**HIGH-SPEED SWITCHING DIODE**

# DAN217N3

## Description

The DAN217N3 consists of two diodes in a plastic surface mount package. The diodes are connected in series and the unit is designed for high-speed switching application in hybrid thick and thin-film circuits.

## Features

- Small SMD Package (SOT-23)
- Ultra-high Speed
- Low Forward Voltage
- Fast Reverse Recovery Time

## Absolute Maximum Ratings

- Maximum Temperatures
  Storage Temperature ..... -65 ~ +150 °C
  Junction Temperature ..... +150 °C
- Maximum Power Dissipation
  Total Power Dissipation (Ta=25°C) ..... 250 mW
- Maximum Voltages and Currents (Ta=25°C)
  Reverse Voltage ..... 120 V
  Repetitive Reverse Voltage ..... 120 V
  Forward Current ..... 215 mA
  Repetitive Forward Current ..... 500 mA
  Forward Surge Current (1ms) ..... 1000 mA

## Characteristics (Ta=25°C)

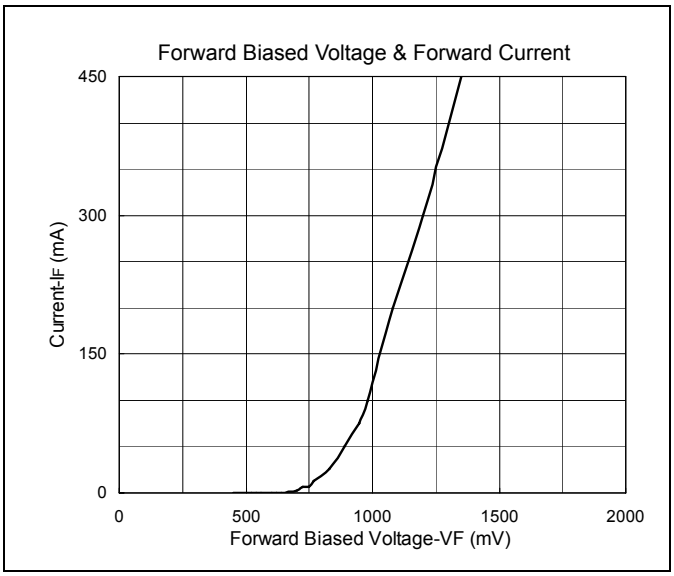
| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R$=100μA | 120 | - | V |
| Forward Voltage | $V_F$(1) | $I_F$=1mA | - | 715 | mV |
| | $V_F$(2) | $I_F$=10mA | - | 855 | mV |
| | $V_F$(3) | $I_F$=50mA | - | 1000 | mV |
| | $V_F$(4) | $I_F$=150mA | - | 1250 | mV |
| Reverse Current | $I_R$ | $V_R$=100V | - | 100 | nA |
| Total Capacitance | $C_T$ | $V_R$=0V, f=1MHz | - | 1.5 | pF |
| Reverse Recovery Time | Trr | $I_F$=$I_R$=10mA, $R_L$=100Ω measured at $I_R$=1mA | - | 4 | nS |

