

# HN2D02FUTW1T1

## Ultra High Speed Switching Diodes

These Silicon Epitaxial Planar Diodes are designed for use in ultra high speed switching applications. These devices are housed in the SC-88 package which is designed for low power surface mount applications.

- Fast  $t_{rr}$ , < 3.0 ns
- Low  $C_D$ , < 2.0 pF
- Available in 8 mm Tape and Reel

Use HN2D02FUTW1T1 to order the 7 inch/3000 unit reel.

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

| Rating                             | Symbol                | Value | Unit |
|------------------------------------|-----------------------|-------|------|
| Reverse Voltage                    | $V_R$                 | 80    |      |
| Peak Reverse Voltage               | $V_{RM}$              | 85    |      |
| Forward Current                    | $I_F$                 | 100   | mAdc |
| Peak Forward Current               | $I_{FM}$              | 240   | mAdc |
| Peak Forward Surge Current (10 ms) | $I_{FSM}$<br>(Note 1) | 1.0   | mAdc |

### THERMAL CHARACTERISTICS

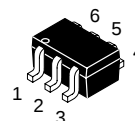
| Rating               | Symbol    | Max         | Unit             |
|----------------------|-----------|-------------|------------------|
| Power Dissipation    | $P_D$     | 300         | mW               |
| Junction Temperature | $T_J$     | 150         | $^\circ\text{C}$ |
| Storage Temperature  | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

1.  $t = 10$  ms
2. This is maximum rating for a single diode. Derate by 75 percent when using 2 or 3 diodes.

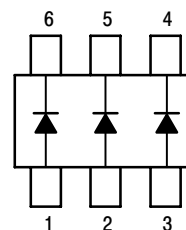


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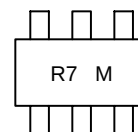
<http://onsemi.com>



SC-88  
CASE 419B



### MARKING DIAGRAM



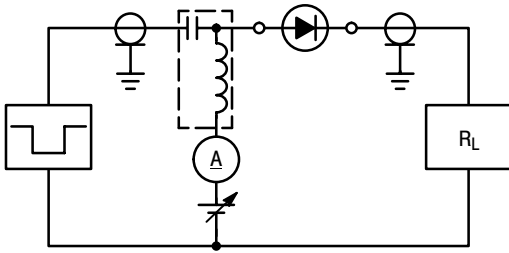
R7 = for Specified  
Device Code  
M = Date Code

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

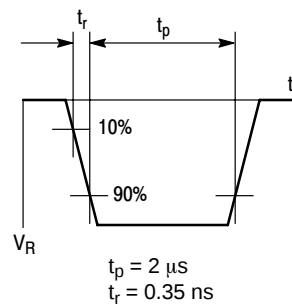
| Characteristic                   | Symbol            | Condition                                                                                  | Min | Max | Unit            |
|----------------------------------|-------------------|--------------------------------------------------------------------------------------------|-----|-----|-----------------|
| Reverse Voltage Leakage Current  | $I_R$             | $V_R = 35\text{ V}$                                                                        | —   | 0.1 | $\mu\text{Adc}$ |
|                                  |                   | $V_R = 75\text{ V}$                                                                        | —   | 0.1 |                 |
| Forward Voltage                  | $V_F$             | $I_F = 100\text{ mA}$                                                                      | —   | 1.2 | $\text{Vdc}$    |
| Reverse Breakdown Voltage        | $V_R$             | $I_R = 100\text{ }\mu\text{A}$                                                             | 80  | —   | $\text{Vdc}$    |
| Diode Capacitance                | $C_D$             | $V_R = 0, f = 1.0\text{ MHz}$                                                              | —   | 2.0 | $\text{pF}$     |
| Reverse Recovery Time (Figure 1) | $t_{rr}$ (Note 3) | $I_F = 10\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\text{ }\Omega, I_{rr} = 0.1\text{ }I_R$ | —   | 3.0 | $\text{ns}$     |

