

# BZX55C2V4 - BZX55C91 Zeners

Tolerance = 5%



**DO-35 Glass case**  
COLOR BAND DENOTES CATHODE

## Absolute Maximum Ratings \* T<sub>a</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
P <sub>D</sub>	Power Dissipation @ TL ≤ 75°C, Lead Length = 3/8"	500	mW
	Derate above 75°C	4.0	mW/°C
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature Range	-65 to +200	°C

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

## Electrical Characteristics T<sub>a</sub> = 25°C unless otherwise noted

Device	V <sub>Z</sub> (V) @ I <sub>Z</sub> (Note 1)		Z <sub>Z</sub> @ I <sub>Z</sub> (Ω)	Test Current I <sub>Z</sub> (mA)	I <sub>R</sub> (μA) @ V <sub>R</sub>			I <sub>ZM</sub> (mA) (Note 2)
	Min.	Max.			T <sub>a</sub> = 25°C	T <sub>a</sub> = 125°C	V <sub>R</sub> (V)	
BZX55C2V4	2.28	2.56	85	5	50	100	1	155
BZX55C2V7	2.50	2.9	85	5	10	50	1	135
BZX55C3V0	2.8	3.2	85	5	4	40	1	125
BZX55C3V3	3.1	3.5	85	5	2	40	1	115
BZX55C3V6	3.4	3.8	85	5	2	40	1	105
BZX55C3V9	3.7	4.1	85	5	2	40	1	95
BZX55C4V3	4.0	4.6	75	5	1	40	1	90
BZX55C4V7	4.4	5.0	60	5	0.5	10	1	85
BZX55C5V1	4.8	5.4	35	5	0.1	2	1	80
BZX55C5V6	5.2	6.0	25	5	0.1	2	1	70
BZX55C6V2	5.8	6.6	10	5	0.1	2	2	64
BZX55C6V8	6.4	7.2	8	5	0.1	2	3	58
BZX55C7V5	7.0	7.9	7	5	0.1	2	5	53
BZX55C8V2	7.7	8.7	7	5	0.1	2	6	47
BZX55C9V1	8.5	9.6	10	5	0.1	2	7	43
BZX55C10	9.5	10.6	15	5	0.1	2	7.5	40
BZX55C11	10.4	11.6	20	5	0.1	2	8.5	36
BZX55C12	11.4	12.7	20	5	0.1	2	9	32
BZX55C13	12.4	14.1	26	5	0.1	2	10	29
BZX55C15	13.8	15.6	30	5	0.1	2	11	27
BZX55C16	15.3	17.1	40	5	0.1	2	12	24
BZX55C18	16.8	19.1	50	5	0.1	2	14	21
BZX55C20	18.8	21.1	55	5	0.1	2	15	20
BZX55C22	20.8	23.3	55	5	0.1	2	17	18
BZX55C24	22.8	25.6	80	5	0.1	2	18	16

**Electrical Characteristics** (Continued)  $T_a=25^\circ\text{C}$  unless otherwise noted

Device	$V_Z$ (V) @ $I_Z$ (Note 1)		$Z_Z$ @ $I_Z$ ( $\Omega$ )	Test Current $I_Z$ (mA)	$I_R$ ( $\mu\text{A}$ ) @ $V_R$			$I_{ZM}$ (mA) (Note 2)
	Min.	Max.			$T_a = 25^\circ\text{C}$	$T_a = 125^\circ\text{C}$	$V_R$ (V)	
BZX55C27	25.1	28.9	80	5	0.1	2	20	14
BZX55C30	28.0	32.0	80	5	0.1	2	22	13
BZX55C33	31.0	35.0	80	5	0.1	2	24	12
BZX55C36	34.0	38.0	80	5	0.1	2	27	11
BZX55C39	37.0	41.0	90	2.5	0.1	5	28	10
BZX55C43	40	46	90	2.5	0.1	5	32	9.2
BZX55C47	44	50	110	2.5	0.1	5	35	8.5
BZX55C51	48	54	125	2.5	0.1	10	38	7.8
BZX55C56	52	60	135	2.5	0.1	10	42	7.0
BZX55C62	58	66	150	2.5	0.1	10	47	6.4
BZX55C68	64	72	160	2.5	0.1	10	51	5.9
BZX55C75	70	80	170	2.5	0.1	10	56	5.3
BZX55C82	77	87	200	2.5	0.1	10	62	4.8
BZX55C91	85	96	250	1	0.1	10	69	4.3

**$V_F$  Forward Voltage = 1.3V Max. @  $I_F = 100\text{mA}$**

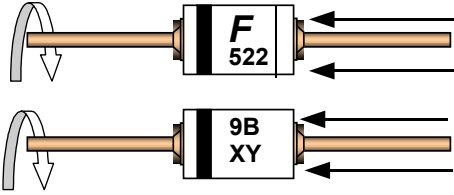
**Notes:**

- Zener Voltage ( $V_Z$ )**  
The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.
- Maximum Zener Current Ratings ( $I_{ZM}$ )**  
The maximum current handling capability on a worst case basis is limited by the actual zener voltage at the operation point and the power derating curve.

### Top Mark Information

Device	Line 1	Line 2	Line 3	Line 4
BZX55C2V4	LOGO	55C	2V4	XY
BZX55C2V7	LOGO	55C	2V7	XY
BZX55C3V0	LOGO	55C	3V0	XY
BZX55C3V3	LOGO	55C	3V3	XY
BZX55C3V6	LOGO	55C	3V6	XY
BZX55C3V9	LOGO	55C	3V9	XY
BZX55C4V3	LOGO	55C	4V3	XY
BZX55C4V7	LOGO	55C	4V7	XY
BZX55C5V1	LOGO	55C	5V1	XY
BZX55C5V6	LOGO	55C	5V6	XY
BZX55C6V2	LOGO	55C	6V2	XY
BZX55C6V8	LOGO	55C	6V8	XY
BZX55C7V5	LOGO	55C	7V5	XY
BZX55C8V2	LOGO	55C	8V2	XY
BZX55C9V1	LOGO	55C	9V1	XY
BZX55C10	LOGO	55C	10	XY
BZX55C11	LOGO	55C	11	XY
BZX55C12	LOGO	55C	12	XY
BZX55C13	LOGO	55C	13	XY
BZX55C15	LOGO	55C	15	XY
BZX55C16	LOGO	55C	16	XY
BZX55C18	LOGO	55C	18	XY
BZX55C20	LOGO	55C	20	XY
BZX55C22	LOGO	55C	22	XY
BZX55C24	LOGO	55C	24	XY
BZX55C27	LOGO	55C	27	XY
BZX55C30	LOGO	55C	30	XY
BZX55C33	LOGO	55C	33	XY
BZX55C36	LOGO	55C	36	XY
BZX55C39	LOGO	55C	39	XY
BZX55C43	LOGO	55C	43	XY
BZX55C47	LOGO	55C	47	XY
BZX55C51	LOGO	55C	51	XY
BZX55C56	LOGO	55C	56	XY
BZX55C62	LOGO	55C	62	XY
BZX55C68	LOGO	55C	68	XY
BZX55C75	LOGO	55C	75	XY
BZX55C82	LOGO	55C	82	XY
BZX55C91	LOGO	55C	91	XY

## Top Mark Information (Continued)



- 1<sup>st</sup> line: F - Fairchild Logo
- 2<sup>nd</sup> line: Device Name - 3<sup>rd</sup> to 5<sup>th</sup> characters of the device name.  
or 4<sup>th</sup> to 6<sup>th</sup> characters for BZXyy series
- 3<sup>rd</sup> line: Device Name - 6<sup>th</sup> to 7<sup>th</sup> characters of the device name.  
or Voltage rating for BZXyy series
- 4<sup>th</sup> line: Device Code or - Two Digit - Six Weeks Date Code.  
Date code plus or Two Digit - Six Weeks Date Code  
Large die identification plus Large die identification, "L"

### General Requirements:

- 1.0 Cathod Band
- 2.0 First Line: F - Fairchild Logo
- 3.0 Second Line: Device name - For 1Nxx series: 3<sup>rd</sup> to 5<sup>th</sup> characters of the device name.  
For BZxx series: 4<sup>th</sup> to 6<sup>th</sup> characters of the device name.
- 4.0 Third Line: Device name - For 1Nxx series: 6<sup>th</sup> to 7<sup>th</sup> characters of the device name.  
For BZXyy series: Voltage rating
- 5.0 Fourth Line: XY or XYL - Two Digit - Six Weeks Date Code  
Where: X represents the last digit of the calendar year  
Y represents the Six weeks numeric code  
L represents the Large die identification
- 6.0 Devices shall be marked as required in the device specification (PID or FSC Test Spec).
- 7.0 Maximum no. of marking lines: 4
- 8.0 Maximum no. of digits per line: 3
- 9.0 FSC logo must be 20 % taller than the alphanumeric marking and should occupy the 2 characters of the specified line.
- 10.0 Marking Font: Arial (Except FSC Logo)
- 11.0 First character of each marking line must be aligned vertically

**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™	FAST®	IntelliMAX™	POP™	SPM™
ActiveArray™	FASTr™	ISOPANAR™	Power247™	Stealth™
Bottomless™	FPS™	LittleFET™	PowerEdge™	SuperFET™
CoolFET™	FRFET™	MICROCOUPLER™	PowerSaver™	SuperSOT™-3
CROSSVOLT™	GlobalOptoisolator™	MicroFET™	PowerTrench®	SuperSOT™-6
DOVE™	GTO™	MicroPak™	QFET®	SuperSOT™-8
EcoSPARK™	HiSeC™	MICROWIRE™	QS™	SyncFET™
E <sup>2</sup> CMOS™	I <sup>2</sup> C™	MSX™	QT Optoelectronics™	TinyLogic®
EnSigna™	i-Lo™	MSXPro™	Quiet Series™	TINYOPTO™
FACT™	ImpliedDisconnect™	OCX™	RapidConfigure™	TruTranslation™
FACT Quiet Series™		OCXPro™	RapidConnect™	UHC™
Across the board. Around the world.™		OPTOLOGIC®	μSerDes™	UltraFET®
The Power Franchise®		OPTOPLANAR™	SILENT SWITCHER®	UniFET™
Programmable Active Droop™		PACMAN™	SMART START™	VCX™

**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.

Rev. I15