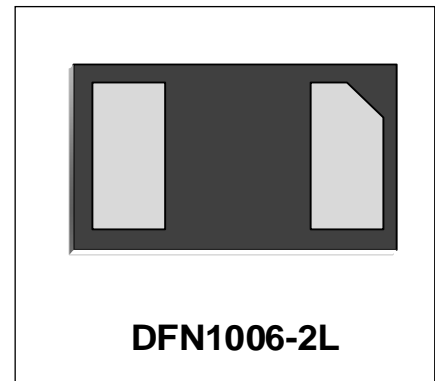


Transient Voltage Suppressor

Features

- Small Body Outline Dimensions: 0.039" x 0.024" (1.0 mm x 0.60 mm)
- Protects one I/O or power line
- Low Clamping Voltage
- Ultra Low Capacitance:0.5pF
- Working Voltage: 5 V
- Low Leakage Current
- AEC-Q 101 qualified (Automotive grade with suffix " Q ")



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 10\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3A (8/20 μs)

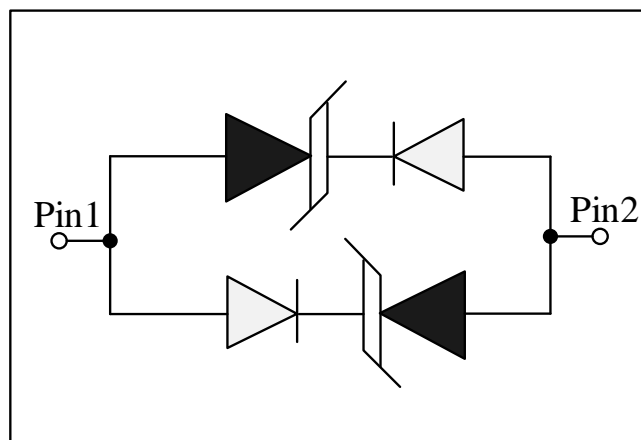
Mechanical Characteristics

- DFN1006-2L package
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant

Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

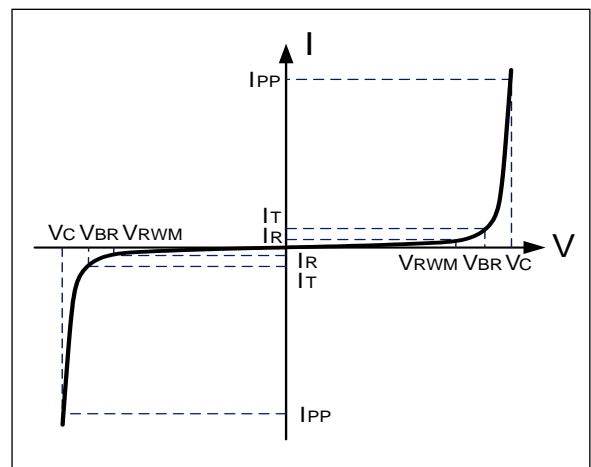
Schematic & PIN Configuration



| Absolute Maximum Rating | | | |
|--|-----------|--------------|-------------|
| Rating | Symbol | Value | Units |
| Peak Pulse Power ($t_p = 8/20\mu s$) | P_{PP} | 60 | W |
| Peak Pulse Current ($t_p = 8/20\mu s$) | I_{PP} | 3 | A |
| Operating Temperature | T_J | -55 to + 125 | $^{\circ}C$ |
| Storage Temperature | T_{STG} | -55 to +150 | $^{\circ}C$ |

Electrical Parameters (T=25 $^{\circ}C$)

| Symbol | Parameter |
|-----------|-------------------------------------|
| I_{PP} | Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Reverse Stand-Off Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |



Electrical Characteristics

| WE05DUCF-B | | | | | | |
|-----------------------------------|-----------|-------------------------------------|---------|---------|---------|----------|
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | V_{RWM} | | | | 5 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1mA$ | 6 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5V, T = 25^{\circ}C$ | | | 150 | nA |
| Clamping Voltage | V_C | $I_{PP} = 3A, t_p = 8/20\mu s$ | | | 20 | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 4A$ $t_p = 0.2/100ns$ | | 14.2 | | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 16A$ $t_p = 0.2/100ns$ | | 28 | | V |
| Dynamic Resistance ^{1,2} | R_{DYN} | TLP=0.2/100ns | | 1.15 | | Ω |
| Junction Capacitance | C_j | $V_R = 0V, f = 1MHz$ | | 0.5 | 0.8 | pF |

Note: 1、TLP Setting : $t_p = 100ns, t_r = 0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1 = 70ns$ to $t_2 = 90ns$.
2、Dynamic resistance calculated from $I_{PP} = 4A$ to $I_{PP} = 16A$ using "Best Fit".

