

# ESD1006HC4V5B

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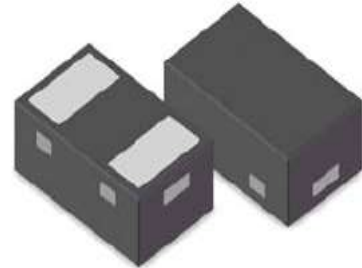
### Transient Voltage Suppressors ESD Protection Diode

#### General description

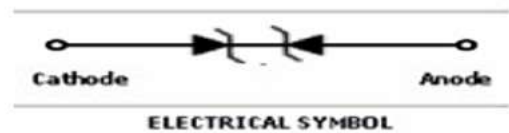
Silicon Protection Diode in a DFN1006 Package.

#### FEATURES

- 500 Watt peak pulse power (t/p=8/20)
- Capacitance Typ. 70 pF
- Bidirectional configurations
- Low Leakage Current
- Low clamping voltage
- Protection one data line / Power Line to :
- IEC 61000-4-2 ±30Kv Contact ±30Kv air.
- IEC 61000-4-4 EFT 40A(5/50nS)
- IEC 61000-4-5 Lightning 45A(8/20uS)
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish



DFN1006 Package



#### Absolute Maximum Ratings (T<sub>A</sub> = 25°C unless otherwise noted)

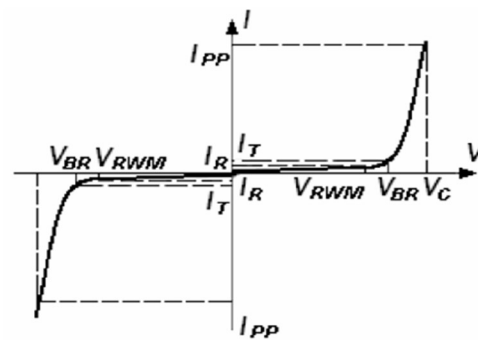
Symbol	Parameter	Value	Units
P <sub>pp</sub>	Peak pulse power	500	W
T <sub>L</sub>	Max Lead Solder Temperature range (10 Second Duration)	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>J</sub>	Junction Temperature	-55 to +125	°C
ESD	IEC61000-4-2 Air Discharge	±30	KV
	Contact Discharge	±30	
EFT	IEC61000-4-4	40	A
Lightning	IEC61000-4-5	45	A

#### Device Marking:

Device Type	Marking	Shipping
ESD1006HC4V5B	E3	10,000/Reel

#### Electrical Parameter

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
I <sub>T</sub>	Test Current
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>



#### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> =1mA	5.1	--	7.5	Volts
V <sub>RWM</sub>	Reverse Stand-off Voltage		-4.5	--	4.5	Volts
I <sub>R</sub>	Reverse Leakage Current	V <sub>R</sub> =4.5V	--	--	0.2	uA
V <sub>C</sub>	Clamping Voltage(IEC 61000-4-5)	I <sub>pp</sub> =1A	--	--	5.5	Volts
V <sub>C</sub>	Clamping Voltage(IEC 61000-4-5)	I <sub>pp</sub> =20A	--	--	7.5	Volts
V <sub>C</sub>	Clamping Voltage(IEC 61000-4-5)	I <sub>pp</sub> =45A	--	--	11	Volts
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> =0V, f= 1MHz	--	70	--	pF

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Typical Characteristics ( $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)

