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# SP3374NUTG

**Low Capacitance Array for ESD Protection Diode**

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## Features

- Low operating voltage: 3.3V
- Ultra low capacitance: 5pF (Max)
- Ultra low leakage: nA level
- Low clamping voltage
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
- – IEC61000-4- (Lightning) 25A (8/20μs)
- – IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant
- Lead Finish: NiPdAu

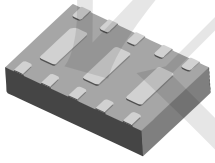
## Mechanical Characteristics

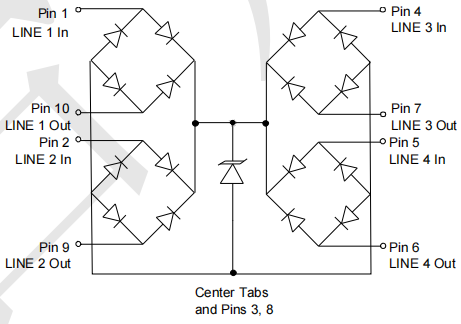
- Package: DFN3020-10
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty :3000/7Inch Tape & Reel

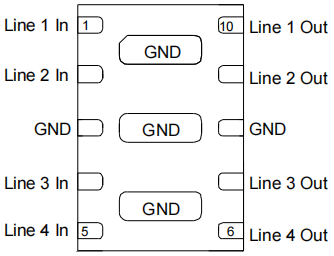
## Applications

- Digital Visual Interface (DVI)
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box
- Projection TV

## Dimensions and Pin Configuration





## Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20us) | | 400 | W |
| IEC61000-4-2(ESD) | Air<br>Contact | ±30<br>±30 | KV |
| Peak Pulse Current(8/20μs) | $I_{PP}$ | 25 | A |
| Operating Temperature Range | TJ | -55 to +125 | °C |
| Storage Temperature Range | Tstg | -55 to +150 | °C |

## Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | | 3.3 | V |
| Punch-Through Voltage | $V_{PT}$ | $I_T$=2μA | 3.5 | | | V |
| Snap-Back Voltage | $V_{SB}$ | $I_{SB}$=50mA | 2.8 | | | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ =3.3V | | | 0.5 | μA |
| Clamping Voltage | $V_C$ | $I_{PP}$=1A, $t_P$=8/20μs,<br>Any I/O Pin to Ground | | | 5.5 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$=10A, $t_P$=8/20μs,<br>Any I/O Pin to Ground | | | 10.5 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$=25A, $t_P$=8/20μs,<br>Any I/O Pin to Ground | | | 18 | V |
| Junction Capacitance | $C_J$ | $V_R$=0V, f=1MHz,<br>Any I/O Pin to Ground | | 3.8 | 5 | pF |
| Junction Capacitance | $C_J$ | $V_R$=0V, f=1MHz,<br>Between I/O Pins | | 1.7 | 2.5 | pF |

