



Zeners

BZX84C 3V3 - BZX84C 33

Zeners (BZX84C 3V3 - BZX84C 33)

Absolute Maximum Ratings*

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

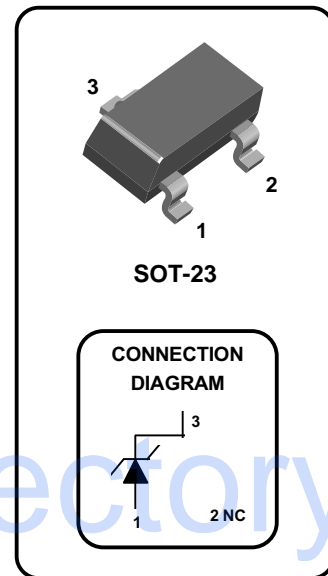
Symbol	Parameter	Value	Units
I_{FRM}	Repetitive Peak Forward Current (I_{FRM})	250	mA
I_{ZRM}	Repetitive Peak Working Current (I_{ZRM})	250	mA
P_D	Power Dissipation	350	mW
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	-55 to +150	$^\circ\text{C}$

*These ratings are limiting values above which the serviceability of the diode 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.

Tolerance: C = 5%



Datasheet.Directory

Electrical Characteristics

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

Device	Mark	$I_Z = 5.0 \text{ mA}$			$I_Z = 1.0 \text{ mA}$			$I_Z = 20 \text{ mA}$		
		$V_Z(\text{V})$		$Z_Z(\Omega)$	$V_Z(\text{V})$		$Z_Z(\Omega)$	$V_Z(\text{V})$		$Z_Z(\Omega)$
		MIN	MAX		MIN	MAX		MIN	MAX	
BZX84C 3V3	Z14	3.1	3.5	95	2.3	2.9	600	3.6	4.2	40
BZX84C 3V6	Z15	3.4	3.8	90	2.7	3.3	600	3.9	4.5	40
BZX84C 3V9	Z16	3.7	4.1	90	2.9	3.5	600	4.1	4.7	30
BZX84C 4V3	Z17	4.0	4.6	90	3.3	4.0	600	4.4	5.1	30
BZX84C 4V7	Z1	4.4	5.0	80	3.7	4.7	500	4.5	5.4	15
BZX84C 5V1	Z2	4.8	5.4	60	4.2	5.3	480	5.0	5.9	15
BZX84C 5V6	Z3	5.2	6.0	40	4.8	6.0	400	5.2	6.3	10
BZX84C 6V2	Z4	5.8	6.6	10	5.6	6.6	150	5.8	6.8	6
BZX84C 6V8	Z5	6.4	7.2	15	6.3	7.2	80	6.4	7.4	6
BZX84C 7V5	Z6	7.0	7.9	15	6.9	7.9	80	7.0	8.0	6
BZX84C 8V2	Z7	7.7	8.7	15	7.6	8.7	80	7.7	8.8	6
BZX84C 9V1	Z8	8.5	9.6	15	8.4	9.6	100	8.5	9.7	8
BZX84C 10	Z9	9.4	10.6	20	9.3	10.6	150	9.4	10.7	10
BZX84C 11	Y1	10.4	11.6	20	10.2	11.6	150	10.4	11.8	10
BZX84C 12	Y2	11.4	12.7	25	11.2	12.7	150	11.4	12.9	10
BZX84C 13	Y3	12.4	14.1	30	12.3	14.0	170	12.5	14.2	15
BZX84C 15	Y4	13.8	15.6	30	13.7	15.5	200	13.9	15.7	20
BZX84C 16	Y5	15.3	17.1	40	15.2	17	200	15.4	17.2	20
BZX84C 18	Y6	16.8	19.1	45	16.7	19	225	16.9	19.2	20
BZX84C 20	Y7	18.8	21.2	55	18.7	21.1	225	18.9	21.4	20
BZX84C 22	Y8	20.8	23.3	55	20.7	23.2	250	20.9	23.4	25
BZX84C 24	Y9	22.8	25.6	70	22.7	25.5	250	22.9	25.7	25

Zeners (BZX84C 3V3 - BZX84C 33)

(continued)

