



ESDSHLC5V001P1

1-Line Uni-directional TVS Diode

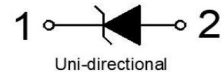
1. Features

- 2-pin lead-less package
- Junction capacitance (Typ value: 170pF)
- Peak Pulse Current (8/20μs): 22A
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- Low clamping voltage
- Low leakage current
- Working voltages:5V
- RoHS Compliant

2. Mechanical Data

- Case:Molded Plastic,DFN1006-2L.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:P5
- Mounting Position : Any.

DFN1006-2L



3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

| Characteristic | Symbol | Value | Unit |
|---------------------------------------|------------------|-------------|------|
| Peak Pulse Power (tp=8/20μs waveform) | P _{PP} | 330 | W |
| Peak Pulse Current (8/20μs) | I _{PP} | 22 | A |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ±30 | KV |
| ESD per IEC 61000-4-2 (Contact) | | ±30 | |
| Operating Temperature Range | T _j | -55 to +125 | °C |
| Storage Temperature Range | T _{stg} | -55 to +150 | °C |

4. Electrical Characteristics (T_A=25°C,RH=45%-75%,unless otherwise noted)

| Characteristics | Symbol | Condition | Min | TYP | Max | Unit |
|---------------------------|------------------|--|-----|-----|-----|------|
| Reverse Working Voltage | V _{RWM} | | - | - | 5 | V |
| Reverse Breakdown Voltage | V _{BR} | I _R = 1mA | 6.5 | 8 | 9 | V |
| Reverse Leakage Current | I _R | V _R =5V | - | - | 0.2 | uA |
| Clamping voltage | V _C | I _{PP} = 1A,T _P =8/20us | - | - | 9 | V |
| Clamping voltage | V _C | I _{PP} = 22A,T _P =8/20us | - | - | 15 | V |
| Junction capacitance | C _J | V _R =0V,f =1MHz | - | 170 | 260 | pF |



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5. Rating And Characteristic Curves

