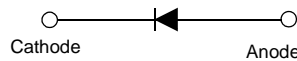


# 1N4148WT / 1N4448WT / 1N914BWT High Conductance Fast Switching Diode

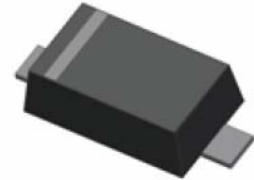
## Features

- Fast Switching Diode ( $T_{rr} < 4.0\text{ns}$ )
- 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\* $T_A=25^\circ\text{C}$ 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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

\* 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

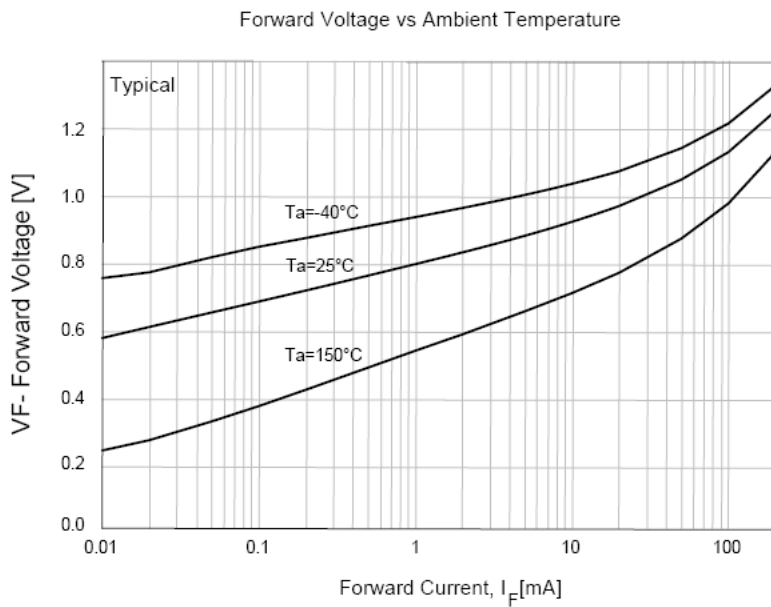
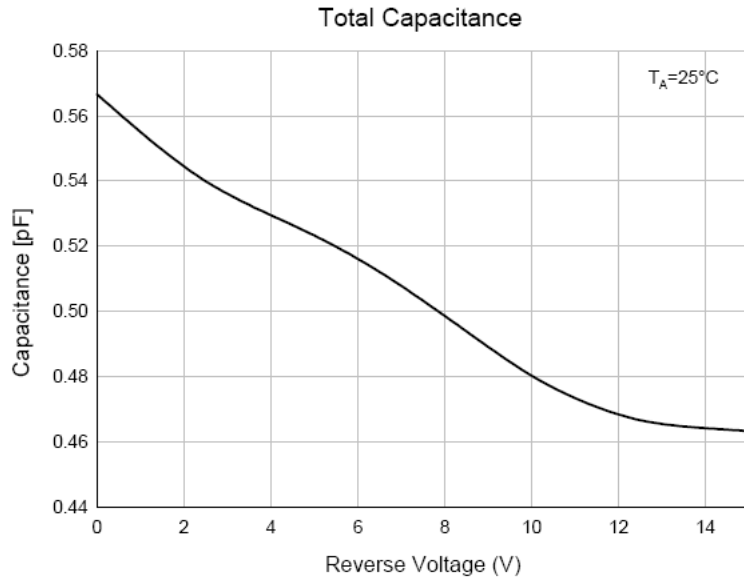
Symbol	Parameter	Value	Units
$P_D$	Power Dissipation ( $T_C=25^\circ\text{C}$ )	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	500	$^\circ\text{C}/\text{W}$

