

1. Features

- Low capacitance:120pF(max.)
- Reverse stand-off voltage:4.5V
- IEC 61000-4-2 (ESD Air): $\pm 30\text{kV}$
IEC 61000-4-2 (ESD Contact): $\pm 30\text{kV}$
IEC 61000-4-5 (Lightning 8/20 μs): 30A

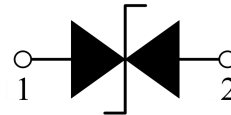
2. Pin Description



3. Applications

- Portable Instrumentation
- Digital Cameras
- Power Lines
- Tablets

4. Schematic Diagram



5. Order Information

| Type | Package | Size (mm) | Delivery Form | Delivery Quantity |
|------------|---------|----------------|---------------|-------------------|
| SCS312L120 | DFN1006 | 1.00x0.60x0.50 | 7" T&R | 10,000 |

6. Limiting Values($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Max | Unit |
|-------------------|---------------------------------|----------------------------------|-----|----------|--------------------|
| V_{ESD} | Electrostatic Discharge Voltage | IEC 61000-4-2; Contact Discharge | - | ± 30 | kV |
| | | IEC 61000-4-2; Air Discharge | - | ± 30 | kV |
| P_{PP} | Peak Pulse Power | $t_P=8/20\mu\text{s}$ | - | 450 | W |
| I_{PP} | Peak Pulse Current | $t_P=8/20\mu\text{s}$ | - | 30 | A |
| T_{OP} | Operating Temperature | - | -55 | 125 | $^{\circ}\text{C}$ |
| T_{STRG} | Storage Temperature Range | - | -55 | 150 | $^{\circ}\text{C}$ |

7. Electrical Characteristics($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ. | Max | Unit |
|------------------|-------------------------|---|-----|------|-----|---------------|
| V_{RWM} | Reverse Working Voltage | $T_A = 25\text{ }^{\circ}\text{C}$ | - | - | 4.5 | V |
| V_{BR} | Breakdown Voltage | $I_R = 1\text{mA}$ | 4.7 | - | - | V |
| I_R | Reverse Leakage Current | $V_{\text{RWM}} = 4.5\text{V}$ | - | - | 0.5 | μA |
| V_C | Clamping Voltage | $I_{\text{PP}}=5\text{A}, t_P=8/20\mu\text{s}$ | - | - | 13 | V |
| | | $I_{\text{PP}}=30\text{A}, t_P=8/20\mu\text{s}$ | - | - | 15 | V |
| C_J | Junction Capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | - | - | 120 | pF |