Electrical Characteristics (continued) TA = 25°C unless otherwise noted

Device	Mark	I _Z = 2.0 mA			I _Z = 100 μA			I _Z = 10 mA		
		V _Z (V)		Z _Z (Ω)	V _Z (V)		Z _Z (Ω)	V _Z (V)		Z _Z (Ω)
		MIN	MAX		MIN	MAX		MIN	MAX	
BZX84C 27	Y10	25.1	28.9	80	25	28.9	300	25.2	29.3	45
BZX84C 30	Y11	28	32	80	27.8	32	300	28.1	32.4	50
BZX84C 33	Y12	31	35	80	30.8	35	325	31.1	35.4	55

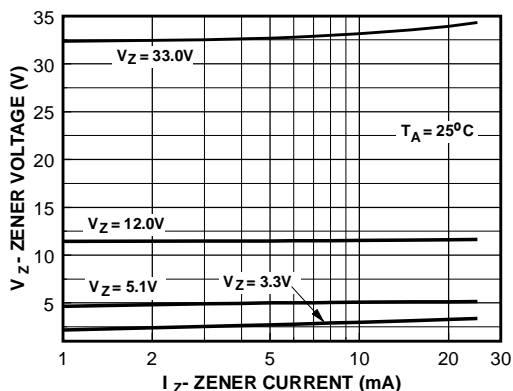
V_F Forward Voltage = 0.9 V Maximum @ I_F = 10 mA for all BZX 84 series

Device	V _R (V)	I _R (μA)	CAP* (pF)	D _{VZ} / D _t @ 5.0 mA(mV/k)	
				MIN	MAX
BZX84C 3V3	1.0	5.0	450	- 3.5	0.0
BZX84C 3V6	1.0	5.0	450	- 3.5	0.0
BZX84C 3V9	1.0	5.0	450	- 3.5	0.0
BZX84C 4V3	1.0	5.0	450	- 3.5	0.0
BZX84C 4V7	2.0	3	260	- 3.5	+ 0.2
BZX84C 5V1	2.0	2	225	- 2.7	+ 1.2
BZX84C 5V6	2.0	1	200	- 2.0	+ 2.5
BZX84C 6V2	4.0	3	185	+ 0.4	+ 3.7
BZX84C 6V8	4.0	2	155	+ 1.2	+ 4.5
BZX84C 7V5	5.0	1	140	+ 2.5	+ 5.3
BZX84C 8V2	5.0	0.7	135	+ 3.2	+ 6.2
BZX84C 9V1	6.0	0.5	130	+ 3.8	+ 7.0
BZX84C 10	7.0	0.2	130	+ 4.5	+ 8.0
BZX84C 11	8.0	0.1	130	+ 5.4	+ 9.0
BZX84C 12	8.0	0.1	130	+ 6.0	+ 10
BZX84C 13	8.0	0.1	120	+ 7.0	+ 11
BZX84C 15	10.5	0.05	110	+ 9.2	+ 13
BZX84C 16	11.2	0.05	105	+ 10.4	+ 14
BZX84C 18	12.6	0.05	100	+ 12.4	+ 16
BZX84C 20	14	0.05	85	+ 14.4	+ 18
BZX84C 22	15.4	0.05	85	+ 16.4	+ 20
BZX84C 24	16.8	0.05	80	+ 18.4	+ 22
BZX84C 27	18.9	0.05	70	+ 21.4	+ 25.3
BZX84C 30	21	0.05	70	+ 24.4	+ 29.4
BZX84C 33	23.1	0.05	70	+ 27.4	+ 33.4

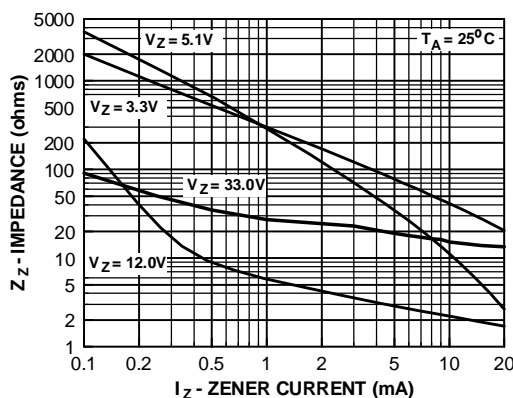
*Capacitance @ V_R = 0.0 volts; Frequency = 1.0 megahertz.

