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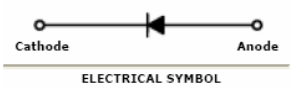
March 2008

# 1N4148WT / 1N4448WT / 1N914BWT
# High Conductance Fast Switching Diode

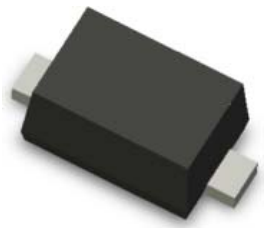
- Fast Switching Diode (Trr <4.0nsec)
- Flat Lead, Surface Mount Device under 0.70mm Height
- Extremely Small Outline Plastic Package SOD523F
- Moisture Level Sensitivity 1
- Pb-free Version and RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Green Mold Compound

**Device Marking Code**

| Device Type | Device Marking |
|---|---|
| 1N4148WT | E1 |
| 1N4448WT | E2 |
| 1N914BWT | E3 |



ELECTRICAL SYMBOL


SOD-523F
Band Indicates Cathode*

## Absolute Maximum Ratings* $T_a$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{RSM}$ | Non-Repetitive Peak Reverse Voltage | 75 | V |
| $V_{RRM}$ | Repetitive Peak Reverse Voltage | 75 | V |
| $I_{FRM}$ | Repetitive Peak Forward Current | 300 | mA |
| $T_J$ | Operating Junction Temperature Range | -55 to +150 | °C |
| $T_{STG}$ | Storage Temperature Range | -55 to +150 | °C |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**
1) These ratings are based on a maximum junction temperature of 150 degrees C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Thermal Characteristics

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 500 | °C/W |
| $P_D$ | Power Dissipation($T_C$=25°C) | 200 | mW |

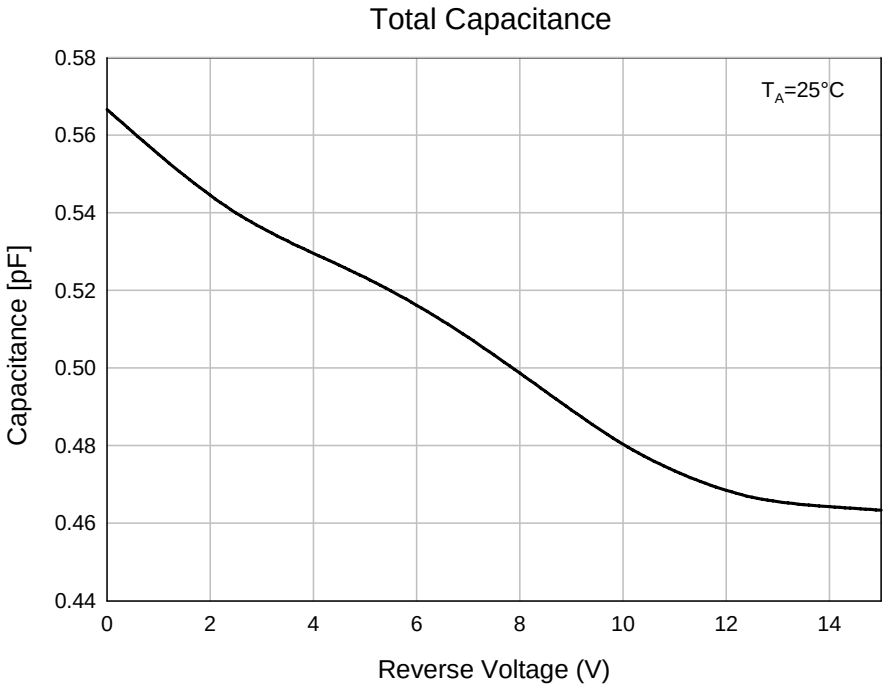
*Device mounted on FR-4 PCB minimum land pad.