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

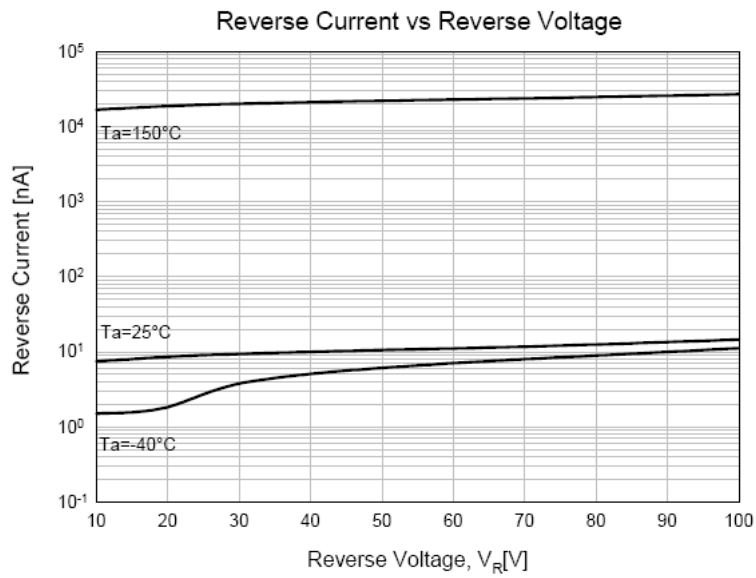
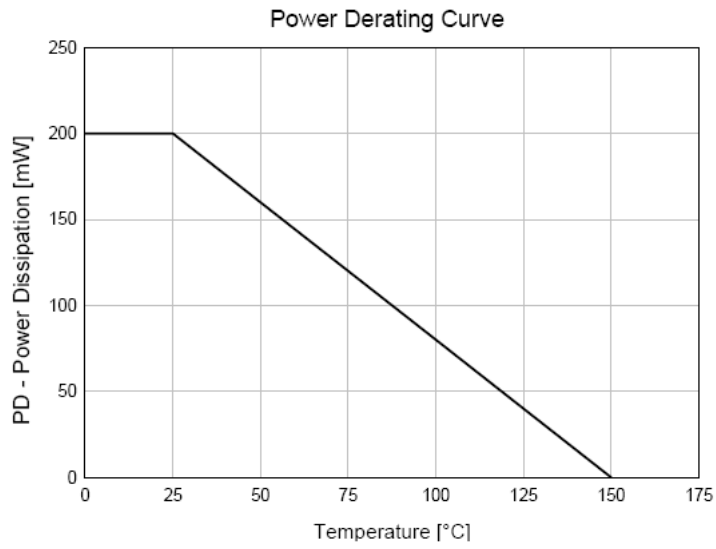
## Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$BV_R$	Breakdown Voltage	$I_R = 100\ \mu\text{A}$ $I_R = 5\ \mu\text{A}$	100 75			V
$I_R$	Reverse Current	$V_R = 20\ \text{V}$ $V_R = 75\ \text{V}$			25 5	nA $\mu\text{A}$
$V_F$	Forward Voltage	1N4448WT/ 914BWT 1N4148WT 1N4448WT/ 914BWT	0.62		0.72 1 1	V
$C_O$	Diode Capacitance	$V_R = 0, f = 1\ \text{MHz}$			4	pF
$T_{RR}$	Reverse Recovery Time	$I_F = 10\ \text{mA}, V_R = 6.0\ \text{V}$ $I_{RR} = 1\ \text{mA}, R_L = 100\ \Omega$			4	nS

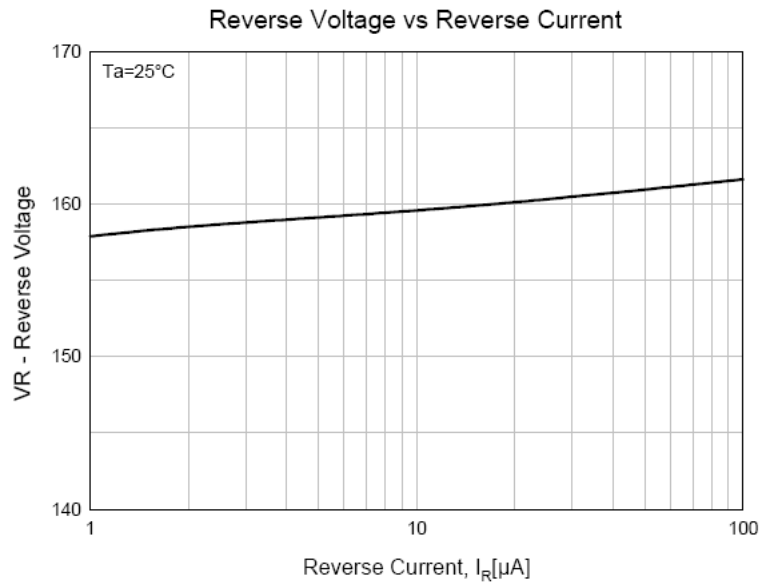
### Typical Performance Characteristics



Typical Performance Characteristics (Continue)

