CESDB5V0D5
ESD PROTECTION DIODE

Discription

The CESDB5V0D5 protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



SOD-523

Features

- ★ Transient protection for high-speed data lines
  IEC 61000-4-2(ESD) ±30kV (Contact)
  ±30kV (Air)
  IEC 61000-4-4(EFT) 40A (5/50 ns)
- ★ Peak power dissipation: 400W (8/20us)
- ★ Working voltages : 5V
- ★ Protects one Vcc or data line
- ★ Low clamping voltage
- ★ Low leakage current



Circuit Diagram

Ordering information

Product ID	Pack	Qty(PCS)
CESDB5V0D5	SOD-523	3000

Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20 μ s)	400	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +155	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±30 ±30	KV
	IEC61000-4-4 (EFT)	40	A

Electrical Characteristics

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	5.8		7.8	V
I_R	Reverse Leakage Current	V_{RWM} = 5.0V			1.0	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs			9.8	V
		I_{PP} = 20A, t_p = 8/20μs		15	20	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		33	40	pF

Typical Characteristics

Fig 1 8/20μs Waveform per IEC61000-4-5

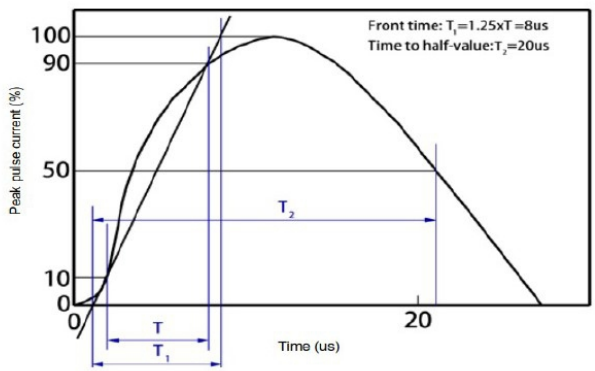


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

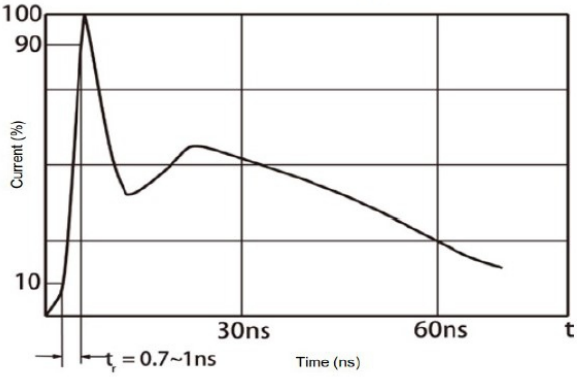


Fig 3 Voltage vs Capacitance

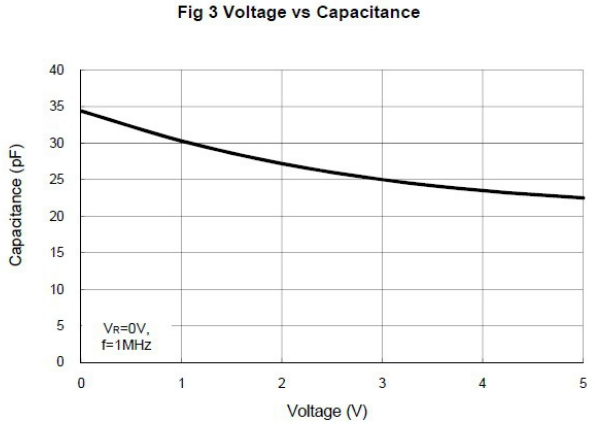
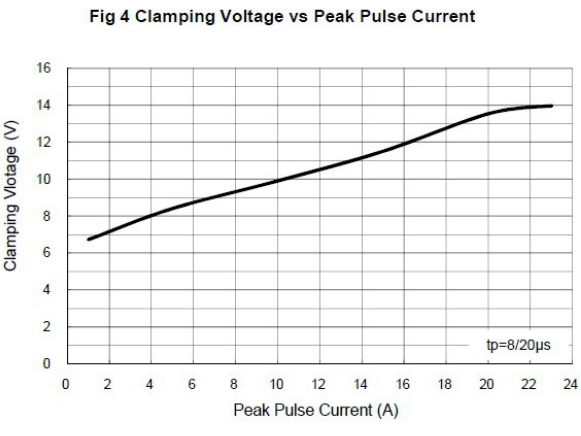
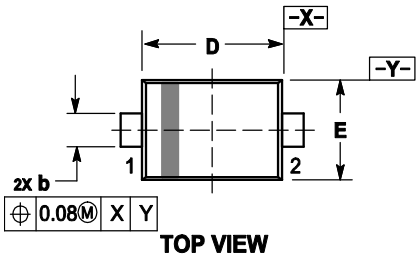


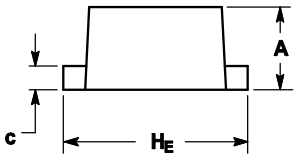
Fig 4 Clamping Voltage vs Peak Pulse Current



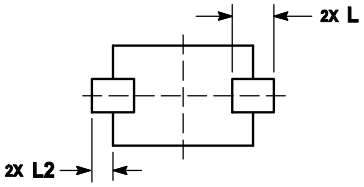
Outline And Dimensions



TOP VIEW



SIDE VIEW



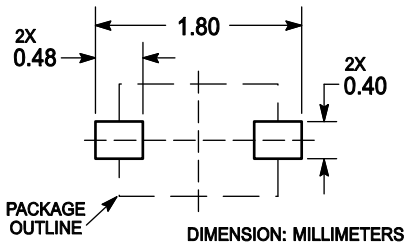
BOTTOM VIEW

Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
c	0.07	0.14	0.20	0.003	0.006	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
E	0.70	0.80	0.90	0.028	0.031	0.035
H_E	1.50	1.60	1.70	0.059	0.063	0.067
L	0.30 REF			0.012 REF		
L_2	0.15	0.20	0.25	0.006	0.008	0.010

Soledering Footprint



DIMENSION: MILLIMETERS

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HXY MOSFET:

C3M0040120D HBAS40-05LT1G IDL10G65C5XUMA2 MUR1040FCT PTVSHC3D5VU AOD403-HXY DMPH6250SQ-13 E4D10120A SG3525-HXY TPD1E0B04DPYR 1SMB5930BT3G 2N7002-HXY C4D08120E-TR DSC06065 C6D06065Q-TR CH440G S3D08065E SGM3798YG/TR SS5150 TPS7A0533PDBZR-HXY MJD127G Si2323DS-T1-E3-HXY TLV74318PDBVR-HXY IRLML2244TRPBF-HXY 1SMB5934B ISL28133FHZ-T7 S4D15120H BD237STU ISL28233FUZ-T7 MSC040SMA120B4