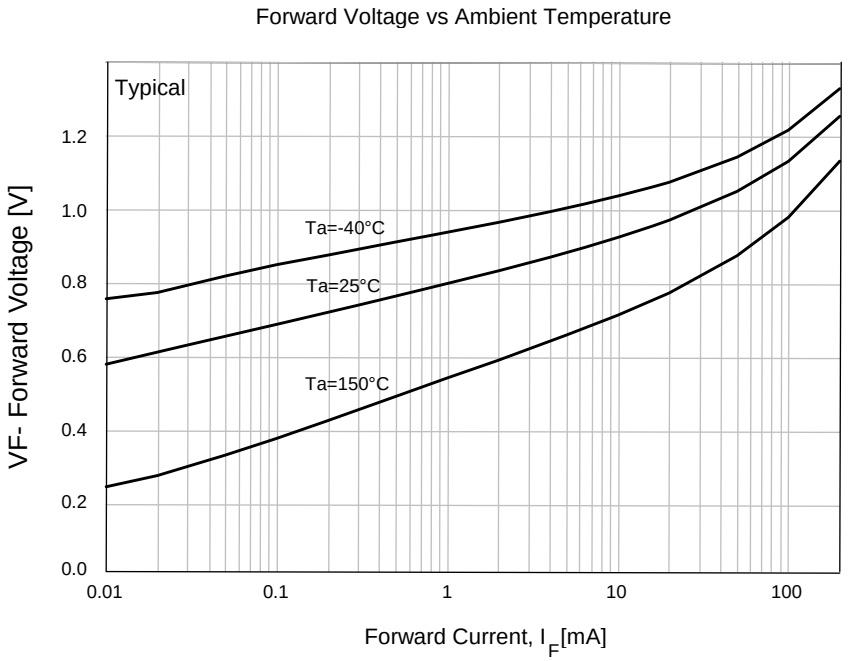
## Electrical Characteristics* $T_a$=25°C unless otherwise noted

| Symbol | Parameter | | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| $BV_R$ | Breakdown Voltage | | $I_R$ = 100 µA<br>$I_R$ = 5 µA | 100<br>75 | | | V |
| $I_R$ | Reverse Current | | $V_R$ = 20 V<br>$V_R$ = 75 V | | | 25<br>5 | nA<br>µA |
| $V_F$ | Forward Voltage | 1N4448WT/ 914WT<br>1N4448WT<br>1N4448WT/ 914WT | $I_F$ = 5 mA<br>$I_F$ = 10 mA<br>$I_F$ = 100 mA | 0.62 | | 0.72<br>1<br>1 | V |
| $C_O$ | Diode Capacitance | | $V_R$ = 0, f = 1 MHz | | | 4 | pF |
| $T_{RR}$ | Reverse Recovery Time | | $I_F$ = 10 mA, $V_R$ = 6.0 V<br>$I_{RR}$ = 1 mA, $R_L$ = 100 Ω | | | 4 | nS |

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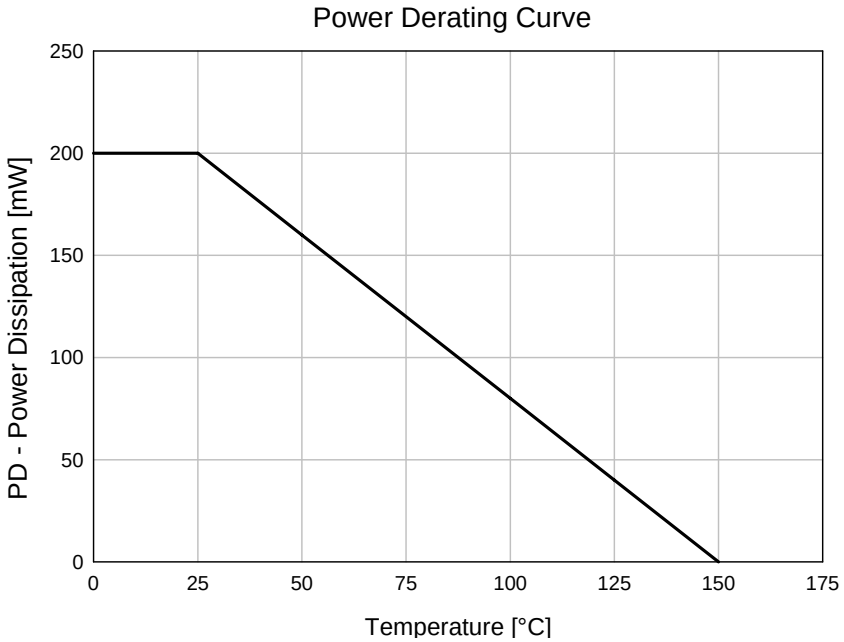
## Typical Performance Characteristics

