Discription

Low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode in a ultra-small and flat lead SOD-523 plastic package designed to protect one signal line from the damage caused by ESD and other transients.



SOD-523

Features

- ★ Ultra Low Capacitance 0.35 pF(Typ)
- ★ Reverse stand-off voltage: 5V Max
- ★ Low leakage current: nA Level
- ★ Response time is typically < 1 ns
- ★ IEC61000-4-2 Level 4 ESD Protection



Circuit Diagram

Applications

- ★ High- speed data lines
- ★ Smart phones
- ★ Display Ports
- ★ MDDI Ports
- ★ USB Ports
- ★ Digital Video Interface (DVI)
- ★ PCI Express and Serial SATA Ports

Orderingin formation

Product ID	Pack	Qty(PCS)
HBSD5C051U	SOD-523	3000

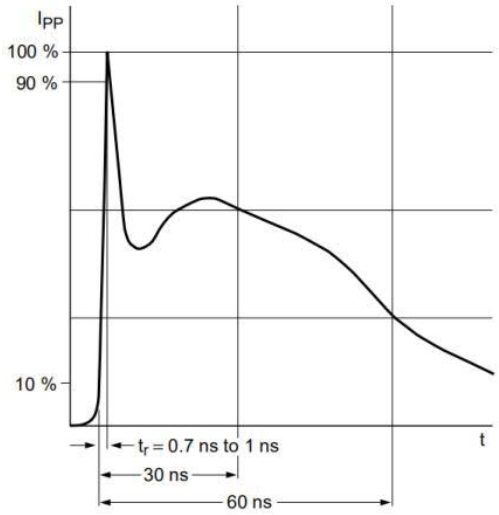
Absolute Ratings(Tamb = 25°C)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	80	W
Peak Pulse Current(tp = 8/20μs)	I_{PPM}	4	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	20	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	15	kV

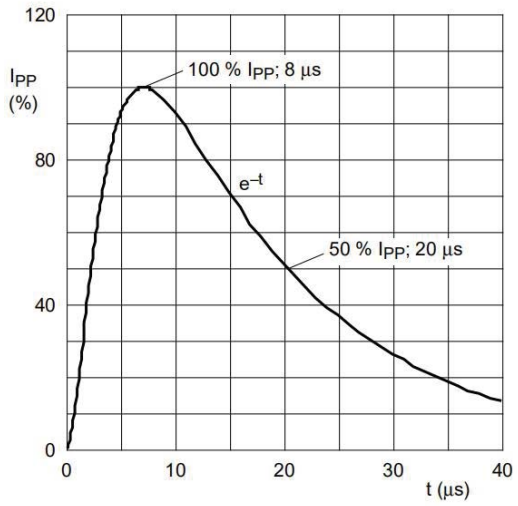
Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.5	--	8.5	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage	V_C	--	--	20.0	V	I_{PP}=4A,Tp=8/20μs
Junction Capacitance	C_J	--	0.35	0.40	pF	V_R=0V, f=1MHz

Typical Characteristics

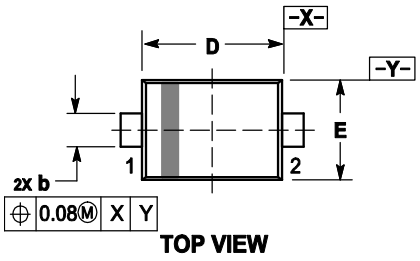


IEC61000−4−2 Waveform

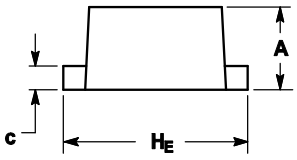


IEC 61000-4-5 Waveform(8/20μs pulse)

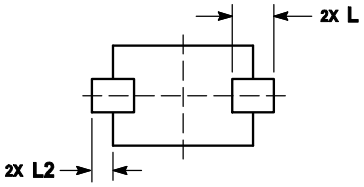
Outline And Dimensions



TOP VIEW



SIDE VIEW



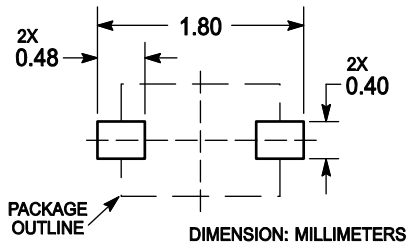
BOTTOM VIEW

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.

DIM	MILLIMETERS			INCHES		
	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



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HXY MOSFET:

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