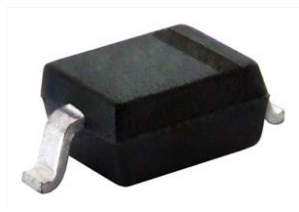


## Small Signal Fast Switching Diode



### MARKING (example only)



22610

Bar = cathode marking

XY = type code

### DESIGN SUPPORT TOOLS click logo to get started



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 mg

#### Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

| PART     | ORDERING CODE                      | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
|----------|------------------------------------|-----------------------|--------------|---------------|
| 1N4148WS | 1N4148WS-E3-08 or 1N4148WS-E3-18   | Single                | A2           | Tape and reel |
|          | 1N4148WS-HE3-08 or 1N4148WS-HE3-18 |                       |              |               |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                                                            | TEST CONDITION                                   | SYMBOL      | VALUE | UNIT |
|--------------------------------------------------------------------------------------|--------------------------------------------------|-------------|-------|------|
| Reverse voltage                                                                      |                                                  | $V_R$       | 75    | V    |
| Repetitive peak reverse voltage                                                      |                                                  | $V_{RRM}$   | 100   |      |
| Average rectified current half wave rectification with resistive load <sup>(1)</sup> | $f \geq 50 \text{ Hz}$                           | $I_{F(AV)}$ | 150   | mA   |
| Surge forward current                                                                | $t < 1 \text{ s}$ and $T_j = 25^{\circ}\text{C}$ | $I_{FSM}$   | 350   |      |
| Power dissipation <sup>(1)</sup>                                                     |                                                  | $P_{tot}$   | 200   | mW   |

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature.

### THERMAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                                 | TEST CONDITION | SYMBOL     | VALUE       | UNIT               |
|-----------------------------------------------------------|----------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air <sup>(1)</sup> |                | $R_{thJA}$ | 650         | K/W                |
| Junction temperature                                      |                | $T_j$      | 150         | $^{\circ}\text{C}$ |
| Storage temperature range                                 |                | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range                               |                | $T_{op}$   | -55 to +150 | $^{\circ}\text{C}$ |

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                                                                                                                                    |          |      |      |      |               |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------|------|------|------|---------------|
| PARAMETER                                                                                                | TEST CONDITION                                                                                                                     | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
| Forward voltage                                                                                          | $I_F = 10\text{ mA}$                                                                                                               | $V_F$    |      |      | 1    | V             |
|                                                                                                          | $I_F = 100\text{ mA}$                                                                                                              | $V_F$    |      |      | 1.2  | V             |
| Leakage current                                                                                          | $V_R = 20\text{ V}$                                                                                                                | $I_R$    |      |      | 25   | nA            |
|                                                                                                          | $V_R = 75\text{ V}$                                                                                                                | $I_R$    |      |      | 5    | $\mu\text{A}$ |
|                                                                                                          | $V_R = 100\text{ V}$                                                                                                               | $I_R$    |      |      | 100  |               |
|                                                                                                          | $V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                                                             | $I_R$    |      |      | 50   |               |
| Diode capacitance                                                                                        | $V_F = V_R = 0\text{ V}$                                                                                                           | $C_D$    |      |      | 4    | pF            |
| Voltage rise when switching ON                                                                           | Tested with 50 mA pulses,<br>$t_p = 0.1\text{ }\mu\text{s}$ , rise time $< 30\text{ ns}$ ,<br>$f_p = (5\text{ to }100)\text{ kHz}$ | $V_{fr}$ |      |      | 2.5  | V             |
| Reverse recovery time                                                                                    | $I_F = 10\text{ mA}, I_R = 1\text{ mA}, V_R = 6\text{ V},$<br>$R_L = 100\text{ }\Omega$                                            | $t_{rr}$ |      |      | 4    | ns            |