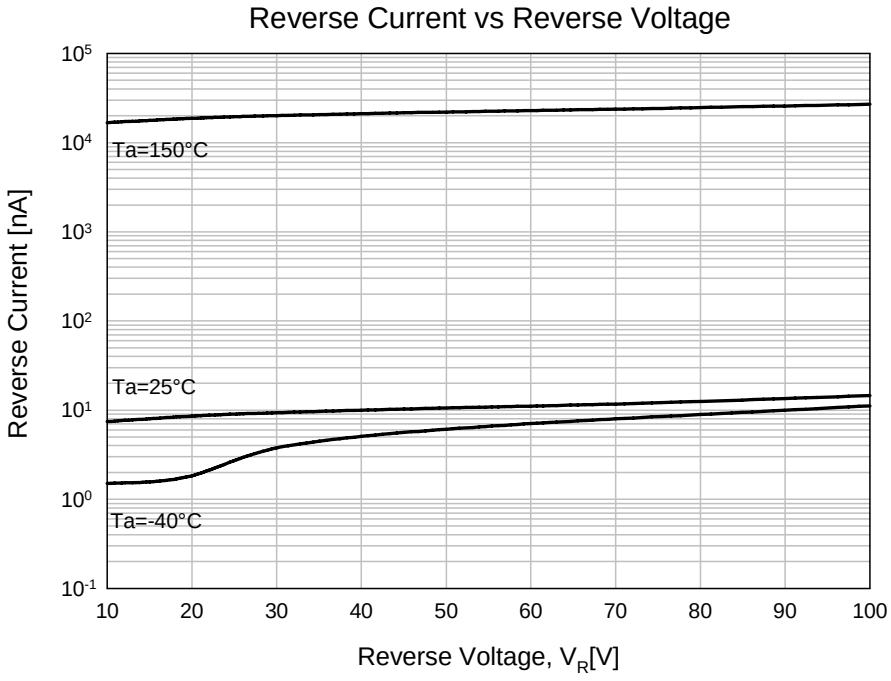



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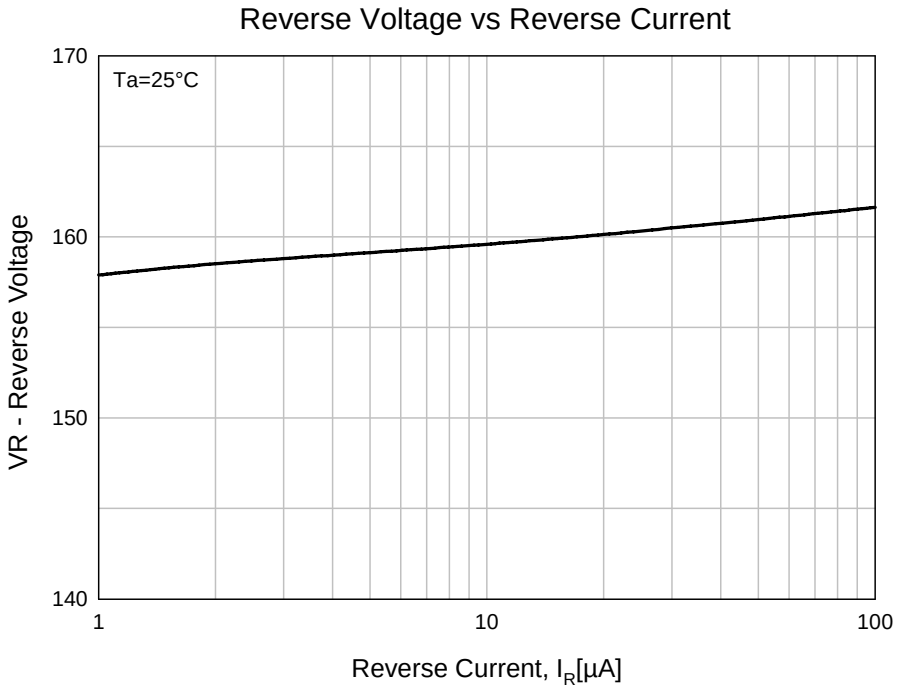
## Typical Performance Characteristics