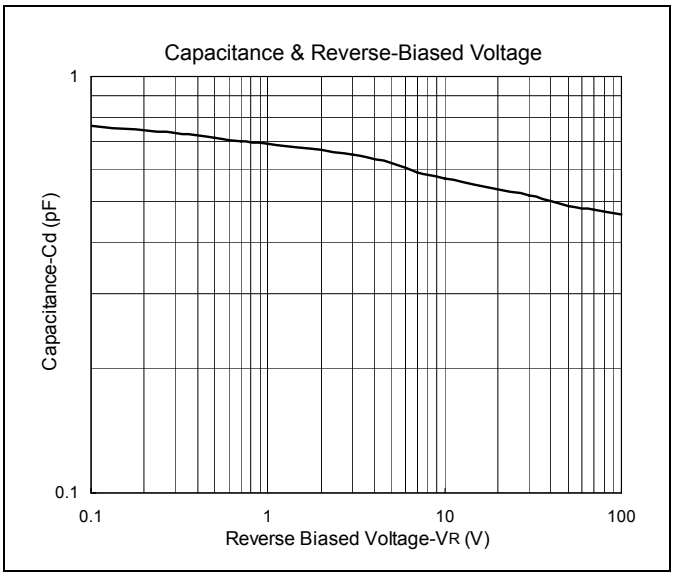
## Thermal Data

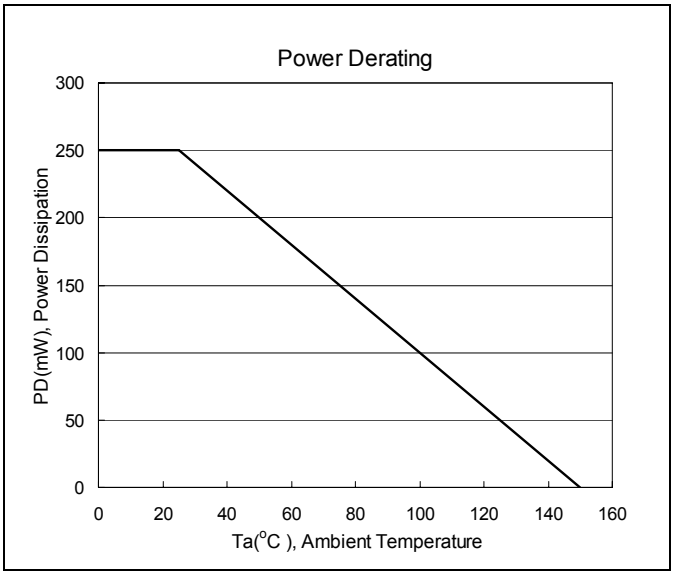
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Thermal Resistance, Junction-to-ambient, max | $R_{th,j-a}$ | 500 | °C/W |
| Thermal Resistance, Junction-to-ambient, max (Note 2) | $R_{th,j-a}$ | 357 | °C/W |

Note：1. Single Pulse , Pw=300μs, duty cycle≤2%.
2. Device mounted on FR-4 board 1.6" ×1.6" ×0.06" .

