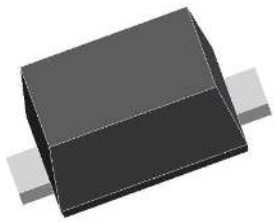
Technical Data
Data Sheet N1872, Rev. C

CESD3V3D5 THRU CESD24VD5 ESD Protection Diodes



SOD-523

Description

The CESD3V3D5 THRU CESD24VD5 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−24V**
- **Low Leakage**
- **Response Time is Typically < 1 ns**
- **ESD Rating of Class 3B per Human Body Model**
- **IEC61000−4−2 Level 4 ESD Protection**
- **These are Pb−Free Devices**

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}	±25 ±25	kV
Peak Pulse Power (Note 1)	P_{PP}	210(CESD3V3D5) 170(CESD5V0D5) 220(CESD12VD5) 323(CESD15VD5) 330(CESD24VD5)	W
Thermal Resistance Junction−to−Ambient	$R_{\theta JA}$	833	°C/W
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	°C
Operating Junction Temperature Range	T_J	-55 to + 150	°C
Storage Temperature Range	T_{STG}	-55 to + 150	°C

Note1. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

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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	Ipp (A)*	V_C(V) @Max Ipp*	C(pF)
		Max.	Max.	Min.	Max.	mA	Max.	Max.	Typ.
CESD3V3D5	ZE	3.3	1	5.0	5.9	1.0	16	13	120
CESD5V0D5	ZF	5.0	10	6.2	7.3	1.0	13	13	95
CESD12VD5	ZM	12	1	14.1	16.5	1.0	9	24	45
CESD15VD5	ZP	15	1	16.7	20	1.0	9.5	34	48
CESD24VD5	ZY	24	1	26.7	33	1.0	7.5	44	36

*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

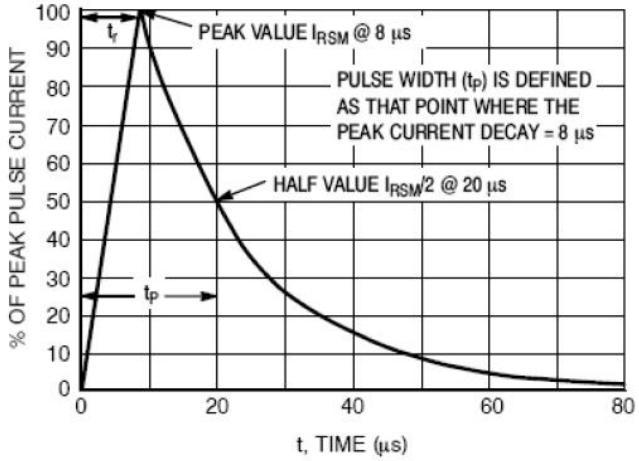

Figure 1. 8 x 20 μs Pulse Waveform

CESD3V3D5
THRU
CESD24VD5

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Ordering Information

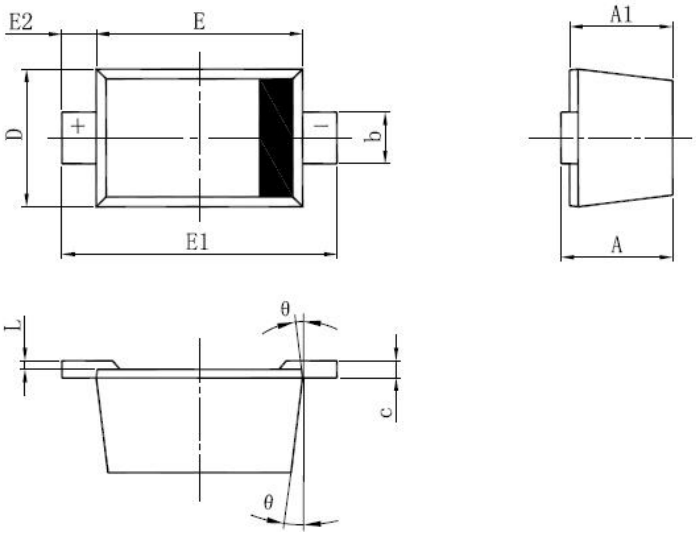
Device	Package	Shipping
CESD Series	SOD-523 (Pb-Free)	8000pcs / reel

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

Marking Diagram

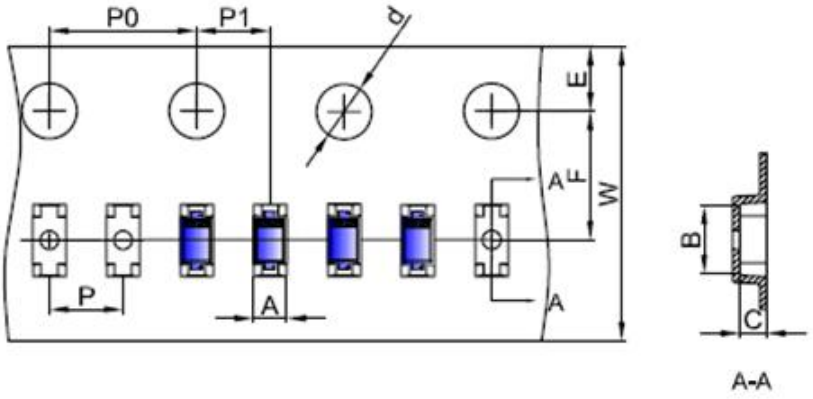
ZF = Device Marking

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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