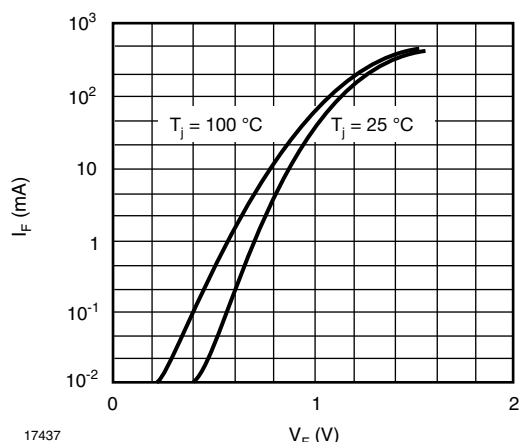
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Characteristics

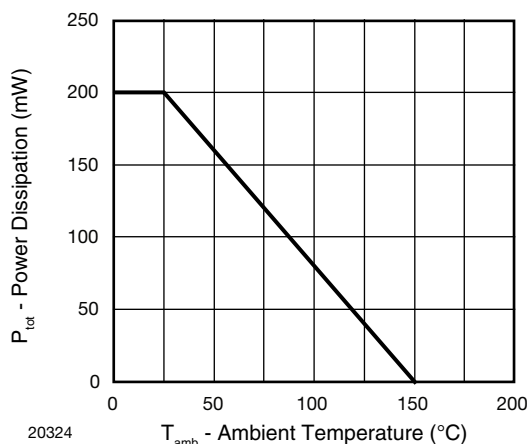


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

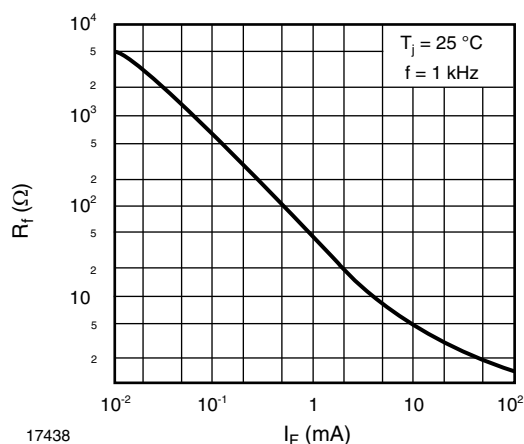


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

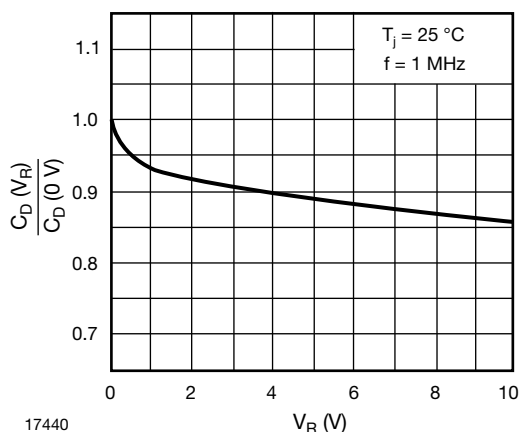


Fig. 4 - Relative Capacitance vs. Reverse Voltage

