



FEATURES

- ✧ Protects one I/O or power line
- ✧ Low clamping voltage
- ✧ Working voltage: 7.0V
- ✧ Low leakage current
- ✧ RoHS compliant

MAIN APPLICATIONS

- ✧ Cellular phones
- ✧ Personal digital assistants (PDA's)
- ✧ Laptop computers
- ✧ Digital cameras

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 100A (8/20 μs)

MECHANICAL CHARACTERISTICS

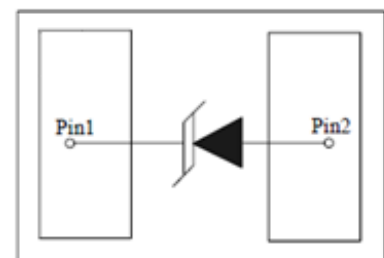
- ✧ DFN1610-2L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 3,000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: 07P

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|------------------|---------------|------|
| Peak pulse power dissipation on 8/20 μs waveform | P _{PP} | 2000 | W |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | +/- 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | +/- 30 | |
| Lead soldering temperature | T _L | 260 (10 sec.) | °C |
| Operating junction temperature range | T _J | -55 to +125 | °C |
| Storage temperature range | T _{STG} | -55 to +150 | °C |



DFN1610-2L



PIN Configuration

ELECTRICAL CHARACTERISTICS ($T_A=25\text{ }^{\circ}\text{C}$)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---------------------------|-----------|---|-----|-----|-----|---------------|
| Reverse working voltage | V_{RWM} | | | | 7.0 | V |
| Reverse breakdown voltage | V_{BR} | $I_T = 1\text{mA}$ | 7.5 | 8 | 10 | V |
| Reverse leakage current | I_R | $V_{RWM} = 7\text{V}$ | | | 1 | μA |
| Forward voltage | V_F | $I_F = 10\text{mA}$ | 0.6 | | 1.0 | V |
| Peak pulse current | I_{PP} | $t_P = 8/20\mu\text{s}$ | | | 100 | A |
| Clamping voltage | V_C | $I_{PP}=50\text{A}, t_P=8/20\mu\text{s}$ | | 12 | 15 | V |
| | | $I_{PP}=100\text{A}, t_P=8/20\mu\text{s}$ | | 15 | 18 | |
| Junction capacitance | C_J | $V_{RWM}=0\text{V}, f=1\text{MHz}$ | | 720 | 900 | pF |

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

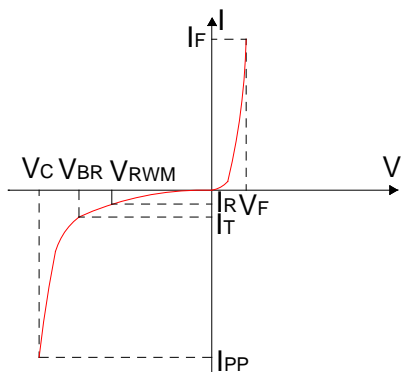


FIG.2: Pulse waveform (8/20 μs)

