

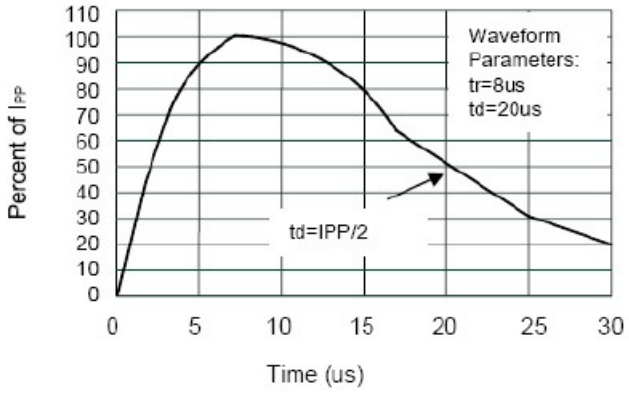
The above data are for reference only.

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

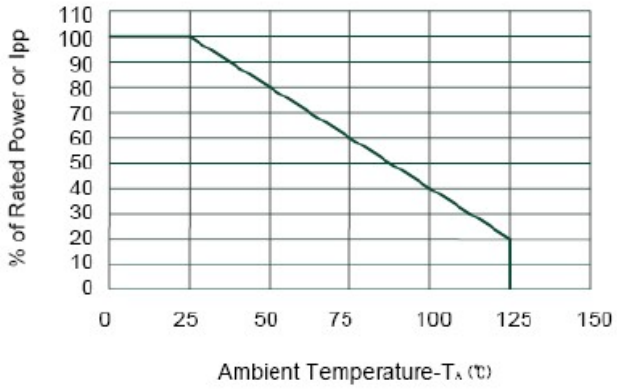
PART NUMBER	DEVICE MARKING	V_{RWM} (V) (max.)	V_B (V) (min.)	I_T (mA)	V_C@1A (V) (max.)	V_C (V) (max.)	(@A)	I_R (μA) (max.)	C_T (pF) (max.)
SD03	03W	3.3	4	1	6.5	14	20	40	450
SD05	05W	5	6	1	9.8	18	17	10	300
SD08	08W	8	8.5	1	10.5	24	15	1	240
SD12	12W	12	13.3	1	19	32	11	1	130
SD15	15W	15	16.7	1	24	38	10	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



Pulse Waveform

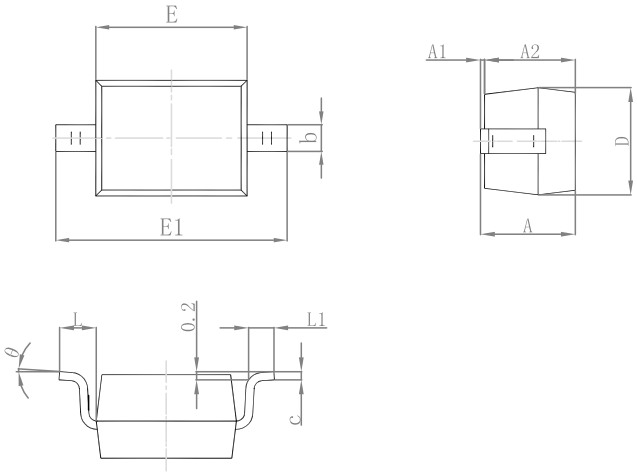


Power Derating Curve

The curve above is for reference only.

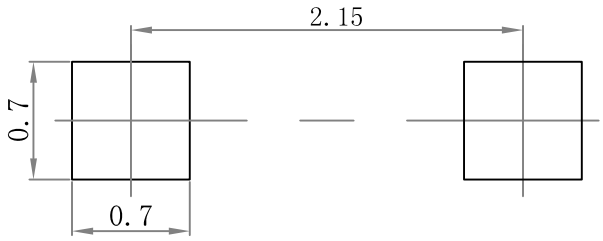
Outlitne Drawing

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	190*190*190	45,000	400*400*220	180,000