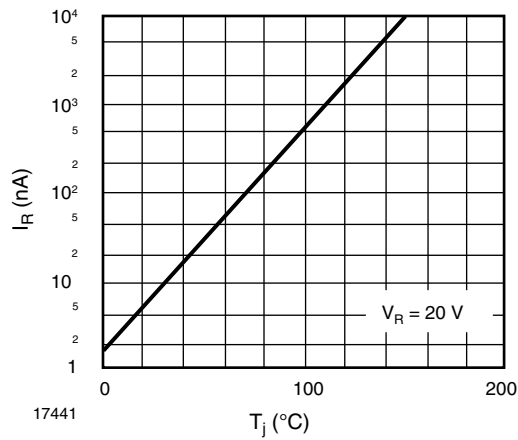


Fig. 5 - Leakage Current vs. Junction Temperature

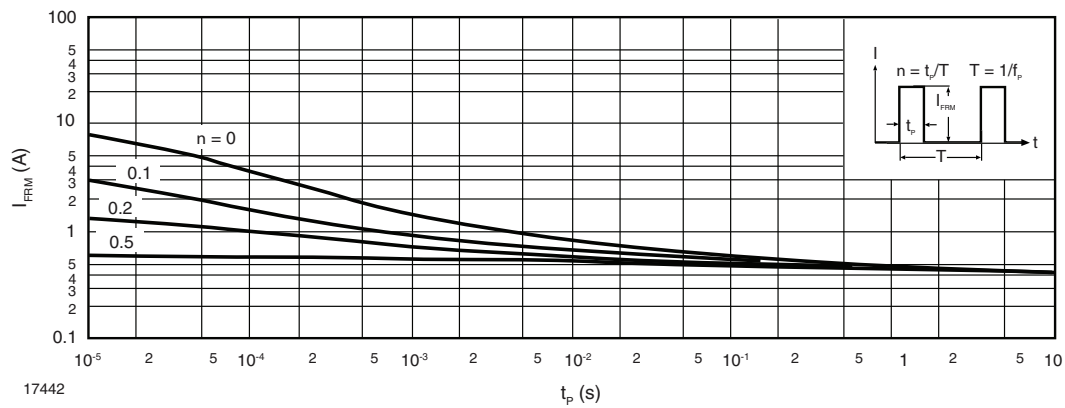
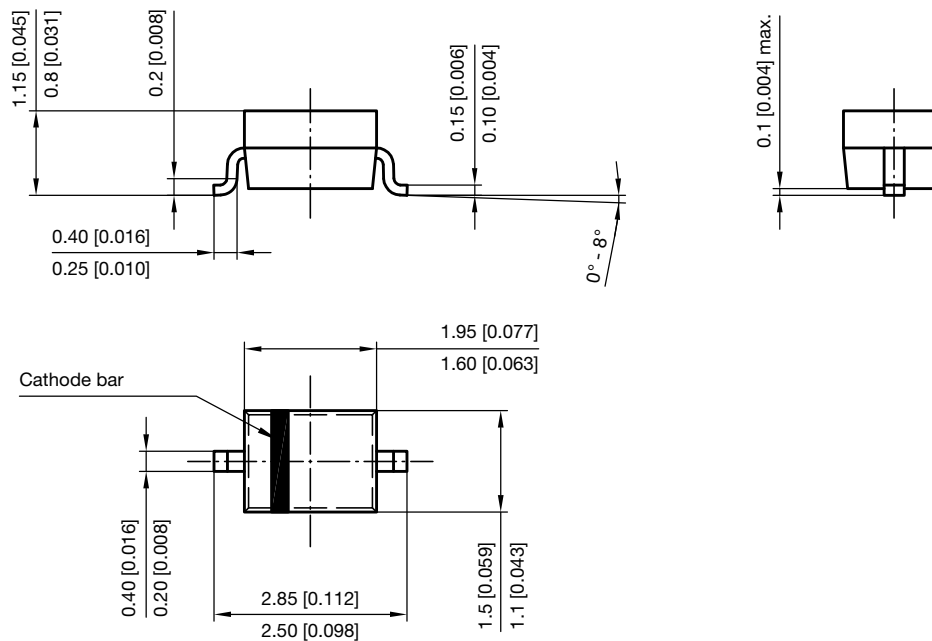


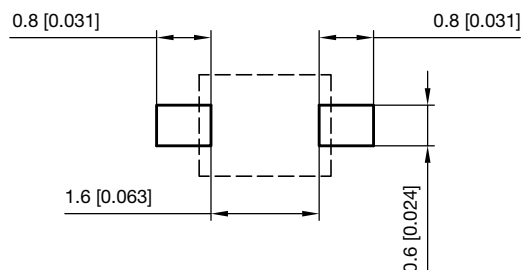
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**



Footprint recommendation:



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17443



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