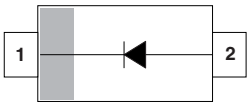
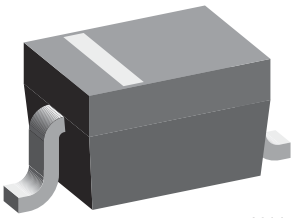
# Small Signal Fast Switching Diode




1 = Cathode
2 = Anode

22611



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## FEATURES

- These diodes are also available in other case styles including the DO-35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOT-23 case with the type designation IMBD4148-V
- Silicon epitaxial planar diode
- Fast switching diodes
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

## MARKING (example only)


22610

Bar = cathode marking
XY = type code

## MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 mg

**Packaging codes/options:**

GS18/10K per 13” reel (8 mm tape), 10K/box

GS08/3K per 7” reel (8 mm tape) , 15K/box



| PARTS TABLE | | | |
|---|---|---|---|
| **PART** | **ORDERING CODE** | **TYPE MARKING** | **REMARKS** |
| 1N4148WS-V | 1N4148WS-V-GS18 or 1N4148WS-V-GS08 | A2 | Tape and reel |

| **ABSOLUTE MAXIMUM RATINGS** ($T_{amb}$ = 25 °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 (1) | f ≥ 50 Hz | $I_{F(AV)}$ | 150 | mA |
| Surge forward current | t < 1 s and $T_j$ = 25 °C | $I_{FSM}$ | 350 | |
| Power dissipation (1) | | $P_{tot}$ | 200 | mW |

**Note**

(1) Valid provided that electrodes are kept at ambient temperature.

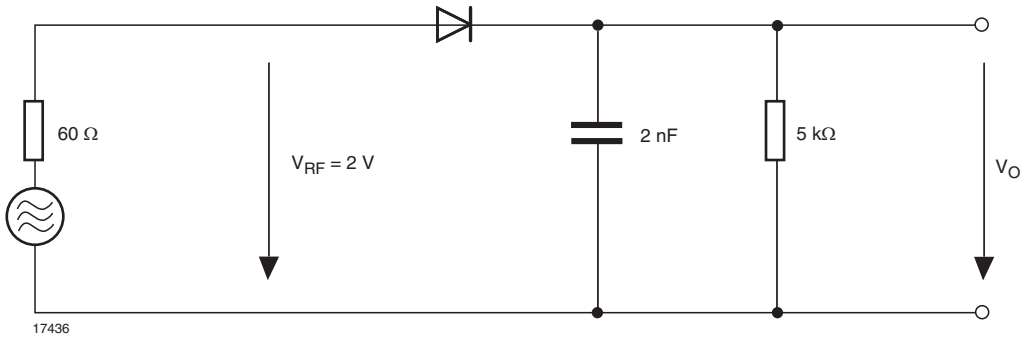
| THERMAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **VALUE** | **UNIT** |
| Thermal resistance junction to ambient air (1) | | $R_{thJA}$ | 650 | K/W |
| Junction temperature | | $T_j$ | 150 | °C |
| Operating temperature range | | $T_j$ | - 55 to + 150 | |
| Storage temperature range | | $T_{stg}$ | - 65 to + 150 | |

**Note**

(1) Valid provided that electrodes are kept at ambient temperature

| ELECTRICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Forward voltage | $I_F$ = 10 mA | $V_F$ | | | 1000 | mV |
| | $I_F$ = 100 mA | $V_F$ | | | 1200 | |
| Leakage current | $V_R$ = 20 V | $I_R$ | | | 25 | nA |
| | $V_R$ = 75 V | $I_R$ | | | 5 | µA |
| | $V_R$ = 100 V | $I_R$ | | | 100 | |
| | $V_R$ = 20 V, $T_j$ = 150 °C | $I_R$ | | | 50 | |
| Diode capacitance | $V_F = V_R$ = 0 V | $C_D$ | | | 4 | pF |
| Voltage rise when switching ON | Tested with 50 mA pulses, $t_p$ = 0.1 µs, rise time < 30 ns, $f_p$ = (5 to 100) kHz | $V_{fr}$ | | | 2.5 | V |
| Reverse recovery time | $I_F$ = 10 mA, $I_R$ = 1 mA, $V_R$ = 6 V, $R_L$ = 100 Ω | $t_{rr}$ | | | 4 | ns |
| Rectification efficiency | f = 100 MHz, $V_{RF}$ = 2 V | ηv | 0.45 | | | |

## RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT



## TYPICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified)

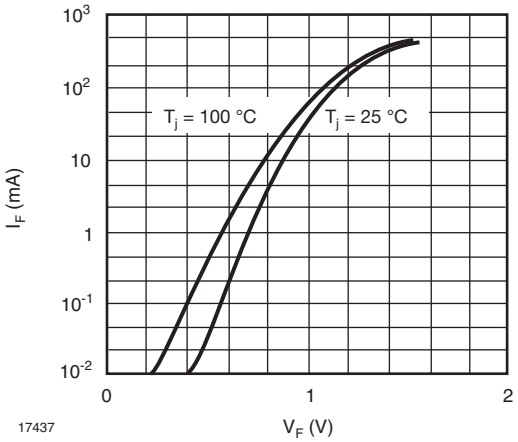



Fig. 1 - Forward characteristics

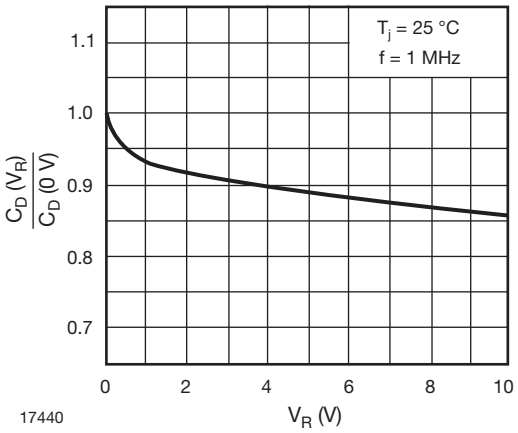



Fig. 4 - Relative Capacitance vs. Reverse Voltage

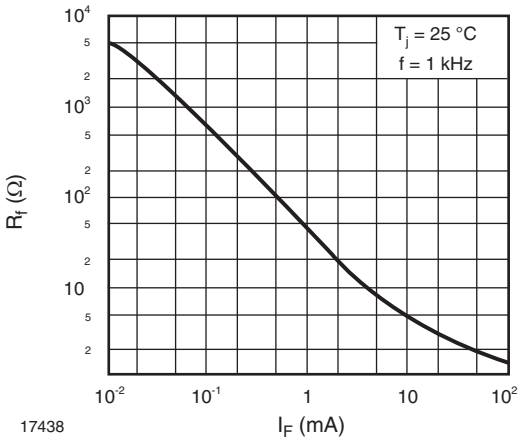



Fig. 2 - Dynamic Forward Resistance vs. Forward Current

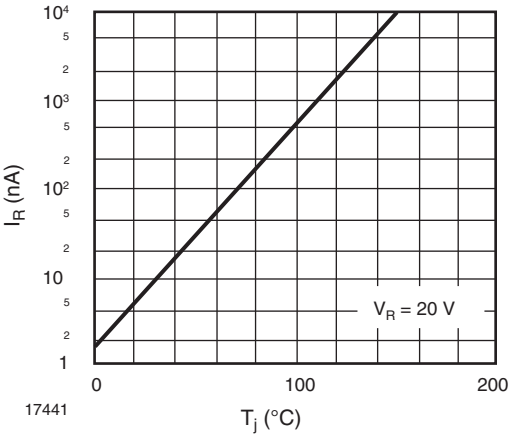



Fig. 5 - Leakage Current vs. Junction Temperature