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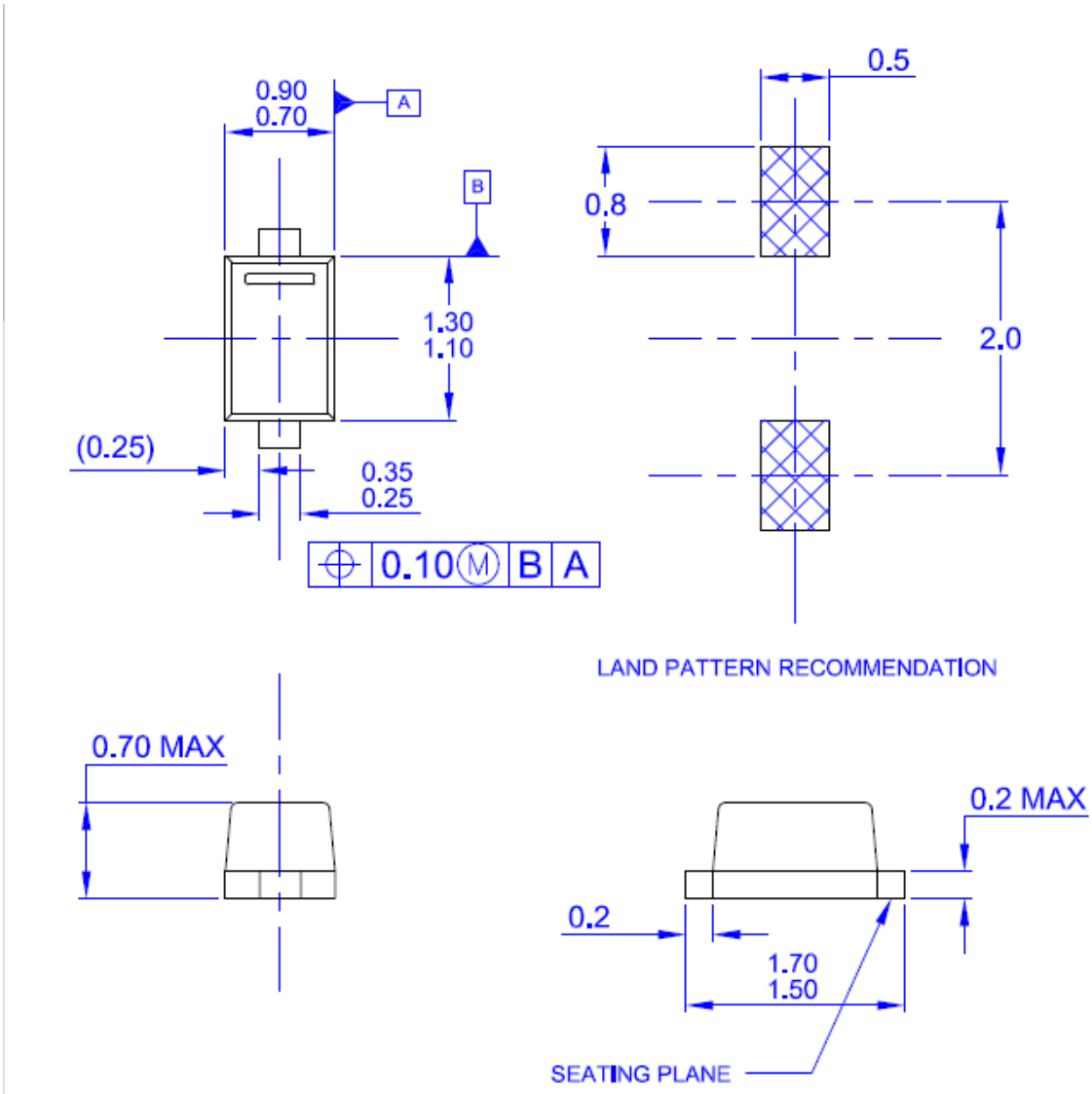
## Typical Performance Characteristics




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## Package Dimension

### SOD-523F




NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE REFERENCE: THIS PACKAGE OUTLINE CONFORMS TO JEITA SC-79.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M - 1994
D) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
E) LANDPATTERN RECOMMENDATION IS BASED ON IPC7351A STANDARD SOD1609X65M.
F) DRAWING NUMBER AND REVISION:MKT-SOD523F1rev1

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## PRODUCT STATUS DEFINITIONS

**Definition of Terms**

| Datasheet Identification | Product Status | Definition |
|---|---|---|
| Advance Information | Formative or In Design | This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. |
| Preliminary | First Production | This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
| No Identification Needed | Full Production | This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
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