Zeners (BZX84C 3V3 - BZX84C 33)

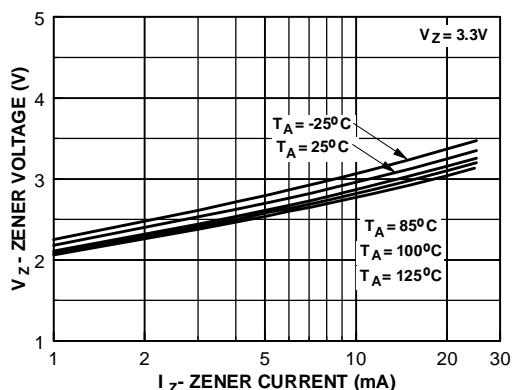
Typical Characteristics



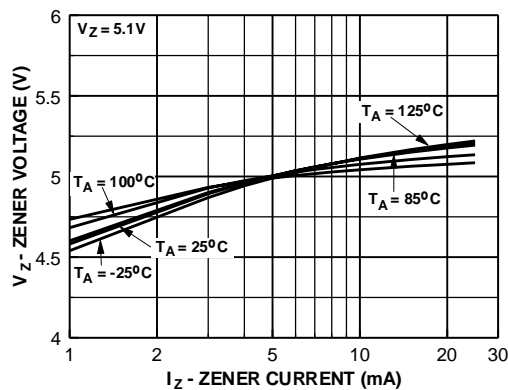
Zener Current vs. Zener Voltage



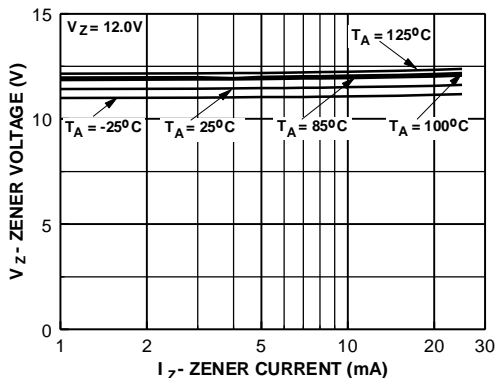
Zener Current vs. Zener Impedance



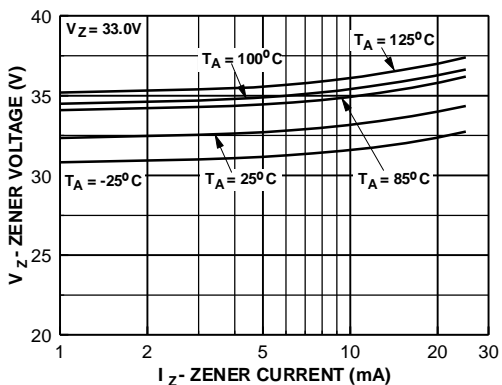
3.3 Zener Voltage vs. Temperature



5.1 Zener Voltage vs. Temperature



12 Zener Voltage vs. Zener Temperature



33 Zener Voltage vs. Zener Temperature

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 _x TM	FAST [®]	OPTOLOGIC TM	SMART START TM	VCX TM
Bottomless TM	FAST _r TM	OPTOPLANAR TM	STAR*POWER TM	
CoolFET TM	FRFET TM	PACMAN TM	Stealth TM	
CROSSVOLT TM	GlobalOptoisolator TM	POP TM	SuperSOT TM -3	
DenseTrench TM	GTO TM	Power247 TM	SuperSOT TM -6	
DOMET TM	HiSeC TM	PowerTrench [®]	SuperSOT TM -8	
EcoSPARK TM	ISOPLANAR TM	QFET TM	SyncFET TM	
E ² CMOS TM	LittleFET TM	QST TM	TinyLogic TM	
EnSigna TM	MicroFET TM	QT Optoelectronics TM	TruTranslation TM	
FACT TM	MicroPak TM	Quiet Series TM	UHC TM	
FACT Quiet Series TM	MICROWIRE TM	SILENT SWITCHER [®]	UltraFET [®]	

STAR*POWER is used under license

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.