8. Typical Characteristics

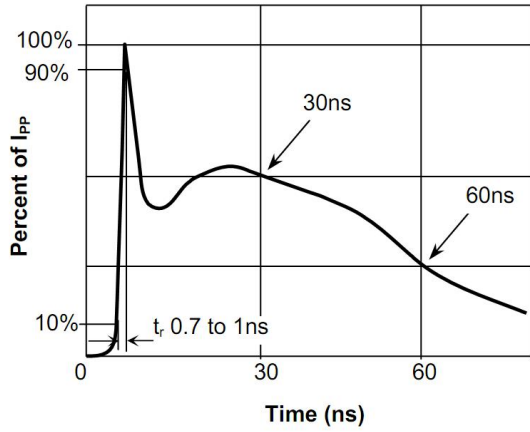


Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

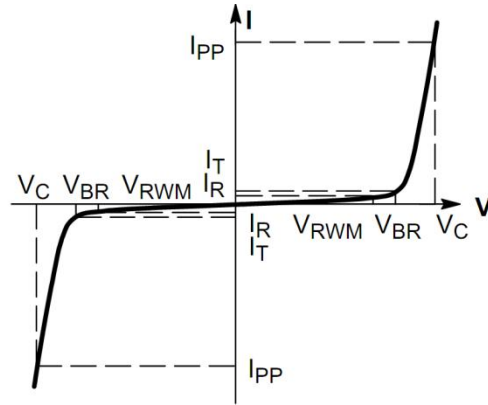


Fig.2 Pulse Derating Curve

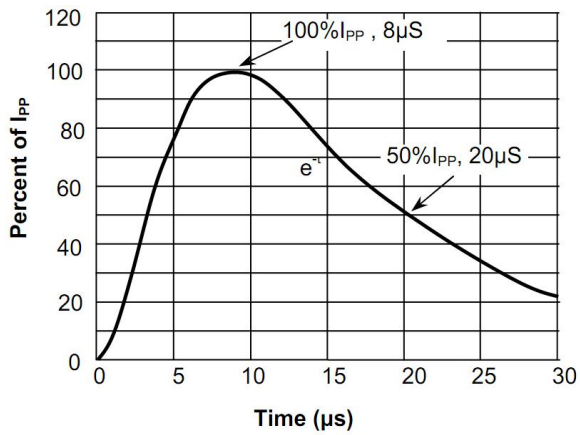


Fig.3 Pulse Waveform-8/20μs

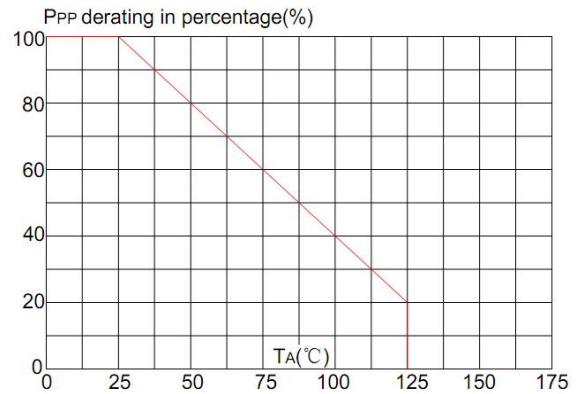
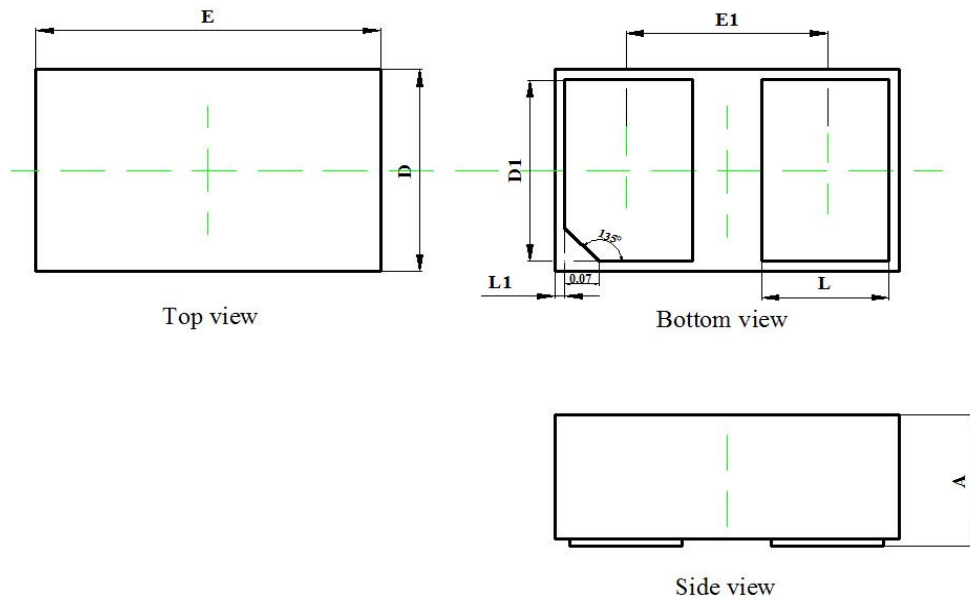


Fig.4 Pulse Derating Curve

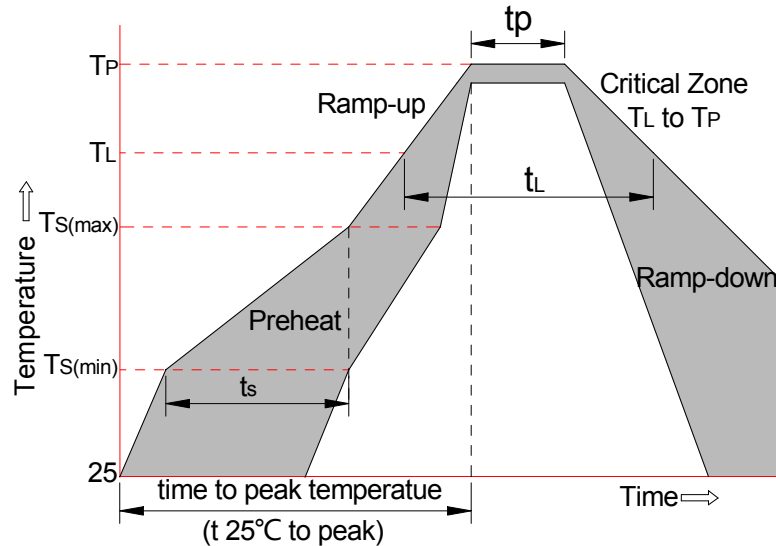
9. Package Dimension

DFN1006 Package Outline



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|-----------|------------------------------|-------|-------------------------|-------|
| | Min | Max | Min | Max |
| A | 0.450 | 0.550 | 0.018 | 0.022 |
| D | 0.550 | 0.650 | 0.022 | 0.026 |
| E | 0.950 | 1.050 | 0.037 | 0.041 |
| D1 | 0.450 | 0.550 | 0.018 | 0.022 |
| E1 | 0.550 | 0.650 | 0.022 | 0.026 |
| L | 0.200 | 0.300 | 0.008 | 0.012 |
| L1 | 0.070 | 0.170 | 0.003 | 0.007 |

10. Soldering Parameters



| Reflow Condition | | Pb-Free Assembly |
|---|-----------------------------------|------------------|
| Pre-heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (t_s) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_p) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| xTime 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |