

**General Description:**

The high breakdown voltage, fast switching speed and high forward conductance of this diode packaged in a SOT-23 Surface Mount package makes it desirable also as a general purpose diode.

## High Conductance Fast Diode

### Absolute Maximum Ratings\* TA = 25°C unless otherwise noted

Sym	Parameter	Value	Units
T <sub>stg</sub>	Storage Temperature	-55 to +150	°C
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
P <sub>D</sub>	Total Power Dissipation at T <sub>A</sub> = 25°C	350	W
	Linear Derating Factor from T <sub>A</sub> = 25°C	2.8	mW/°C
R <sub>OJA</sub>	Thermal Resistance Junction-to-Ambient	357	°C/W
W <sub>iv</sub>	Working Inverse Voltage	75	V
I <sub>O</sub>	Average Rectified Current	200	mA
I <sub>F</sub>	DC Forward Current (IF)	600	mA
i <sub>f</sub>	Recurrent Peak Forward Current (IF)	700	mA
i <sub>F(surge)</sub>	Peak Forward Surge Current (IFSM) Pulse Width = 1.0 second	1.0	Amp
	Pulse Width = 1.0 microsecond	2.0	Amp

**Features:**

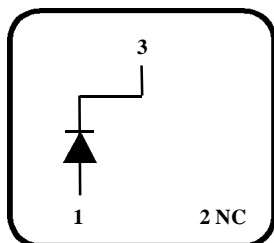
- 350 milliwatt Power Dissipation package.
- High Breakdown Voltage, Fast Switching Speed.
- Typical capacitance less than 1.5 picofarad.

**Ordering:**

- 7 inch reel (178 mm); 8 mm Tape; 3,000 units per reel.

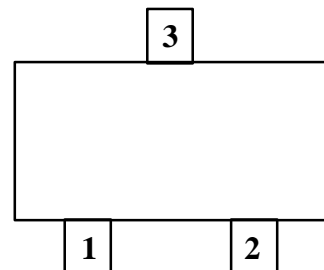
\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired

