

## BZX79C 3V3 - 33 Series Half Watt Zeners

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Parameter                                         | Value       | Units |
|---------------------------------------------------|-------------|-------|
| Storage Temperature Range                         | -65 to +200 | °C    |
| Maximum Junction Operating Temperature            | + 200       | °C    |
| Lead Temperature (1/16" from case for 10 seconds) | + 230       | °C    |
| Total Device Dissipation                          | 500         | mW    |
| Derate above 25°C                                 | 4.0         | mW/°C |
| Surge Power**                                     | 30          | W     |

\*These ratings are limiting values above which the serviceability of the diode may be impaired.

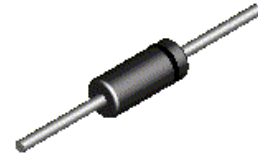
\*\*Non-recurrent square wave PW= 8.3 ms, TA= 50 degrees C.

#### NOTES:

1) These ratings are based on a maximum junction temperature of 200 degrees C.

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Tolerance: C = 5%



DO-35

### Electrical Characteristics

TA = 25°C unless otherwise noted

| Device     | V <sub>Z</sub> *<br>(V) |      | Z <sub>Z</sub><br>(Ω) | @ I <sub>ZT</sub><br>(mA) | Z <sub>ZK</sub><br>(Ω) | @ I <sub>ZT</sub><br>(mA) | V <sub>R</sub><br>(V) | @ I <sub>R</sub><br>(μA) | T <sub>C</sub><br>(mV/°C) |        |
|------------|-------------------------|------|-----------------------|---------------------------|------------------------|---------------------------|-----------------------|--------------------------|---------------------------|--------|
|            | MIN                     | MAX  |                       |                           |                        |                           |                       |                          | MIN                       | MAX    |
| BZX79C 3V3 | 3.1                     | 3.5  | 95                    | 5.0                       | 600                    | 1.0                       | 1.0                   | 25                       | - 3.5                     | 0.0    |
| BZX79C 3V6 | 3.4                     | 3.8  | 90                    | 5.0                       | 600                    | 1.0                       | 1.0                   | 15                       | - 3.5                     | 0.0    |
| BZX79C 3V9 | 3.7                     | 4.1  | 90                    | 5.0                       | 600                    | 1.0                       | 1.0                   | 10                       | - 3.5                     | + 0.3  |
| BZX79C 4V3 | 4.0                     | 4.6  | 90                    | 5.0                       | 600                    | 1.0                       | 1.0                   | 5.0                      | - 3.5                     | + 1.0  |
| BZX79C 4V7 | 4.4                     | 5.0  | 80                    | 5.0                       | 500                    | 1.0                       | 2.0                   | 3.0                      | - 3.5                     | + 0.2  |
| BZX79C 5V1 | 4.8                     | 5.4  | 60                    | 5.0                       | 480                    | 1.0                       | 2.0                   | 2.0                      | - 2.7                     | + 1.2  |
| BZX79C 5V6 | 5.2                     | 6.0  | 40                    | 5.0                       | 400                    | 1.0                       | 2.0                   | 1.0                      | - 2.0                     | + 2.5  |
| BZX79C 6V2 | 5.8                     | 6.6  | 10                    | 5.0                       | 150                    | 1.0                       | 4.0                   | 3.0                      | + 0.4                     | + 3.7  |
| BZX79C 6V8 | 6.4                     | 7.2  | 15                    | 5.0                       | 80                     | 1.0                       | 4.0                   | 2.0                      | + 1.2                     | + 4.5  |
| BZX79C 7V5 | 7.0                     | 7.9  | 15                    | 5.0                       | 80                     | 1.0                       | 5.0                   | 1.0                      | + 2.5                     | + 5.3  |
| BZX79C 8V2 | 7.7                     | 8.7  | 15                    | 5.0                       | 80                     | 1.0                       | 5.0                   | 0.7                      | + 3.2                     | + 6.2  |
| BZX79C 9V1 | 8.5                     | 9.6  | 15                    | 5.0                       | 100                    | 1.0                       | 6.0                   | 0.5                      | + 3.8                     | + 7.0  |
| BZX79C 10  | 9.4                     | 10.6 | 20                    | 5.0                       | 150                    | 1.0                       | 7.0                   | 0.2                      | + 4.5                     | + 8.0  |
| BZX79C 11  | 10.4                    | 11.6 | 20                    | 5.0                       | 150                    | 1.0                       | 8.0                   | 0.1                      | + 5.4                     | + 9.0  |
| BZX79C 12  | 11.4                    | 12.7 | 25                    | 5.0                       | 150                    | 1.0                       | 8.0                   | 0.1                      | + 6.0                     | + 10   |
| BZX79C 13  | 12.4                    | 14.1 | 30                    | 5.0                       | 170                    | 1.0                       | 8.0                   | 0.10                     | - 7.0                     | + 11   |
| BZX79C 15  | 13.8                    | 15.6 | 30                    | 5.0                       | 200                    | 1.0                       | 10.5                  | 0.05                     | - 9.2                     | + 13   |
| BZX79C 16  | 15.3                    | 17.1 | 40                    | 5.0                       | 200                    | 1.0                       | 11.2                  | 0.05                     | + 10.4                    | + 14   |
| BZX79C 18  | 16.8                    | 19.1 | 45                    | 5.0                       | 225                    | 1.0                       | 12.6                  | 0.05                     | + 12.4                    | + 16   |
| BZX79C 20  | 18.8                    | 21.2 | 55                    | 5.0                       | 225                    | 1.0                       | 14                    | 0.05                     | + 14.4                    | + 18   |
| BZX79C 22  | 20.8                    | 23.3 | 55                    | 5.0                       | 250                    | 1.0                       | 15.4                  | 0.05                     | + 16.4                    | + 20   |
| BZX79C 24  | 22.8                    | 25.6 | 70                    | 5.0                       | 250                    | 1.0                       | 16.8                  | 0.05                     | + 18.4                    | + 22   |
| BZX79C 27  | 25.1                    | 28.9 | 80                    | 2.0                       | 300                    | 0.5                       | 18.9                  | 0.05                     | + 21.4                    | + 25.3 |
| BZX79C 30  | 28                      | 32   | 80                    | 2.0                       | 300                    | 0.5                       | 21                    | 0.05                     | + 24.4                    | + 29.4 |
| BZX79C 33  | 31                      | 35   | 80                    | 2.0                       | 325                    | 0.5                       | 23.1                  | 0.05                     | + 27.4                    | + 33.4 |

V<sub>F</sub> Forward Voltage = 1.5 V Maximum @ I<sub>F</sub> = 100 mA for all BZX 79 series

\*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2.0%

## 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.

|                      |                         |      |
|----------------------|-------------------------|------|
| ACE <sup>x</sup> ™   | ISOP <sup>l</sup> ANAR™ | UHC™ |
| CoolFET™             | MICROWIRE™              | VCX™ |
| CROSSVOLT™           | POP™                    |      |
| E <sup>2</sup> CMOS™ | PowerTrench™            |      |
| FACT™                | QS™                     |      |
| FACT Quiet Series™   | Quiet Series™           |      |
| FAST <sup>®</sup>    | SuperSOT™-3             |      |
| FAST <sup>r</sup> ™  | SuperSOT™-6             |      |
| GTO™                 | SuperSOT™-8             |      |
| HiSeC™               | TinyLogic™              |      |

## 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.                                                   |