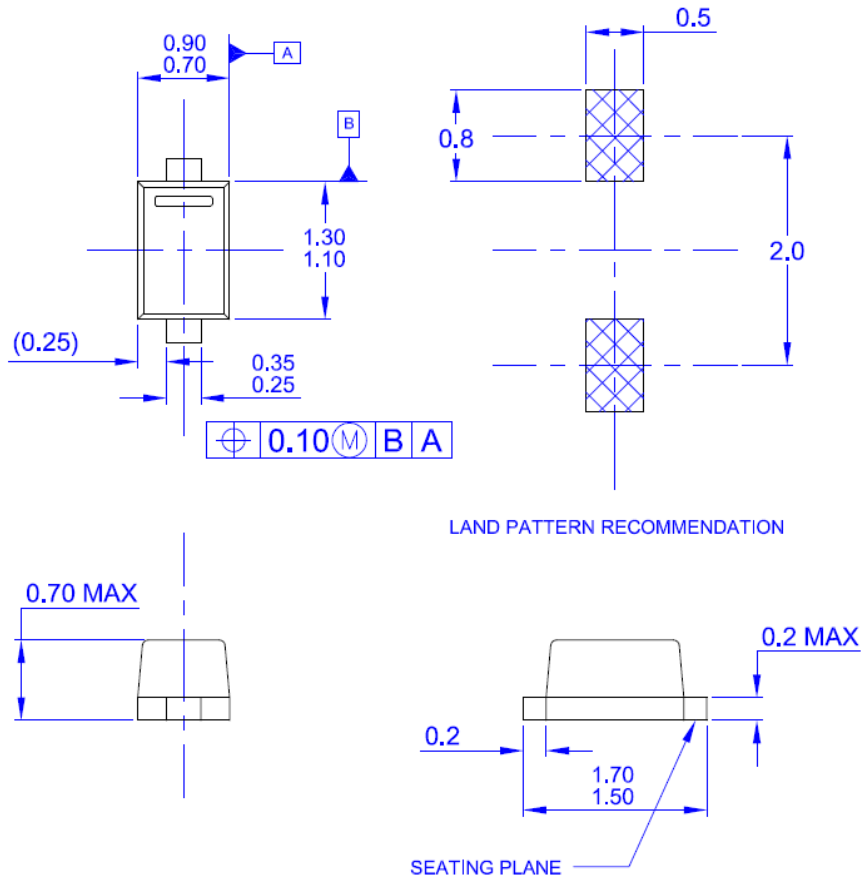


### Typical Performance Characteristics (Continue)



Physical 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



**TRADEMARKS**

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

AccuPower™	FPS™	PowerTrench®	The Power Franchise®
Auto-SPM™	F-PFS™	PowerXS™	the power franchise
Build it Now™	FRFET®	Programmable Active Droop™	TinyBoost™
CorePLUS™	Global Power Resource™	QFET®	TinyBuck™
CorePOWER™	Green FPS™	QS™	TinyCalc™
CROSSVOLT™	Green FPS™ e-Series™	Quiet Series™	TinyLogic®
CTL™	Gmax™	RapidConfigure™	TINYOPTO™
Current Transfer Logic™	GTO™		TinyPower™
EcoSPARK®	IntelliMAX™	Saving our world, 1mW/W/kW at a time™	TinyPwm™
EfficientMax™	ISOPLANAR™	SmartMax™	TriFault Detect™
EZSWITCH™*	MegaBuck™	SMART START™	TRUECURRENT™*
	MICROCOUPLER™	SPM®	µSerDes™
	MicroFET™	STEALTH™	
Fairchild®	MicroPak™	SuperFET™	UHC®
Fairchild Semiconductor®	MillerDrive™	SuperSOT™-3	Ultra FRFET™
FACT Quiet Series™	MotionMax™	SuperSOT™-6	UniFET™
FACT®	Motion-SPM™	SuperSOT™-8	VCX™
FAST®	OPTOLOGIC®	SupreMOS™	VisualMax™
FastvCore™	OPTOPLANAR®	SyncFET™	XS™
FETBench™		Sync-Lock™	
FlashWriter®*	PDP SPM™		
	Power-SPM™		

\* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in 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.

**ANTI-COUNTERFEITING POLICY**

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, [www.fairchildsemi.com](http://www.fairchildsemi.com), under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

**PRODUCT STATUS DEFINITIONS**

**Definition of Terms**

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	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	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.