



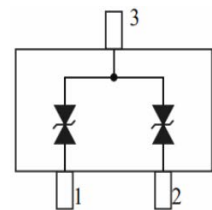
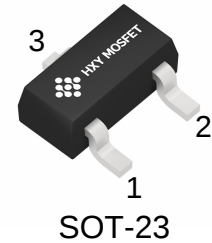
Discription

The HESDUC5VB2I-A 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.

Features

- ★ Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 8\text{kV}$ (Contact)
 $\pm 15\text{kV}$ (Air)
IEC 61000-4-4(EFT) 40A (5/50 ns)
- ★ Peak power dissipation: 28W (8/20us)
- ★ Working voltages : 5V
- ★ Protects one bidirectional line or two unidirectional lines
- ★ Low clamping voltage
- ★ Low leakage current



Circuit Diagram

Ordering Information

Product ID	Pack	Qty(PCS)
HESDUC5VB2I-A	SOT-23	3000

Absolute Ratings($T_{amb} = 25^{\circ}\text{C}$)

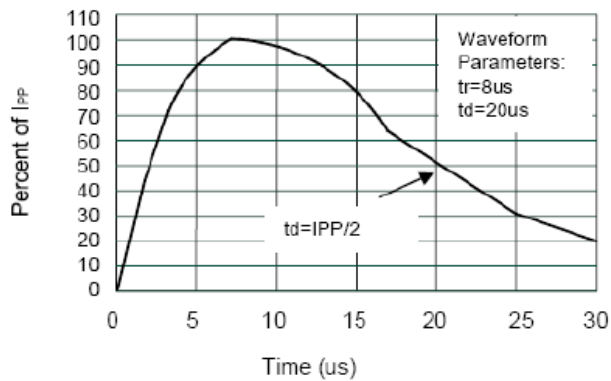
Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (t _p = 8/20 μ s)	28	W
T _L	Maximum lead temperature for soldering during 10s	260	°C
T _{stg}	Storage Temperature Range	-55 to +155	°C
T _{op}	Operating Temperature Range	-40 to +125	°C
T _j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD)	air discharge contact discharge	± 15 ± 8
	IEC61000-4-4 (EFT)	40	A



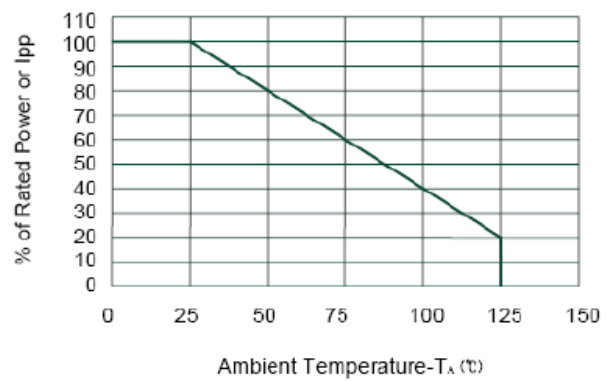
Electrical Characteristics

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$ Any I/O pin to GND	5.6		9.4	V
I_R	Reverse Leakage Current	$V_{RWM} = 5.0V$ Any I/O pin to GND			1.0	μA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$ Any I/O pin to GND			10.5	V
		$I_{PP} = 2A, t_p = 8/20\mu s$ Any I/O pin to GND			14	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$ Any I/O pin to GND		1.0	2.0	pF
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$ Any I/O pin to I/O		0.75	1.5	pF

Typical Characteristics



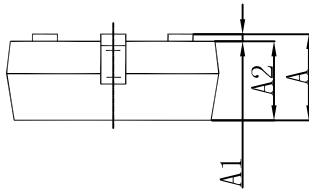
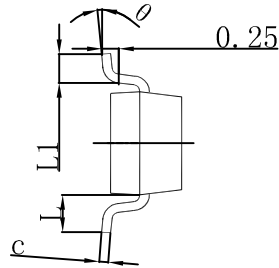
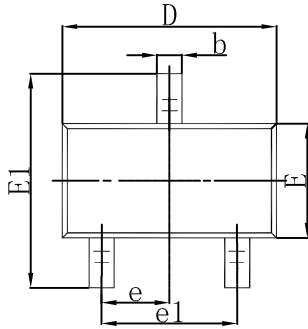
Pulse Waveform



Power Derating Curve

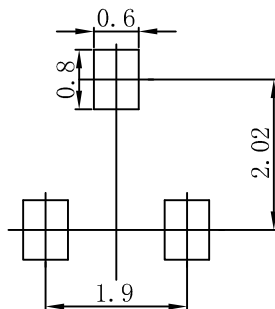


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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