**CONNECTION DIAGRAMS**



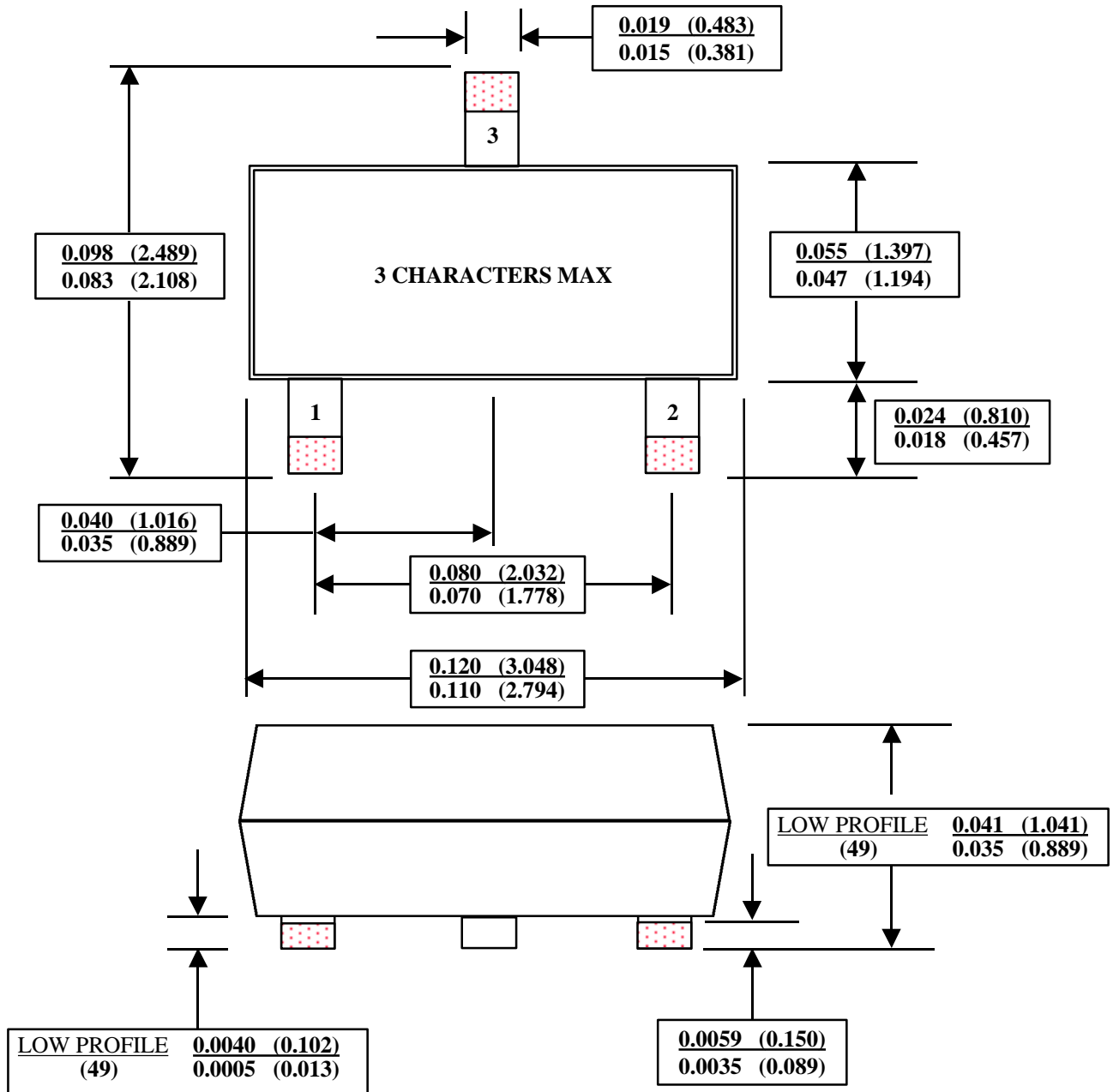
**PACKAGE**  
TO-236AB (Low)