Fig.1 Peak Pulse Power Rating Curve

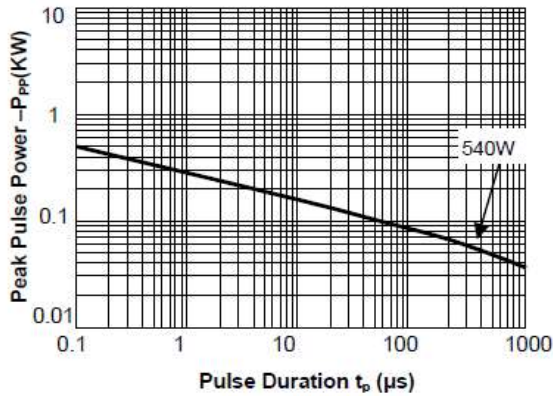


Fig.2 Pulse Derating Curve

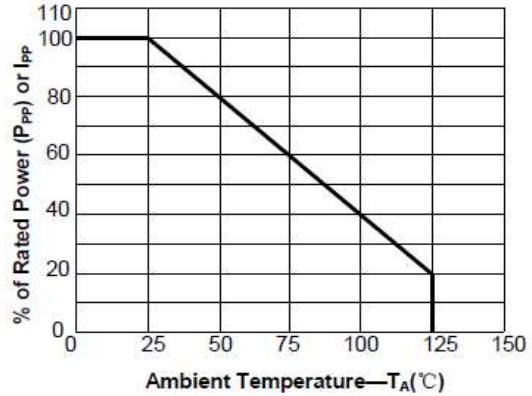


Fig.3 Pulse Waveform-8/20μs

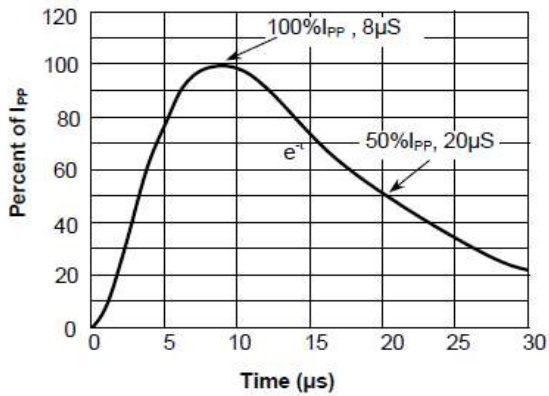
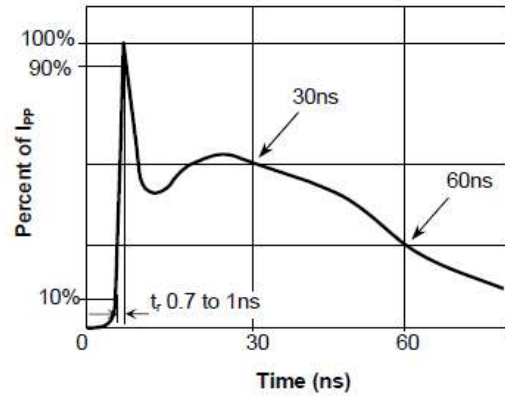
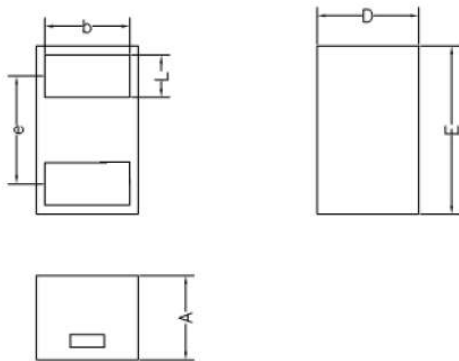


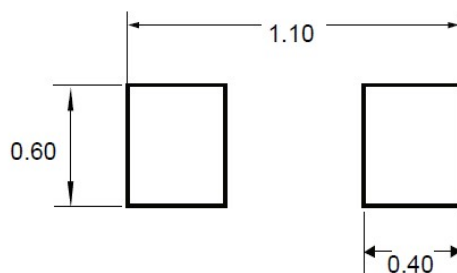
Fig.4 Pulse Waveform-ESD(IEC61000-4-2)



## DFN1006 Package Outline



Symbol	Dimensions in millimeters		
	Min	Nom	Max
D	0.55	0.60	0.65
E	0.95	1.00	1.05
b	0.45	0.50	0.55
L	0.20	0.25	0.30
e	0.64 BSC		
A	0.45	0.50	0.55



Unit:mm

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