Technical Data *Green Products*
Data Sheet N1872, Rev. -

CESD5V0D5 ESD Protection Diodes

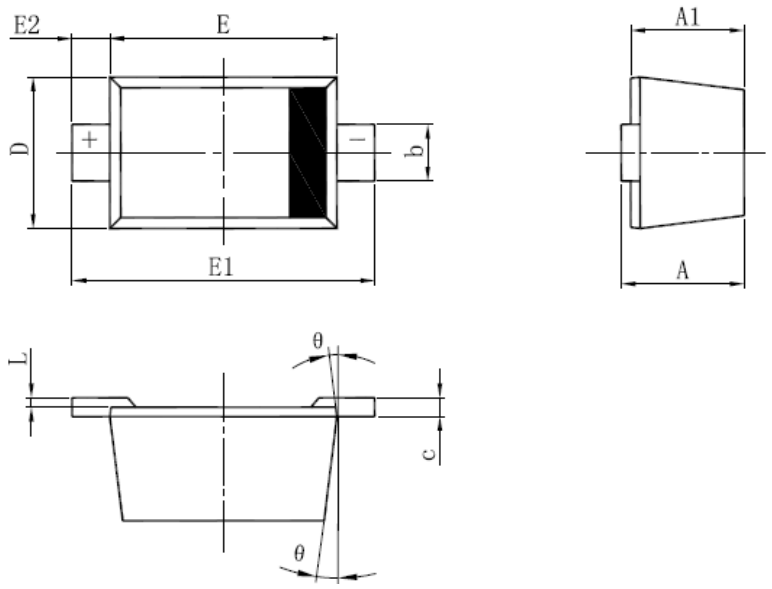
Description:

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.

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**

Mechanical Dimensions：In Inches/mm



Symbol	Dimensions In Millimeters		Dimensions In 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	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

SOD-523

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Marking Diagram:

ZF = CESD5V0D5

Cautions: Molding resin
Epoxy resin UL:94V-0

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.

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
Total power dissipation on FR-5 board (Note 1)	P_D	150	mW
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

Note: 1. FR-5= 1.0 x 0.75 x 0.62 in.

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Electrical Characteristics: (T_A = 25°C unless otherwise noted)

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 @ Ipp*=5A	Ipp (A)*	V_C(V) @Max Ipp*	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.

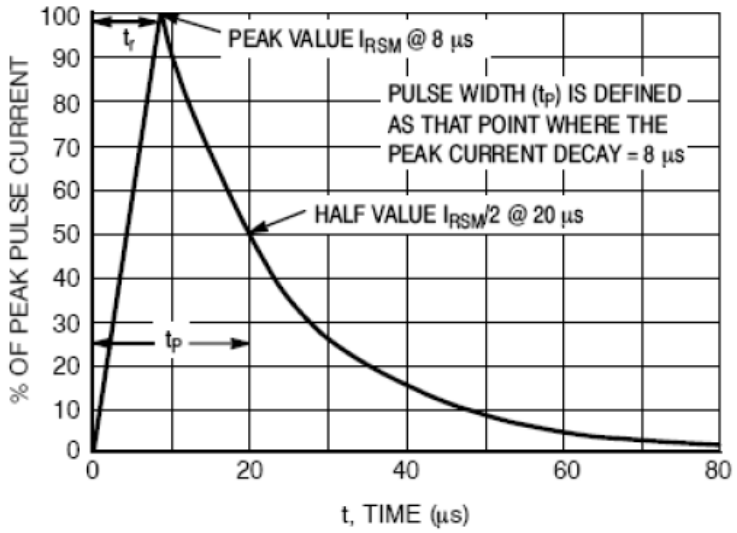

Figure 1. 8 x 20 μs Pulse Waveform

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