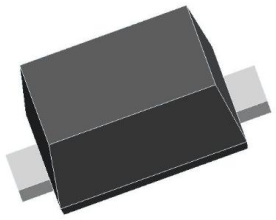
Technical Data
Data Sheet N2324, REV. D

SD52303 ESD Protection Diodes



SOD-523

Description

The SD52303 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

Schematic & Pin Configuration



Mechanical Data

- Stand–off Voltage: 3.3 V
- Low Leakage
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000–4–2 Level 4 ESD Protection
- This is Pb–Free Device
- Terminals finish: 100% Pure Tin
- "-A" is an AEC-Q101 qualified device

Maximum Ratings @T_A=25˚C unless otherwise specified

Parameter	Symbol	Value	Units
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±17 ±12	kV
Peak Power Dissipation	P_{PK}	158	W
Power Dissipation	P_D	500	mW
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	˚C
Junction Temperature Range	T_J	-55 to + 150	˚C
Storage Temperature Range	T_{STG}	-55 to + 150	˚C

Electrical Characteristics@25°C

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
C	Max. Capacitance @V_R=0 and f =1MHz

Ratings and Characteristics Curves

Device*	Device Marking	V_{RWM} (V)	I_R(μA) @V_{RWM}	V_{BR} (V)@ I_T	I_T	Ipp(A) t_p=8/20us	V_C(V) @Max Ipp t_p=8/20us	C(pF) V_R = 0V, f = 1MHz
		Max.	Max.	Min.	mA	Max.	Max.	Typ.
SD52303	KE	3.3	0.05	5.0	1.0	11.2	14.1	105

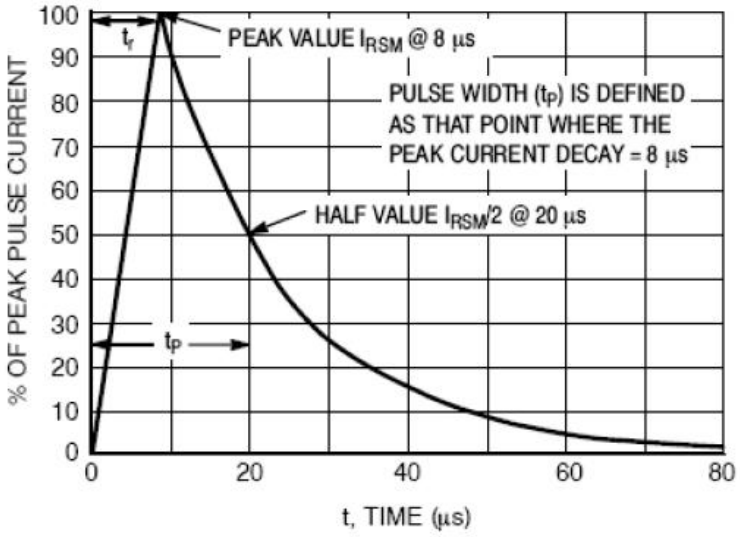
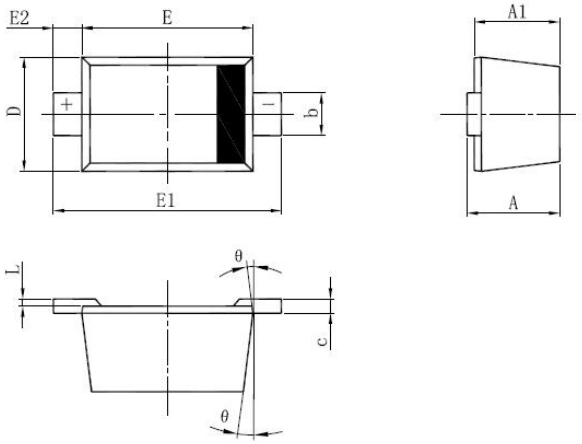


Figure 1. 8 x 20 μs Pulse Waveform

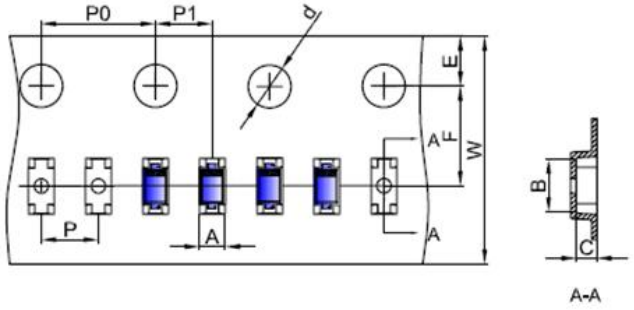
Technical Data
Data Sheet N2324, REV. D

Mechanical Dimensions SOD-523



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200REF		0.08REF	
L	0.010	0.070	0.001	0.003
θ	7°REF		7°REF	

Carrier Tape Specification SOD-523



SYMBOL	Millimeters	
	Min.	Max.
A	0.85	0.95
B	1.89	1.99
C	0.68	0.78
d	1.40	1.60
E	1.65	1.85
F	3.40	3.60
P	1.90	2.10
P0	3.90	4.10
P1	1.90	2.10
W	7.90	8.30

Ordering Information

Device	Package	Shipping
SD52303	SOD-523 (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel

Marking Diagram



KE = Device Marking

Technical Data
Data Sheet N2324, REV. D

DISCLAIMER:
1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment , and safety equipment) , safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement .
3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..