Fig.1 Junction Capacitance vs.Reverse Voltage

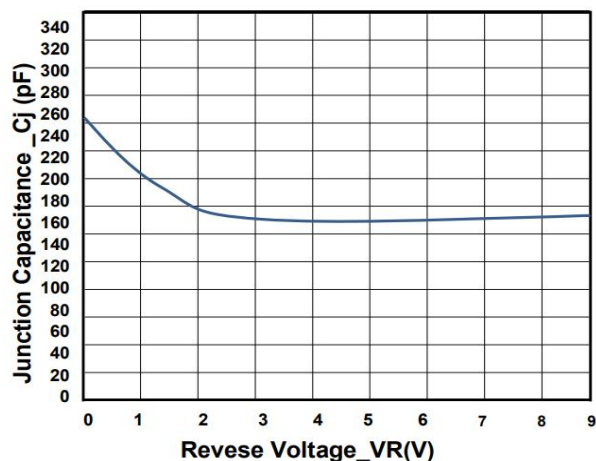


Fig.2 Power Derating Curve

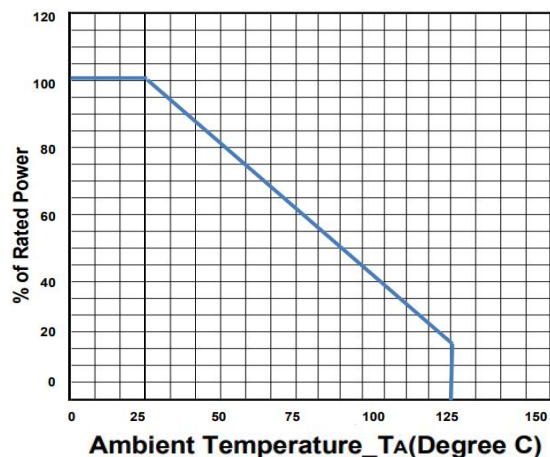


Fig.3 Clamping Voltage vs. Peak Pulse Current

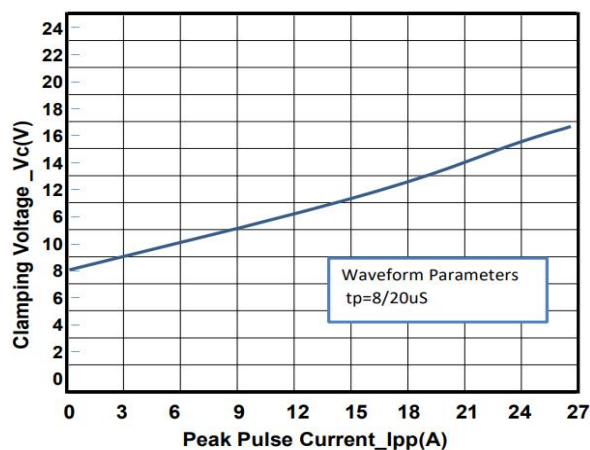


Fig.4 Peak Pulse Power vs. Pulse Time

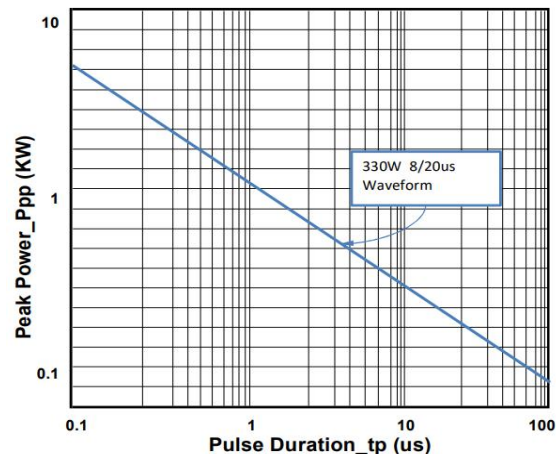


Fig.5 8/20 us Pulse Waveform according to IEC 61000-4-5

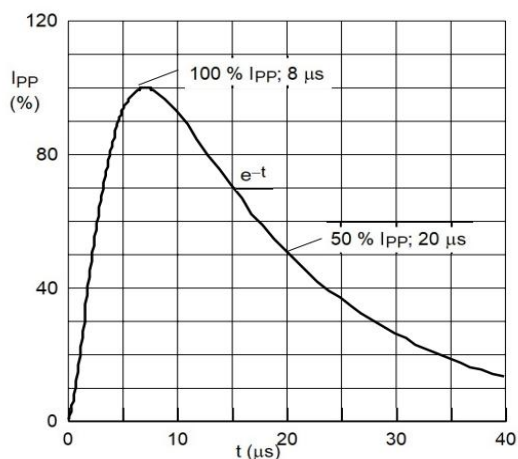
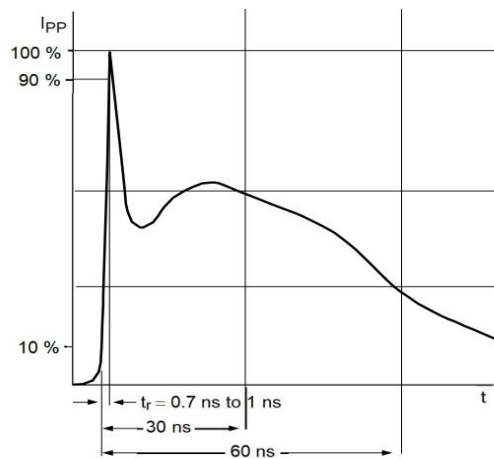