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

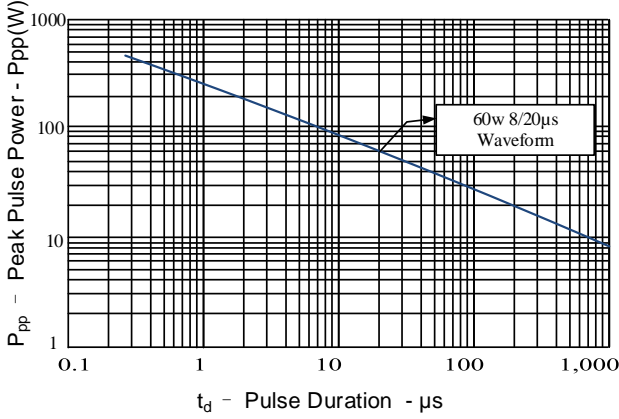


Figure 2: Power Derating Curve

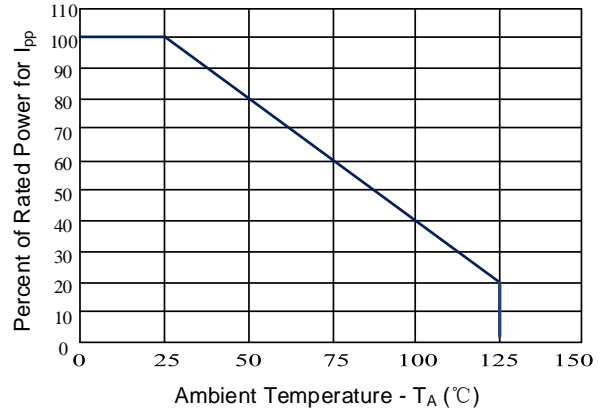


Figure 3: Clamping Voltage vs. Peak Pulse Current

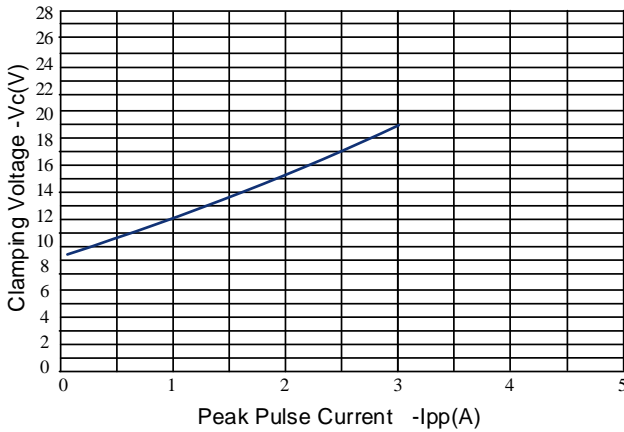