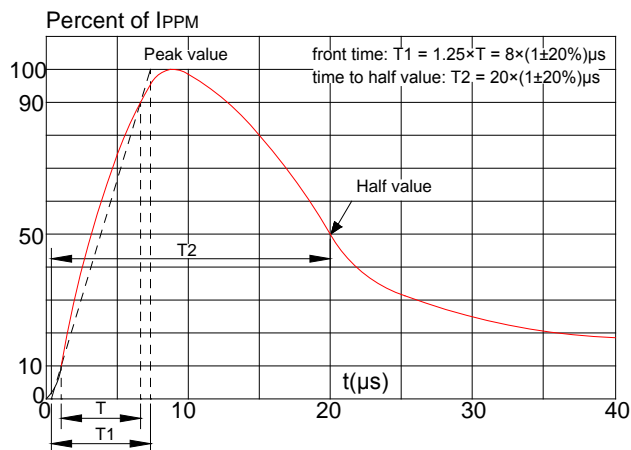


FIG.3: Pulse derating curve

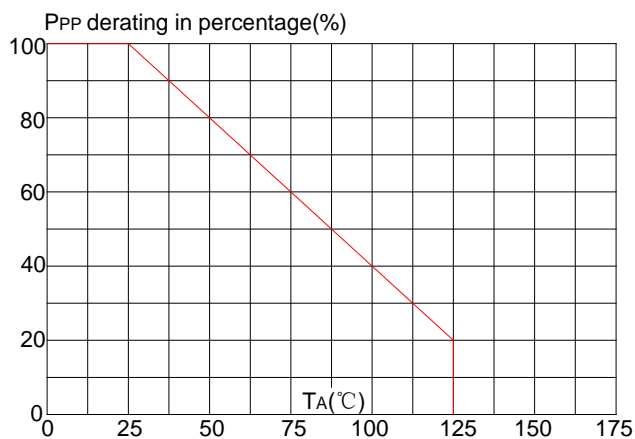
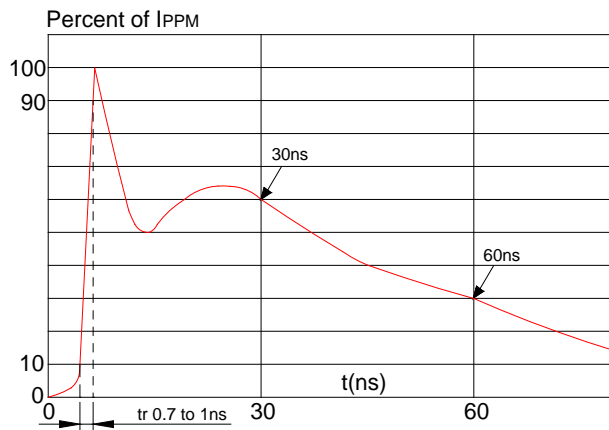
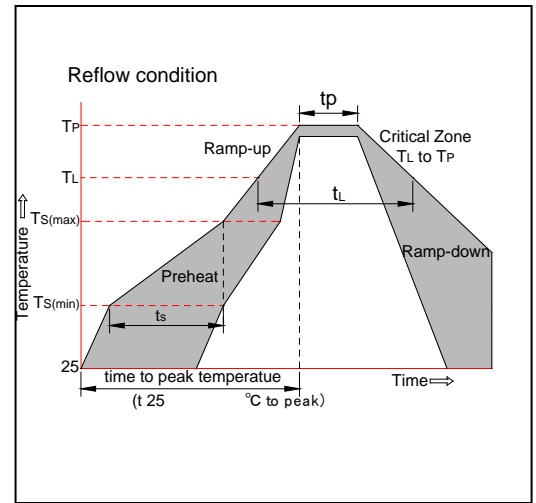


FIG.4: ESD clamping (30KV contact)

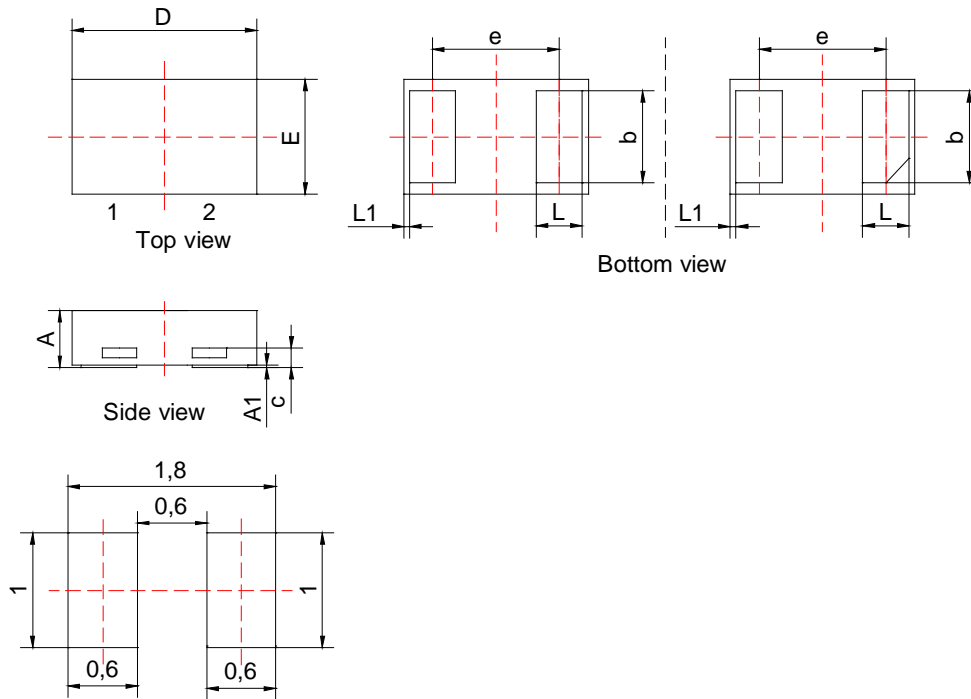


SOLDERING PARAMETERS

| | | |
|---|-----------------------------------|---|
| Reflow Condition | | Pb-Free assembly (see figure at right) |
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquidus 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)(Liquidus) | +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) | | 20-40secs. |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_p) | | 8 min. Max |
| Do not exceed | | +260°C |