## Typical Characteristics



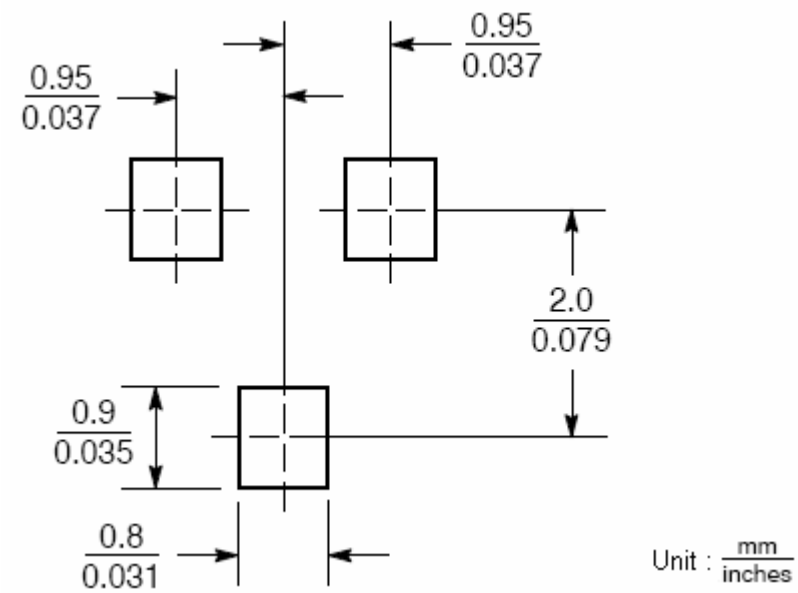



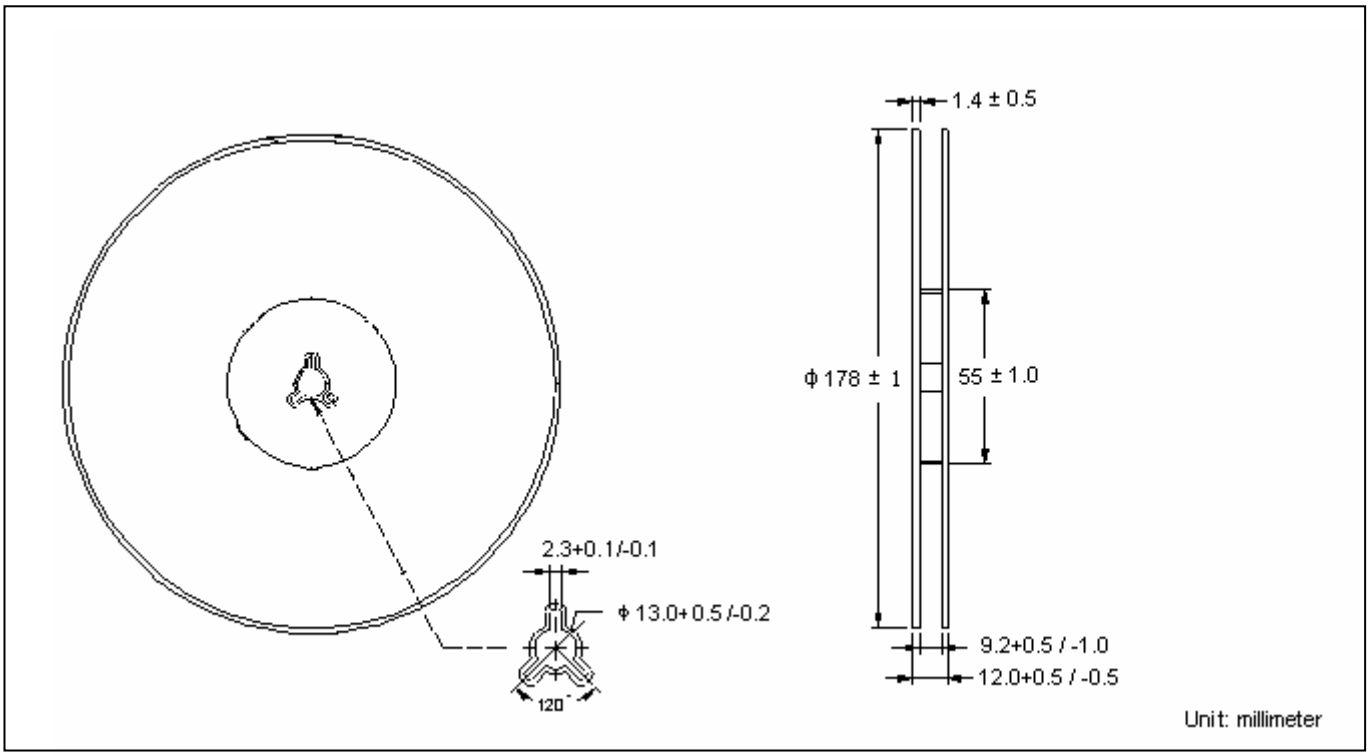
## Ordering Information

| Device | Package | Shipping | Marking |
|---|---|---|---|
| DAN217N3-0-T1-G | SOT-23<br>(Pb-free lead plating and halogen-free package) | 3000 pcs / Tape & Reel | A7 |