Figure 4: Normalized Junction Capacitance

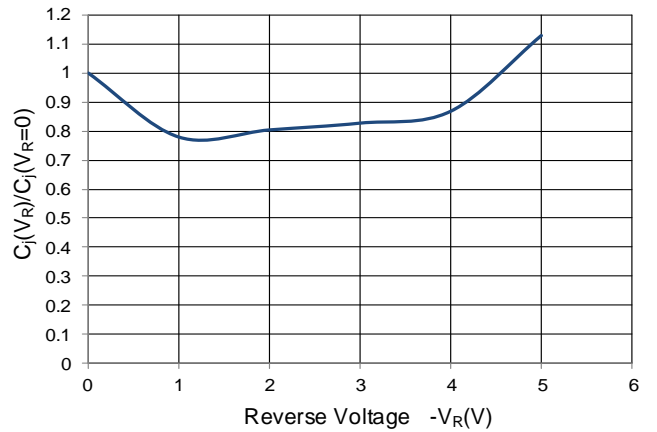


Figure 5: TLP Positive I-V Curve

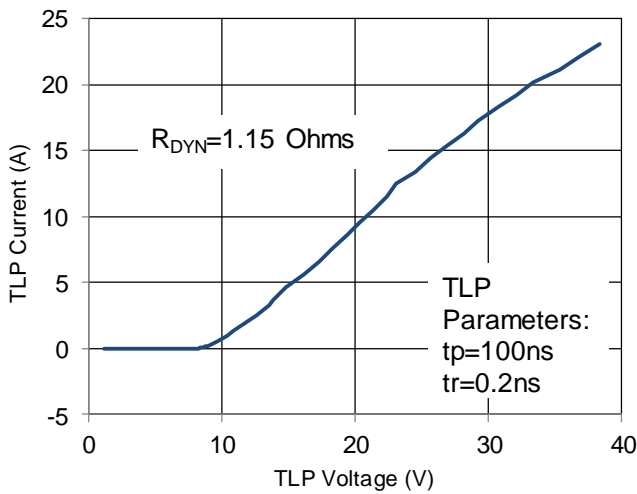
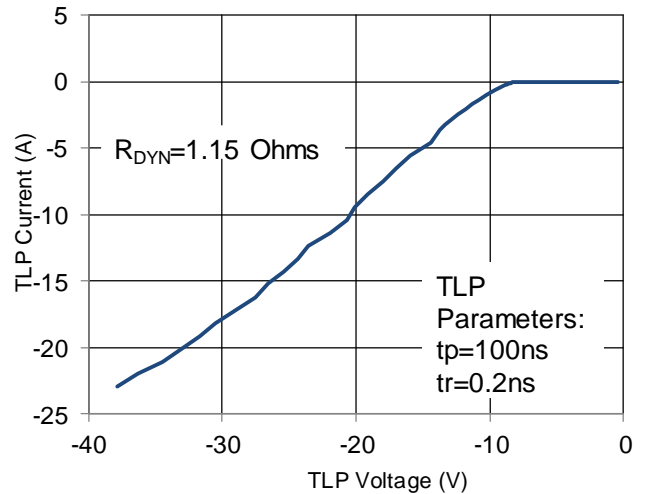
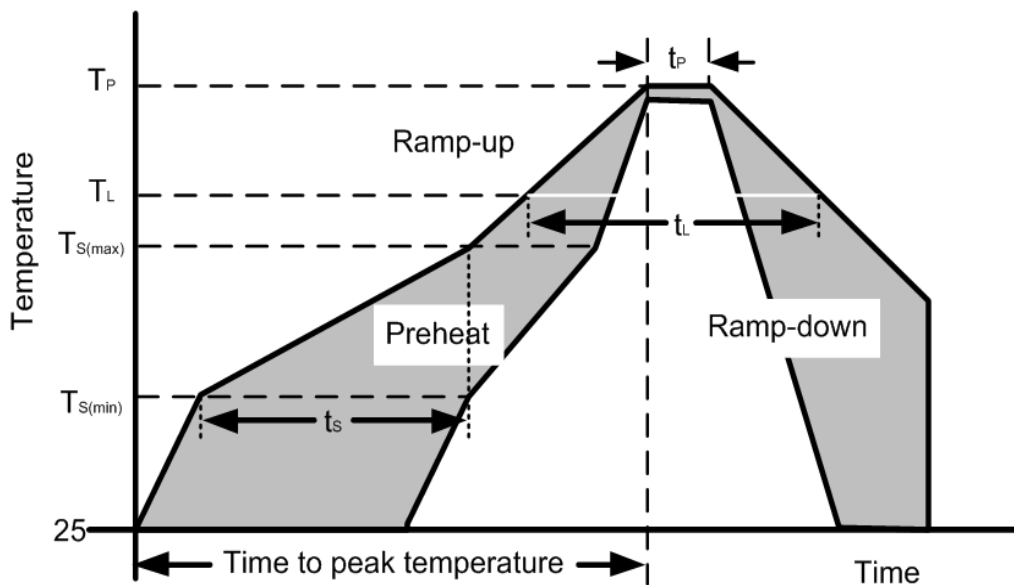