Fig.6 ESD Pulse waveform according to IEC 61000-4-2



version:00

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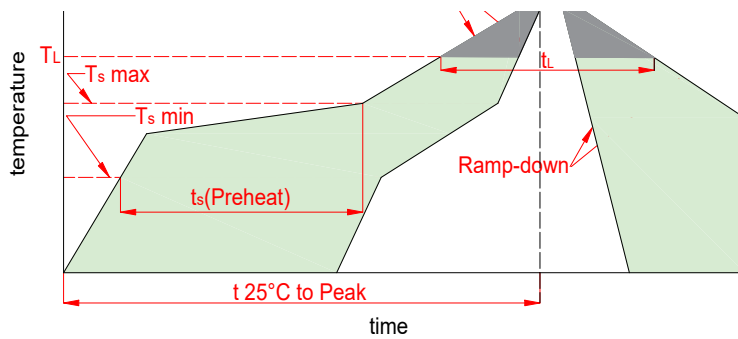
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6. Soldering Parameters

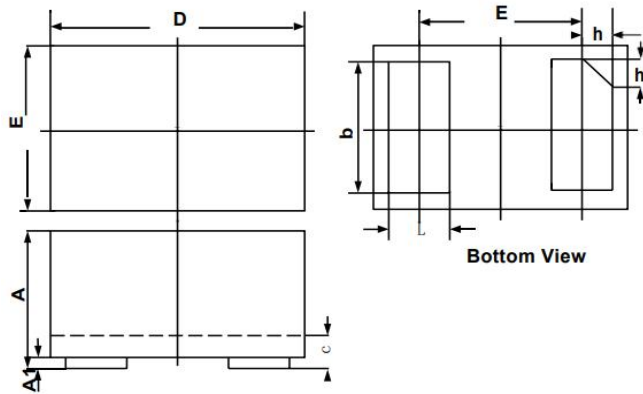


| Reflow Condition | Lead-free |
|-------------------------|-----------|
| Temp. min(T_s (min)) | 150°C |

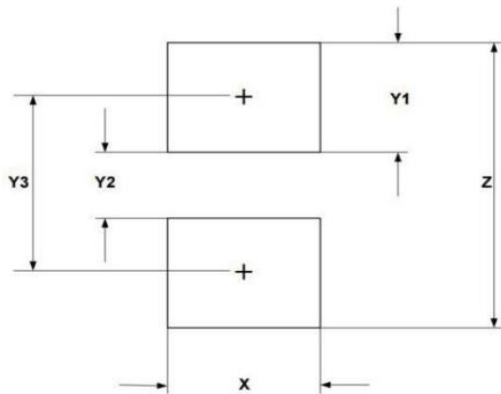


| | | |
|--|---------------------------|-------------------------|
| Pre Heat | Temp. max(T_s (min)) | 200°C |
| | Time(min to max)(t_s) | 60~120s |
| Aver. ramp up rate(Liquidus Temp.)(T_L)to peak | | 3°C/s max |
| T_s (max) to T_L -Ramp-up Rate | | 3°C/s max |
| Reflow | Temp.(T_L)(Liquidus) | 217°C |
| | Temp.(t_L)(Liquidus) | 60~150s |
| Peak Temp.(T_p) | | 260 ^{+0/-5} °C |
| Time within actual peak Temp.(t_p) | | 30s max |
| Ramp-down Rate | | 6°C/s max |
| Time 25°C to peak Tempe.(T_p) | | 8 minutes max |
| Do not exceed | | 260°C |

7. Dimensions



| Dimensions | Inches | | Millimeters | |
|------------|--------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 0.018 | 0.022 | 0.450 | 0.550 |
| A1 | 0.000 | 0.002 | 0.000 | 0.050 |
| b | 0.018 | 0.022 | 0.450 | 0.550 |
| c | 0.005 | 0.007 | 0.120 | 0.180 |
| D | 0.037 | 0.041 | 0.950 | 1.050 |
| e | 0.026 | | 0.650 | |
| E | 0.022 | 0.026 | 0.550 | 0.650 |
| L | 0.008 | 0.012 | 0.200 | 0.300 |
| h | 0.003 | 0.007 | 0.070 | 0.170 |



| Dimensions | Inches | Millimeters |
|------------|--------|-------------|
| X | 0.024 | 0.600 |
| Y1 | 0.020 | 0.500 |
| Y2 | 0.012 | 0.300 |
| Y3 | 0.031 | 0.800 |
| Z | 0.051 | 1.300 |



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