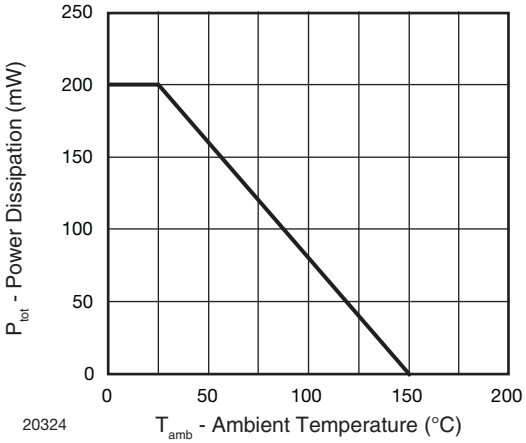



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

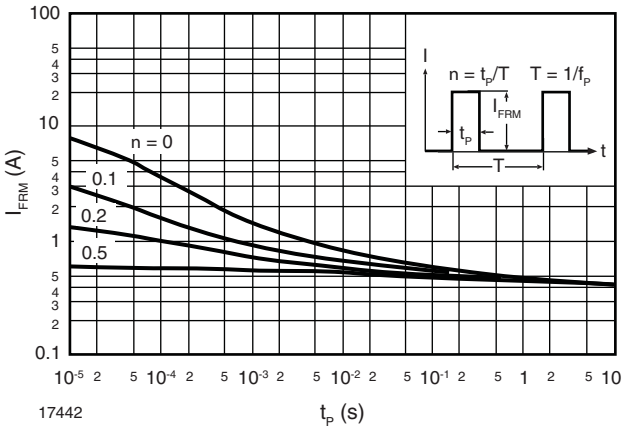
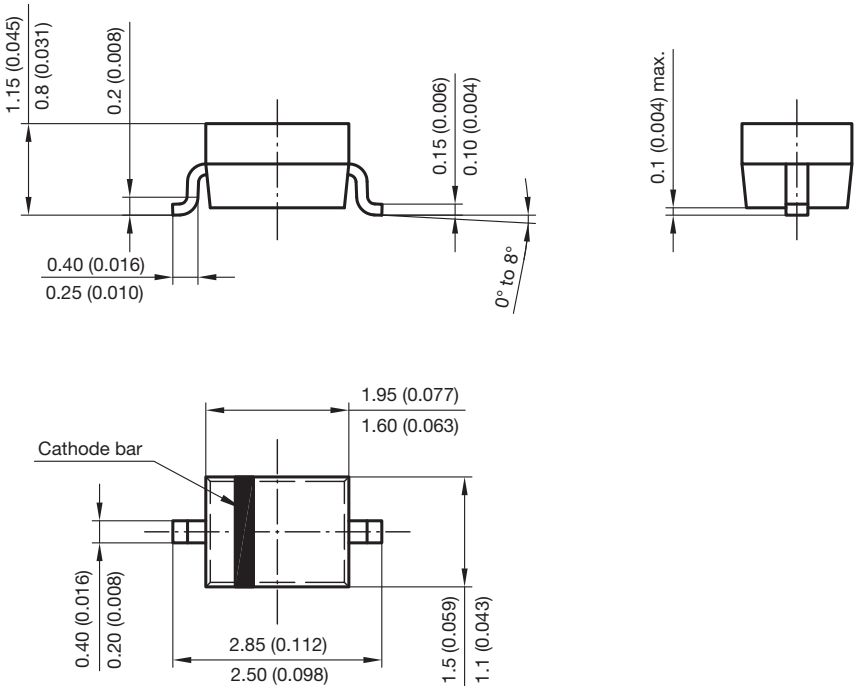
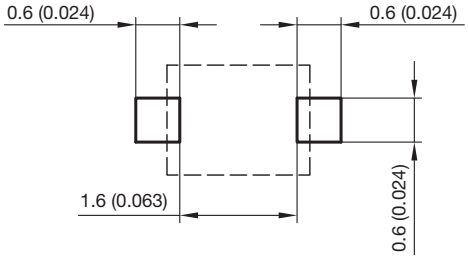



Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

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




Foot print recommendation:




Document no.:S8-V-3910.02-001 (4)
Created - Date: 24.August.2004
Rev. 5 - Date: 23.Sept.2009
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