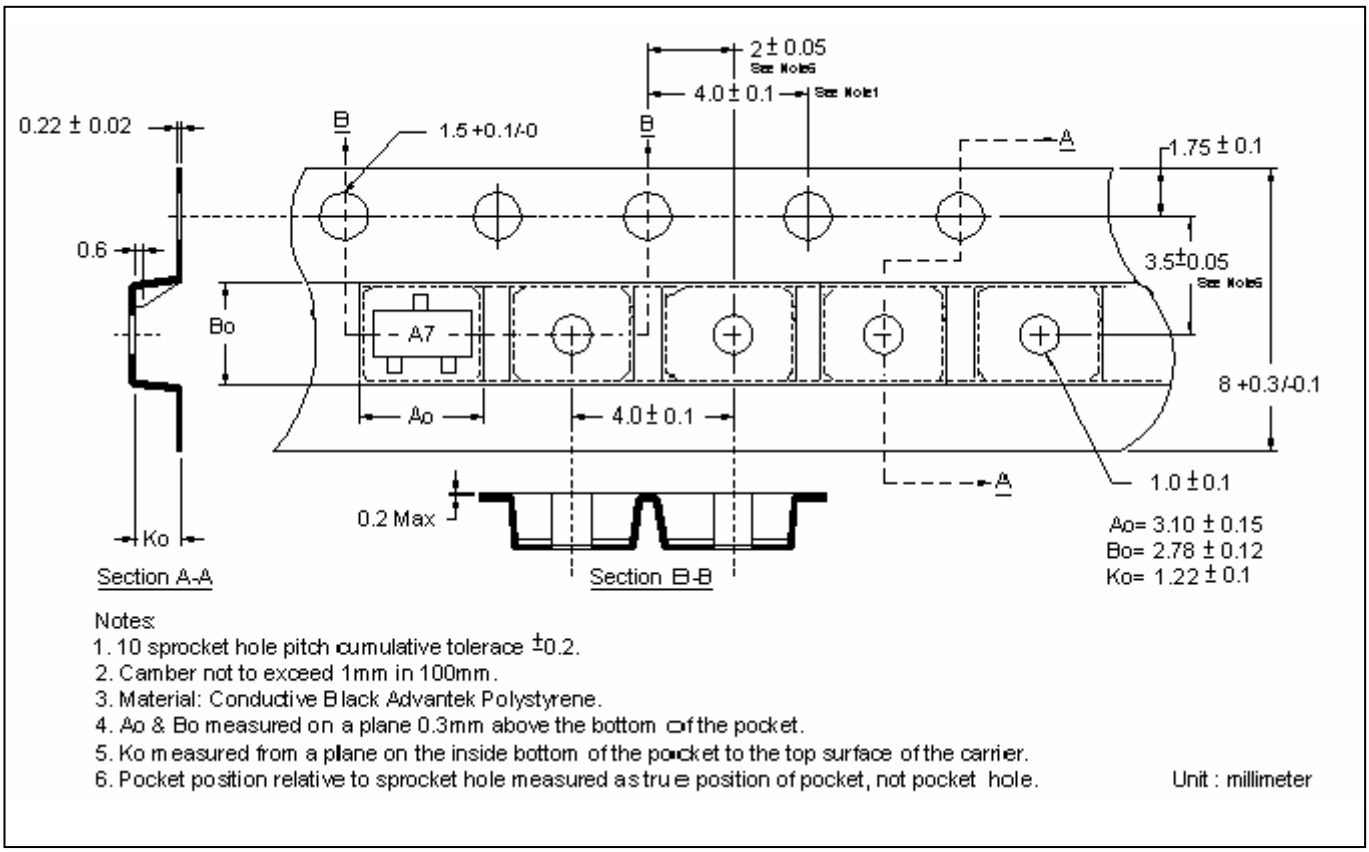
## Recommended Soldering Footprint



## Reel Dimension




## Carrier Tape Dimension



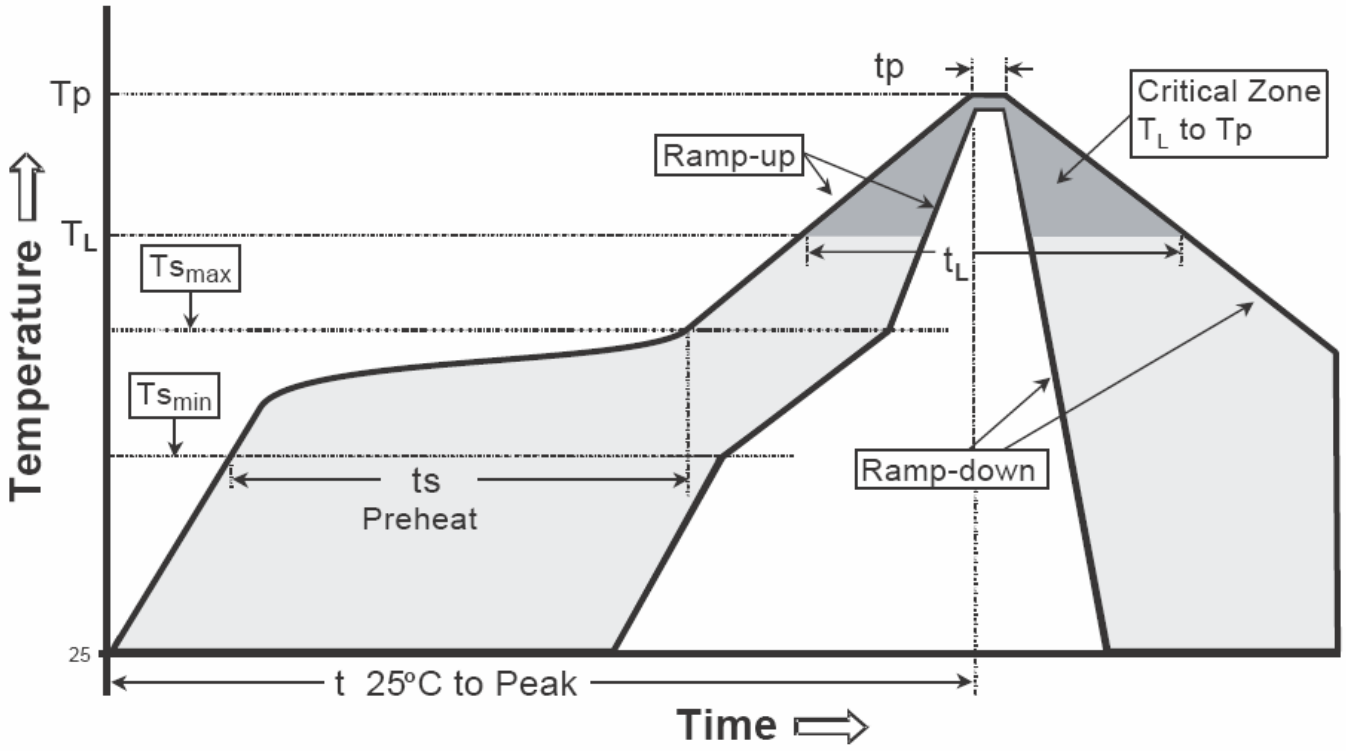

Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

## Recommended wave soldering condition

| Product | Peak Temperature | Soldering Time |
|---|---|---|
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

## Recommended temperature profile for IR reflow




| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|---|---|
| Average ramp-up rate (Tsmax to Tp) | 3°C/second max. | 3°C/second max. |
| Preheat<br>−Temperature Min(Ts min)<br>−Temperature Max(Ts max)<br>−Time(ts min to ts max) | <br>100°C<br>150°C<br>60-120 seconds | <br>150°C<br>200°C<br>60-180 seconds |
| Time maintained above:<br>−Temperature (TL)<br>− Time (tL) | <br>183°C<br>60-150 seconds | <br>217°C<br>60-150 seconds |
| Peak Temperature(TP) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