Figure 6: TLP Negative I-V Curve

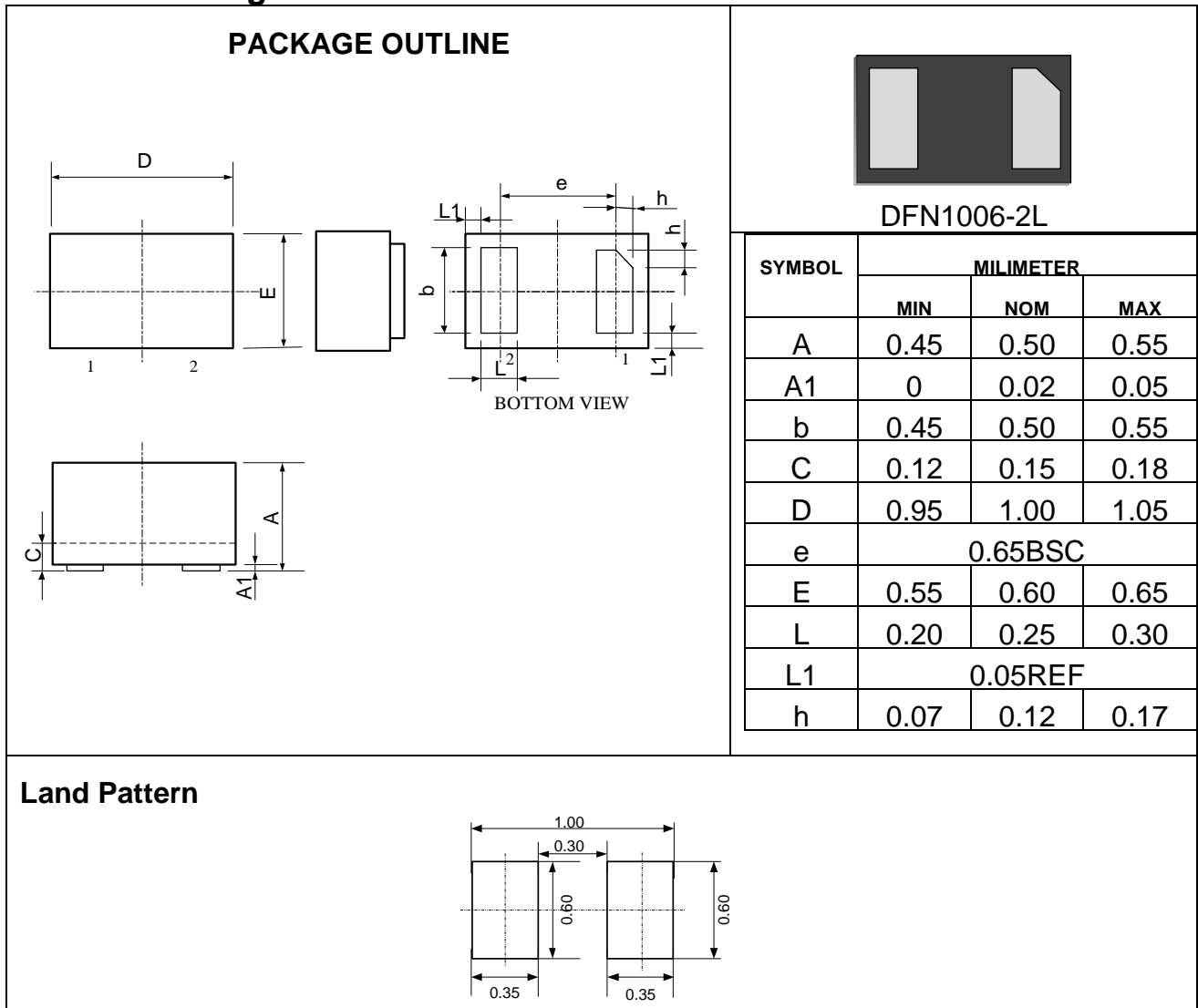


Soldering Parameters

| 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 – 190 secs |
| Average ramp up rate (Liquidus Temp) (T_L) to peak | | 5°C/second max |
| $T_{S(max)}$ to T_L —Ramp-up Rate | | 5°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Temperature (t_L) | 60 – 150 seconds |
| Peak Temperature (T_P) | | 260+0/-5 °C |
| Time within actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature (T_P) | | 8 minutes Max. |
| Do not exceed | | 280°C |



Outline Drawing –DFN1006-2L



Marking Codes

| Part Number | Marking Code |
|-------------|--|
| EX05TL-B | <div style="border: 1px solid black; padding: 5px; display: inline-block;"> 5 T </div> |