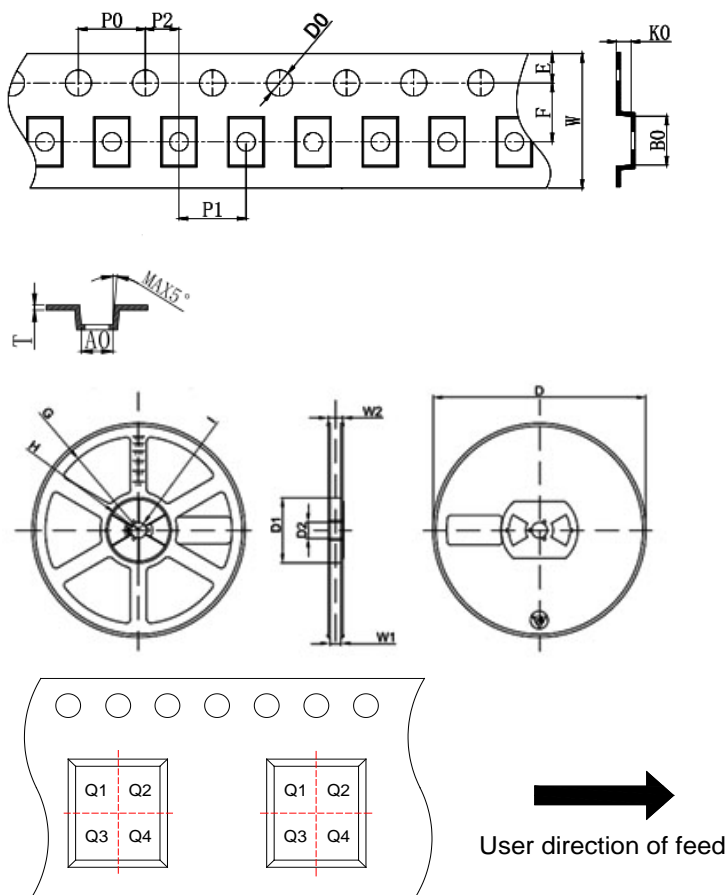
PACKAGE MECHANICAL DATA



Recommended Soldering Footprint

| Symbol | Millimeter | | | Inches | | |
|--------|------------|------|------|----------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| b | 0.75 | 0.85 | 0.95 | 0.030 | 0.033 | 0.037 |
| c | 0.08 | 0.12 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 1.55 | 1.60 | 1.65 | 0.061 | 0.063 | 0.065 |
| e | 1.10BSC | | | 0.043BSC | | |
| E | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| L | 0.35 | 0.40 | 0.45 | 0.014 | 0.016 | 0.018 |
| L1 | 0.06BSC | | | 0.002BSC | | |

TAPE AND REEL INFORMATION-DFN1610-2L



Pin 1 quadrant:Q1&Q2

Packaging Description:


DFN1610-2L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

| Symbol | Millimeters | Inches |
|--------|-------------|--------|
| | Typ. | Typ. |
| A0 | 1.15 | 0.045 |
| B0 | 1.75 | 0.069 |
| K0 | 0.67 | 0.026 |
| D0 | 1.55 | 0.061 |
| P0 | 4.00 | 0.157 |
| P1 | 4.00 | 0.157 |
| P2 | 2.00 | 0.079 |
| E | 1.75 | 0.069 |
| F | 3.50 | 0.138 |
| W | 8.00 | 0.315 |
| D | Φ178 | Φ7.008 |
| D1 | 54.40 | 2.142 |
| D2 | 13.00 | 0.512 |
| G | R78.00 | R3.071 |
| H | R25.60 | R1.008 |
| I | R6.50 | R0.256 |
| W1 | 9.50 | 0.374 |
| W2 | 12.30 | 0.484 |

ORDERING INFORMATION

| OUTLINE | Package | Reel Size | Quantity Per Reel |
|---------|------------|-----------|-------------------|
| TAPING | DFN1610-2L | 7 Inch | 3,000 pcs |

MARKING CODE

| Part Number | Marking Code |
|-------------|--|
| JEU07DP |  |

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