Note : All temperatures refer to topside of the package, measured on the package body surface.

## SOT-23 Dimension

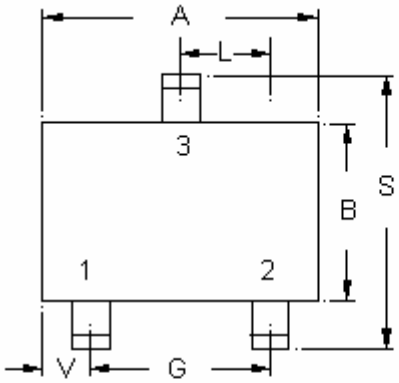
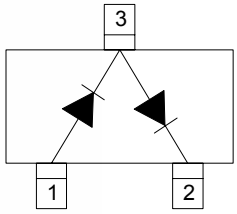
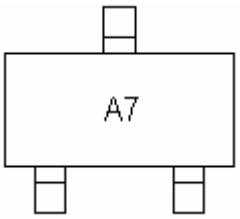
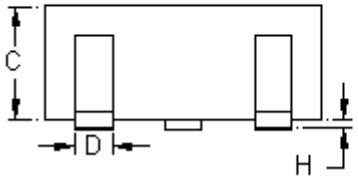


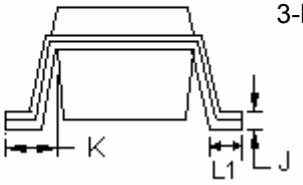

Diagram :




Marking :




3-Lead SOT-23 Plastic Surface Mounted Package
CYStek Package Code : N3

Style : Pin 1.Anode 2.Cathode
3.Common Connection

*:Typical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.1102 | 0.1204 | 2.80 | 3.04 | J | 0.0032 | 0.0079 | 0.08 | 0.20 |
| B | 0.0472 | 0.0669 | 1.20 | 1.70 | K | 0.0118 | 0.0266 | 0.30 | 0.67 |
| C | 0.0335 | 0.0512 | 0.89 | 1.30 | L | 0.0335 | 0.0453 | 0.85 | 1.15 |
| D | 0.0118 | 0.0197 | 0.30 | 0.50 | S | 0.0830 | 0.1161 | 2.10 | 2.95 |
| G | 0.0669 | 0.0910 | 1.70 | 2.30 | V | 0.0098 | 0.0256 | 0.25 | 0.65 |
| H | 0.0000 | 0.0040 | 0.00 | 0.10 | L1 | 0.0118 | 0.0197 | 0.30 | 0.50 |

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.