

ESD1006HC4V5B

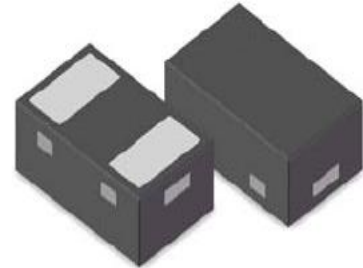
ESD1006HC4V5B Transient Voltage Suppressors ESD Protection Diode

General description

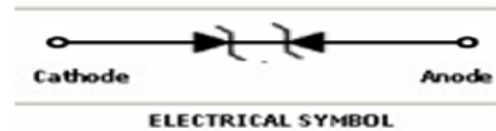
Silicon Protection Diode in a DFN1006 Package.

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_A = 25°C unless otherwise noted)

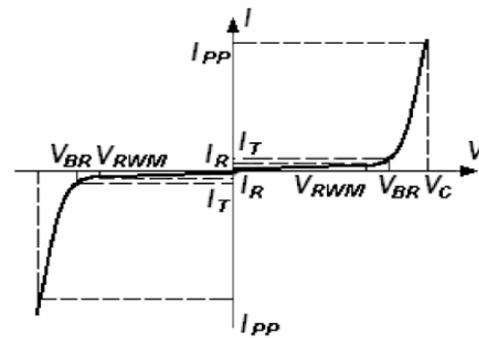
| Symbol | Parameter | Value | Units |
|------------------|--|-------------|-------|
| P _{pp} | Peak pulse power | 500 | W |
| T _L | Max Lead Solder Temperature range (10 Second Duration) | 260 | °C |
| T _{stg} | Storage Temperature Range | -55 to +150 | °C |
| T _J | Junction Temperature | -55 to +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 or H45 | 10,000/Reel |

Electrical Parameter

| 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} |
| I _T | Test Current |
| V _{BR} | Breakdown Voltage @ I _T |



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

| Symbol | Parameter | Test Condition | Min | Typ | Max | Unit |
|------------------|---------------------------------|-----------------------------|------|-----|-----|-------|
| V _{BR} | Reverse Breakdown Voltage | I _T =1mA | 5.1 | -- | 7.5 | Volts |
| V _{RWM} | Reverse Stand-off Voltage | | -4.5 | -- | 4.5 | Volts |
| I _R | Reverse Leakage Current | V _R =4.5V | -- | -- | 0.2 | uA |
| V _C | Clamping Voltage(IEC 61000-4-5) | I _{pp} =1A | -- | -- | 5.5 | Volts |
| V _C | Clamping Voltage(IEC 61000-4-5) | I _{pp} =20A | -- | -- | 7.5 | Volts |
| V _C | Clamping Voltage(IEC 61000-4-5) | I _{pp} =45A | -- | -- | 11 | Volts |
| C _J | Junction Capacitance | V _R =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

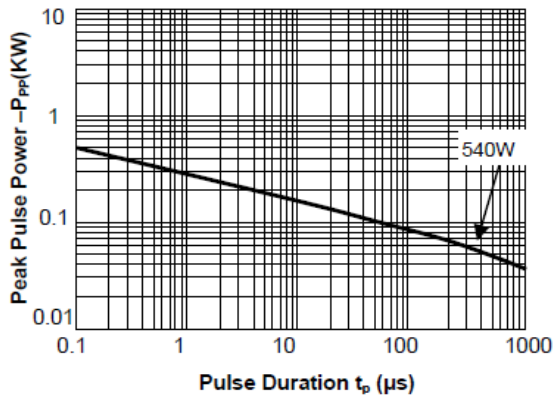


Fig.2 Pulse Derating Curve

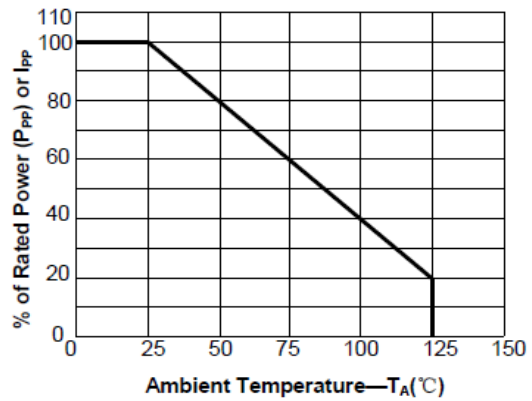


Fig.3 Pulse Waveform-8/20μs

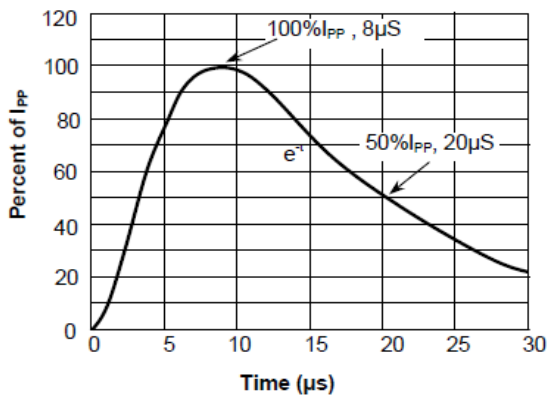
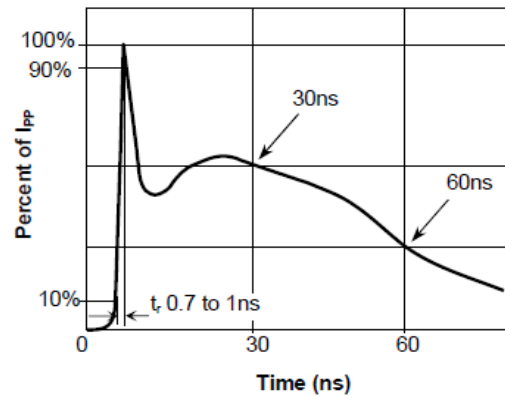
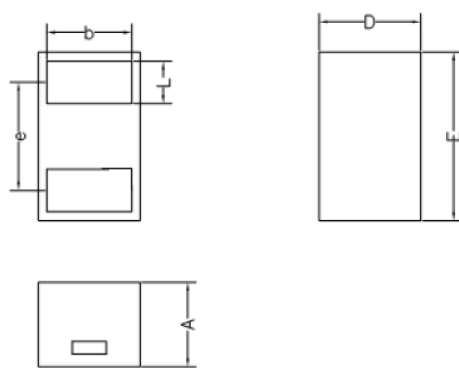


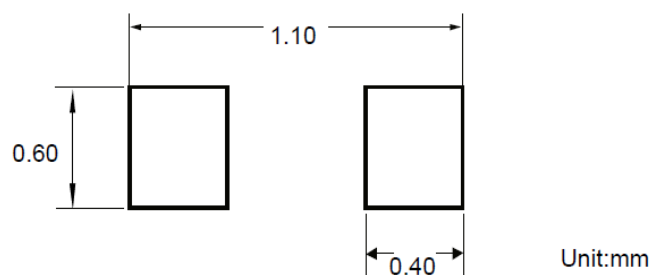
Fig.4 Pulse Waveform-ESD(IEC61000-4-2)



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 |



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