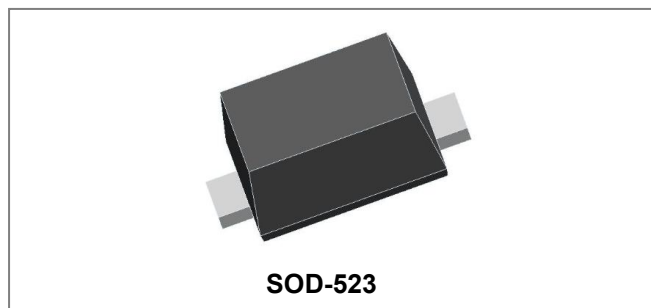


CESD5V0D5 ESD Protection Diodes



Description

The CESD5V0D5 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–12 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- These are Pb-Free Devices

Maximum Ratings @ $T_A=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Units
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Total power dissipation on FR-5 board (Note 1)	P_D	150	mW
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Lead Solder Temperature - Maximum (10 Second Duration)	TL	260	$^\circ\text{C}$
Operating Junction Temperature Range	TJ	-55 to + 150	$^\circ\text{C}$
Storage Temperature Range	TSTG	-55 to + 150	$^\circ\text{C}$

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
I _F	Forward Current
V _F	Forward Voltage @ I _F
C	Max. Capacitance @V _R =0 and f =1MHz

Device*	Device Marking	V _{RWM} (V)	I _R (μA) @V _{RWM}	V _{BR} (V) @ I _T (Note 2)		I _T	V _C @ I _{pp} *=5A	I _{pp} (A)*	V _C (V) @Max I _{pp} *	C(pF)
		Max.	Max.	Min.	Max.	mA	V	Max.	Max.	Typ.
CESD3V3D5	ZE	3.3	0.08	5.0	5.9	1.0	9.4	11.2	14.1	105
CESD5V0D5	ZF	5.0	0.08	6.2	7.3	1.0	11.6	9.4	18.6	80
CESD7V0D5	ZH	7.0	0.03	7.5	8.7	1.0	13.5	8.8	22.7	65
CESD12VD5	ZM	12	0.02	14.1	15.7	1.0	23	9.6	29	55

*Other voltages available upon request.

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

Ratings and Characteristics Curves

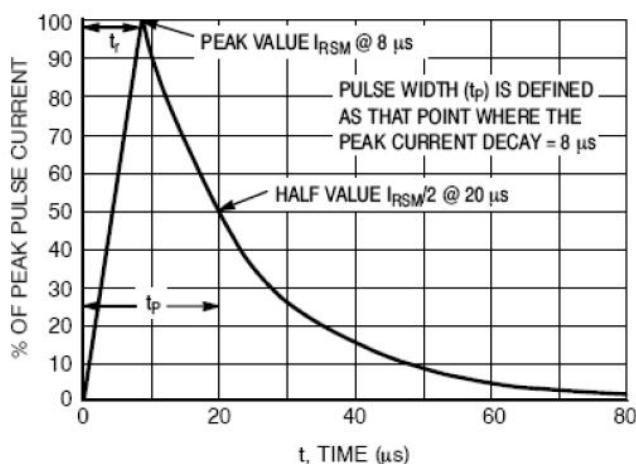


Figure 1. 8 x 20 μs Pulse Waveform

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

Ordering Information

Device	Package	Shipping
CESD Series	SOD-523 (Pb-Free)	8000pcs / reel

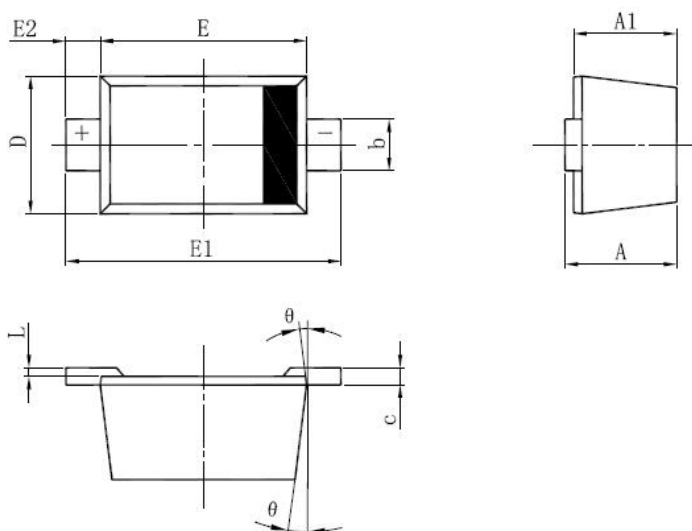
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



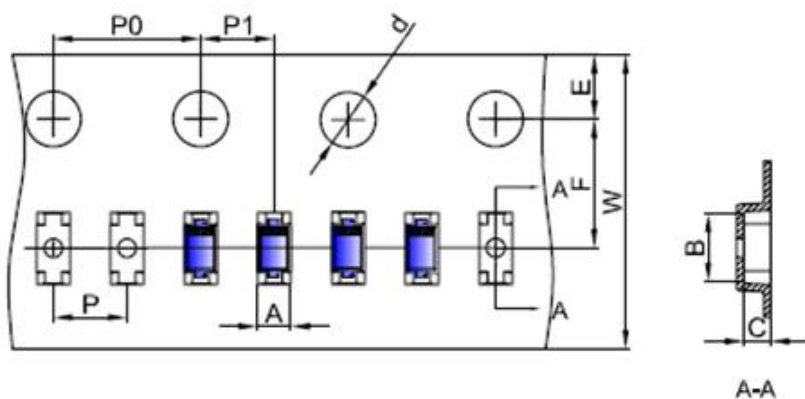
ZF = Device Marking

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

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