Top Mark: RAB

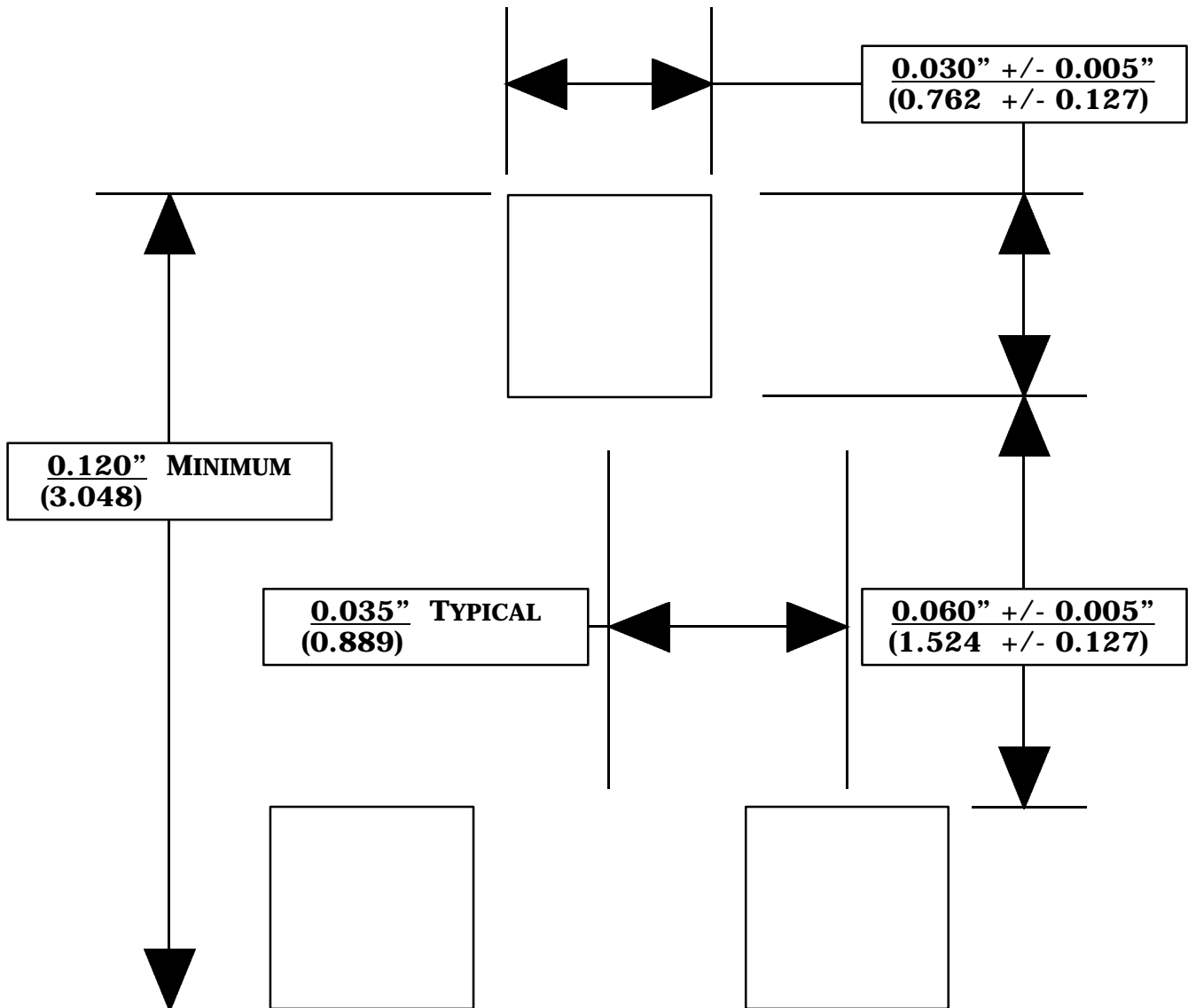


### Electrical Characteristics TA = 25°C unless otherwise noted

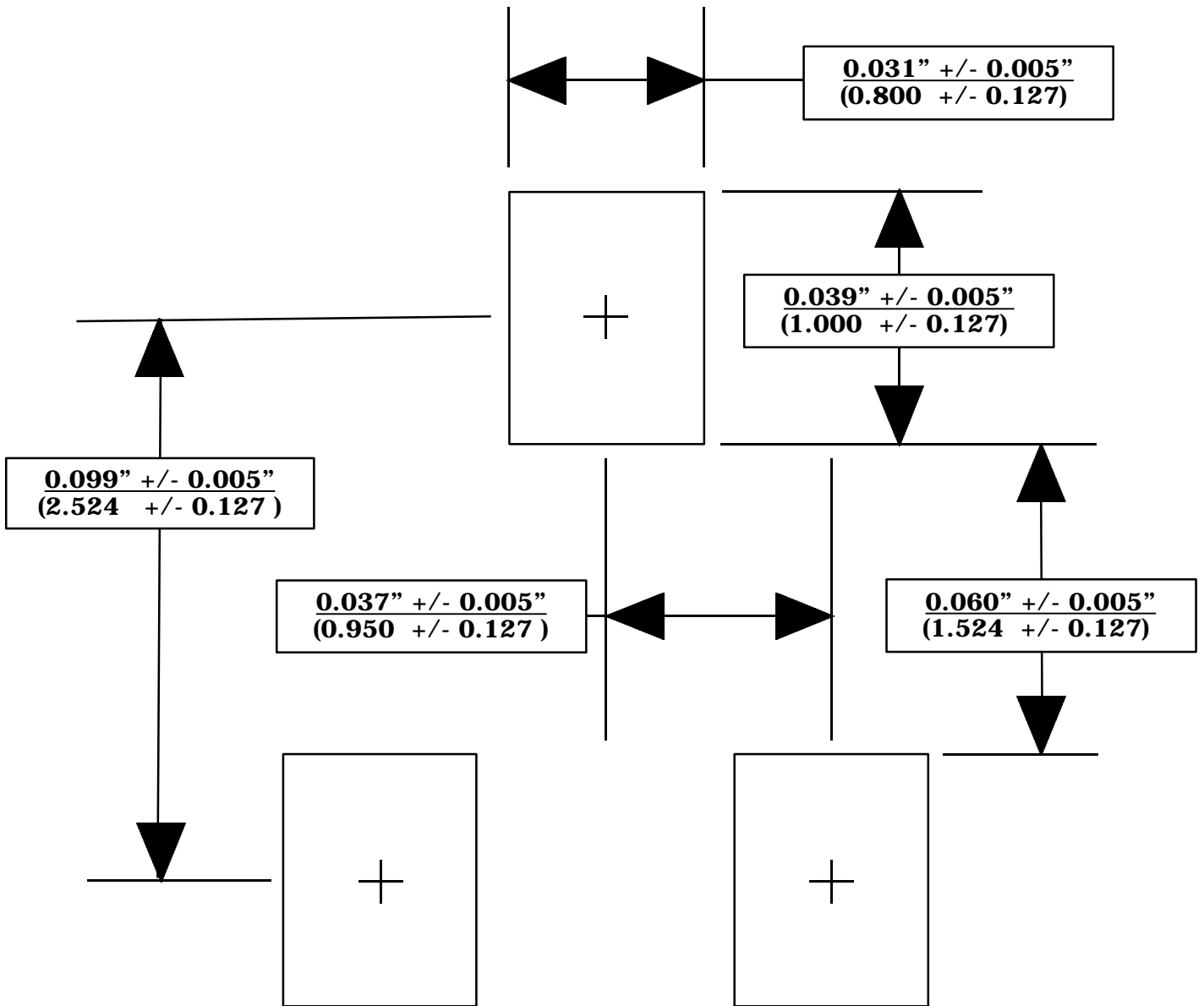
SYM	CHARACTERISTICS	MIN	MAX	UNITS	TEST CONDITIONS
B <sub>V</sub>	Breakdown Voltage	100		V	I <sub>R</sub> = 100 uA
				V	I <sub>R</sub> = 5.0 uA
I <sub>R</sub>	Reverse Leakage		25	nA	V <sub>R</sub> = 20 V
			50	uA	V <sub>R</sub> = 20 V T <sub>A</sub> = 150 Deg C
			5.0	uA	V <sub>R</sub> = 75 V
V <sub>F</sub>	Forward Voltage	620	720	mV	I <sub>F</sub> = 5 mA
			1.0	V	I <sub>F</sub> = 100 mA
C <sub>T</sub>	Capacitance		2.0	pF	V <sub>R</sub> = 0.0 V, f = 1.0 MHz
T <sub>RR</sub>	Reverse Recovery Time		4.0	ns	I <sub>F</sub> = 10 mA I <sub>R</sub> = 10 mA I <sub>RR</sub> = 1.0 Ma, R <sub>L</sub> = 100 ohms
V <sub>FM</sub>	Peak Forward Recovery Voltage		2.5	V	I <sub>F</sub> = 50 mA Pk Square Wave



**SOT-23**  
Diode (pinout)  
TO-236AB (LOW PROFILE)  
22-August-1994



**RECOMMENDED SOLDER PADS  
FOR  
SOT-23**



**RECOMMENDED SOLDER PADS  
FOR  
U.S. & European SOT-23  
&  
Japanese SC-59**

## TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	ISOPANAR™	SyncFET™
CoolFET™	MICROWIRE™	TinyLogic™
CROSSVOLT™	POP™	UHC™
E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
FACT Quiet Series™	QS™	
FAST®	Quiet Series™	
FASTr™	SuperSOT™-3	
GTO™	SuperSOT™-6	
HiSeC™	SuperSOT™-8	

## 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.

## 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, or (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 significant injury to the user.
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, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order 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 in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.