### 3. $t_{rr}$ Test Circuit

#### RECOVERY TIME EQUIVALENT TEST CIRCUIT



#### INPUT PULSE



#### OUTPUT PULSE

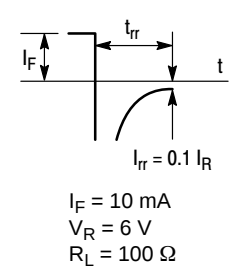


Figure 1. Reverse Recovery Time Equivalent Test Circuit

# HN2D02FUTW1T1

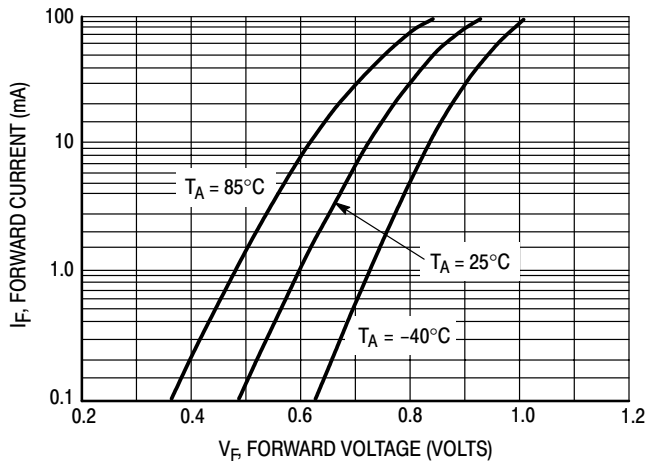


Figure 2. Forward Voltage

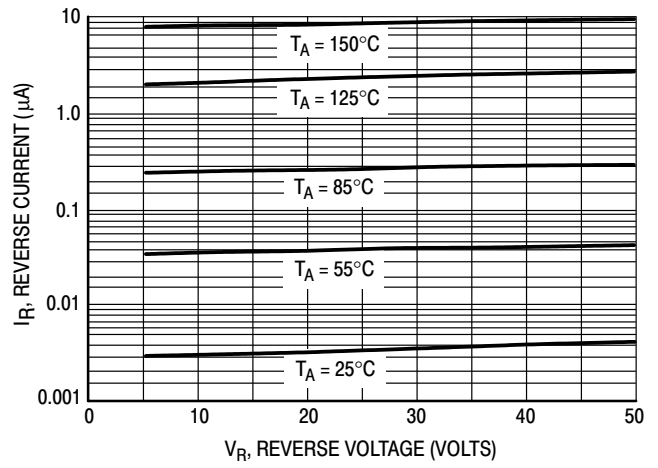


Figure 3. Leakage Current

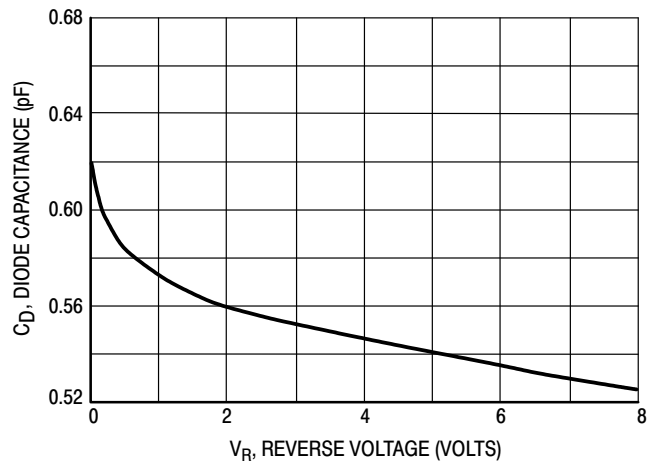
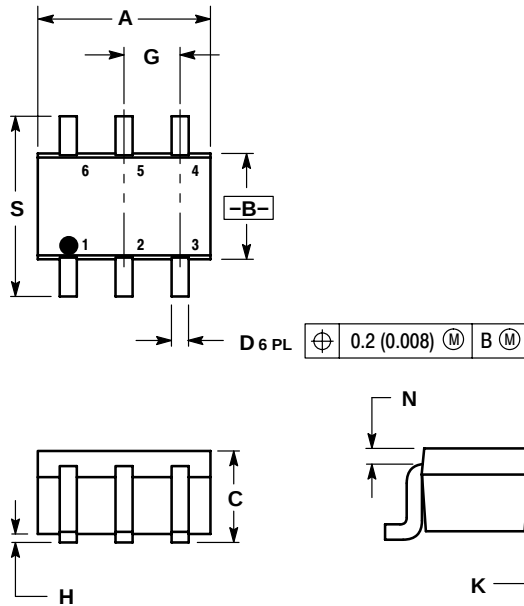


Figure 4. Capacitance

# HN2D02FUTW1T1

## PACKAGE DIMENSIONS

SC-88 (SOT-363)  
CASE 419B-02  
ISSUE N



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419B-01 OBSOLETE, NEW STANDARD 419B-02.

| DIM | INCHES    |       | MILLIMETERS |      |
|-----|-----------|-------|-------------|------|
|     | MIN       | MAX   | MIN         | MAX  |
| A   | 0.071     | 0.087 | 1.80        | 2.20 |
| B   | 0.045     | 0.053 | 1.15        | 1.35 |
| C   | 0.031     | 0.043 | 0.80        | 1.10 |
| D   | 0.004     | 0.012 | 0.10        | 0.30 |
| G   | 0.026 BSC |       | 0.65 BSC    |      |
| H   | ---       | 0.004 | ---         | 0.10 |
| J   | 0.004     | 0.010 | 0.10        | 0.25 |
| K   | 0.004     | 0.012 | 0.10        | 0.30 |
| N   | 0.008 REF |       | 0.20 REF    |      |
| S   | 0.079     | 0.087 | 2.00        | 2.20 |

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