## Typical Performance Characteristics ($T_A$=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

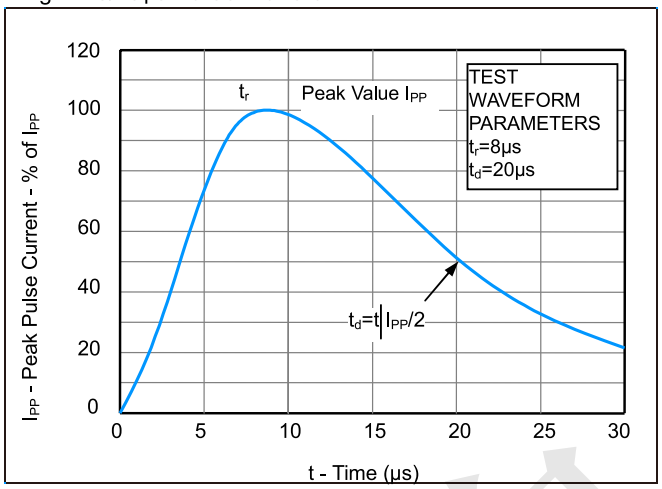



Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

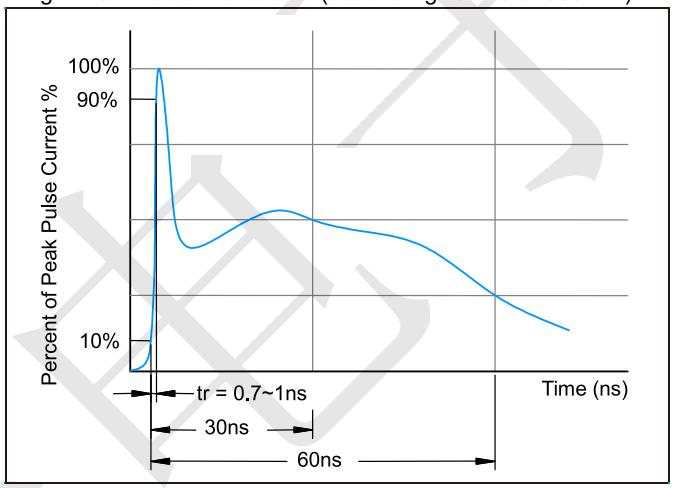
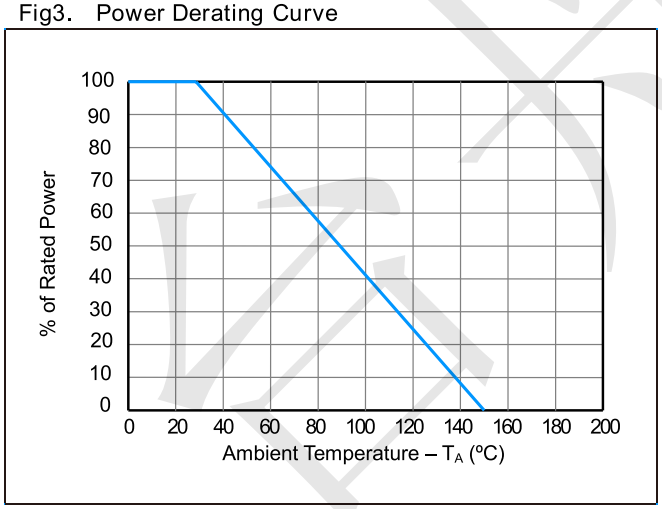
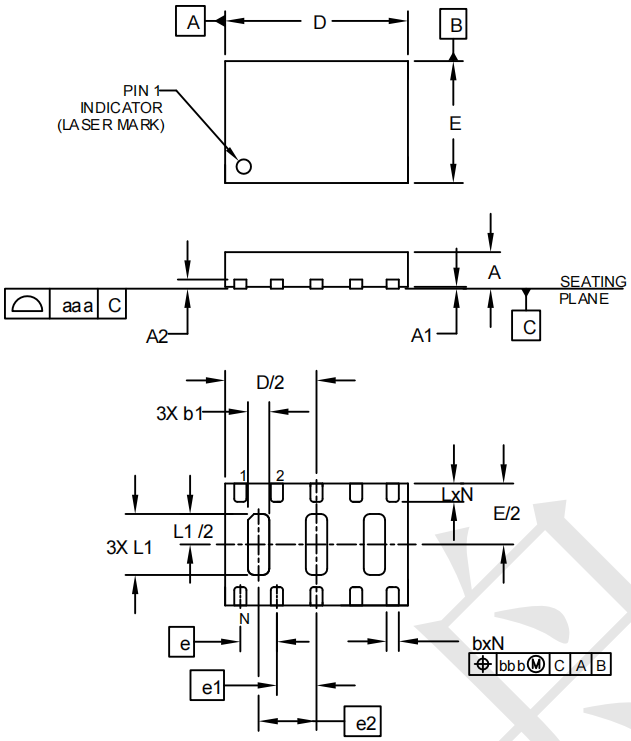



Fig3. Power Derating Curve

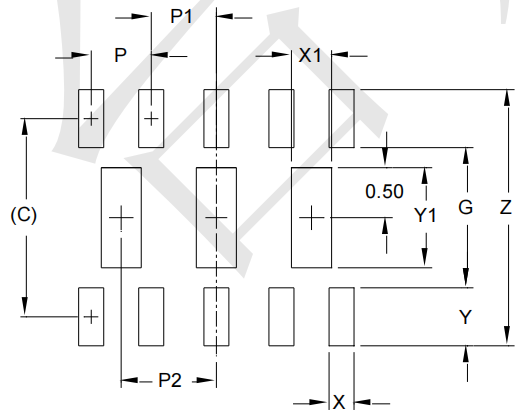


## DFN3020-10 Package Outline Drawing




| DIMENSIONS | | | |
|---|---|---|---|
| DIM | MILLIMETERS | | |
| | MIN | NOM | MAX |
| A | 0.50 | 0.60 | 0.65 |
| A1 | 0.00 | 0.03 | 0.05 |
| A2 | | (0.15) | |
| b | 0.15 | 0.20 | 0.25 |
| b1 | 0.25 | 0.35 | 0.45 |
| D | 2.90 | 3.00 | 3.10 |
| E | 1.90 | 2.00 | 2.10 |
| e | | 0.60 BSC | |
| e1 | | 0.65 BSC | |
| e2 | | 0.95 BSC | |
| L | 0.25 | 0.30 | 0.35 |
| L1 | 0.95 | 1.00 | 1.05 |
| N | | 10 | |
| aaa | | 0.08 | |
| bbb | | 0.10 | |

## Suggested Land Pattern




| DIMENSIONS | |
|---|---|
| DIM | MILLIMETERS |
| C | (1.98) |
| G | 1.40 |
| P | 0.60 |
| P1 | 0.65 |
| P2 | 0.95 |
| X | 0.25 |
| X1 | 0.40 |
| Y | 0.58 |
| Y1 | 1.00 |
| Z | 2.56 |