

Zeners 1N5985B - 1N6025B

Absolute Maximum Ratings * $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Power Dissipation @ $T_L \leq 75^\circ\text{C}$, Lead Length = 3/8"	500	mW
	Derate above 75°C	4.0	mW/ $^\circ\text{C}$
T_J, T_{STG}	Operating and Storage Temperature Range	-65 to +200	$^\circ\text{C}$

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

Tolerance = 5%



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

Device	V_Z (V) @ I_Z (Note 1)			Test Current I_Z (mA)	Zener Impedance		leakage Current		I_{ZM} (mA) (Note 2)
	Min.	Typ.	Max.		Z_Z @ I_Z (Ω)	Z_{ZK} @ $I_{ZK} = 250\mu\text{A}$ (Ω)	I_R (mA)	V_R (V)	
1N5985B	2.58	2.4	2.52	5	100	1800	100	1	208
1N5986B	2.565	2.7	2.835	5	100	1900	75	1	185
1N5987B	2.85	3	3.15	5	95	2000	50	1	167
1N5988B	3.135	3.3	3.465	5	95	2200	25	1	152
1N5989B	3.42	3.6	3.78	5	90	2300	15	1	139
1N5990B	3.705	3.9	4.095	5	90	2400	10	1	128
1N5991B	4.085	4.3	4.515	5	88	2500	5	1	116
1N5992B	4.465	4.7	4.935	5	70	2200	3	1.5	106
1N5993B	4.845	5.1	5.355	5	50	2050	2	2	98
1N5994B	5.32	5.6	5.88	5	25	1800	2	3	89
1N5995B	5.89	6.2	6.51	5	10	1300	1	4	81
1N5996B	6.46	6.8	7.14	5	8	750	1	5.2	74
1N5997B	7.125	7.5	7.875	5	7	600	0.5	6	67
1N5998B	7.79	8.2	8.61	5	7	600	0.5	6.5	61
1N5999B	8.645	9.1	9.555	5	10	600	0.1	7	55
1N6000B	9.5	10	10.5	5	15	600	0.1	8	50
1N6001B	10.45	11	11.55	5	18	600	0.1	8.4	45
1N6002B	11.4	12	12.6	5	22	600	0.1	9.1	42
1N6003B	12.35	13	13.65	5	25	600	0.1	9.9	38
1N6004B	14.25	15	15.75	5	32	600	0.1	11	33
1N6005B	15.2	16	16.8	5	36	600	0.1	12	31
1N6006B	17.1	18	18.9	5	42	600	0.1	14	28
1N6007B	19	20	21	5	48	600	0.1	15	25
1N6008B	20.9	22	23.1	5	55	600	0.1	17	23
1N6009B	22.8	24	25.2	5	62	600	0.1	18	21
1N6010B	25.65	27	28.35	5	70	600	0.1	21	19
1N6011B	28.5	30	31.5	5	78	600	0.1	23	17
1N6012B	31.35	33	34.65	5	88	700	0.1	25	15
1N6013B	34.2	36	37.8	5	95	700	0.1	27	14
1N6014B	37.05	39	40.95	2	130	800	0.1	30	13

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

Device	V_Z (V) @ I_Z (Note 1)			Test Current I_Z (mA)	Zener Impedance		leakage Current		I_{ZM} (mA) (Note 2)
	Min.	Typ.	Max.		Z_Z @ I_Z (Ω)	Z_{ZK} @ $I_{ZK} = 250\mu\text{A}$ (Ω)	I_R (mA)	V_R (V)	
1N6015B	40.85	43	45.15	2	150	900	0.1	33	12
1N6016B	44.65	47	49.35	2	170	1000	0.1	36	11
1N6017B	48.45	51	53.55	2	180	1300	0.1	39	9.8
1N6018B	53.2	56	58.8	2	200	1400	0.1	43	8.9
1N6019B	58.9	62	65.1	2	225	1400	0.1	47	8
1N6020B	64.6	68	71.4	2	240	1600	0.1	52	7.4
1N6021B	71.25	75	78.75	2	265	1700	0.1	56	6.7
1N6022B	77.9	82	86.1	2	280	2000	0.1	62	6.1
1N6023B	86.45	91	95.55	2	300	2300	0.1	69	5.5
1N6024B	95	100	105	1	500	2600	0.1	76	5
1N6025B	104.5	110	115.5	1	650	3000	0.1	84	4.5

V_F Forward Voltage = 1.2V Max @ $I_F = 200\text{mA}$

Notes:

1. 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.

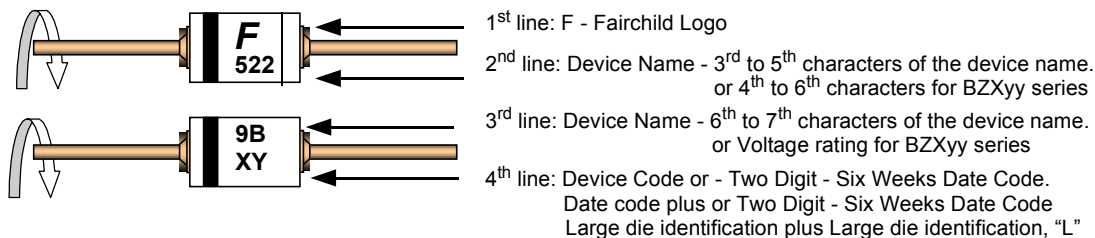
2. Maximum Zener Current Ratings (I_{ZM})

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
1N5985B	LOGO	598	5B	XY
1N5986B	LOGO	598	6B	XY
1N5987B	LOGO	598	7B	XY
1N5988B	LOGO	598	8B	XY
1N5989B	LOGO	598	9B	XY
1N5990B	LOGO	599	0B	XY
1N5991B	LOGO	599	1B	XY
1N5992B	LOGO	599	2B	XY
1N5993B	LOGO	599	3B	XY
1N5994B	LOGO	599	4B	XY
1N5995B	LOGO	599	5B	XY
1N5996B	LOGO	599	6B	XY
1N5997B	LOGO	599	7B	XY
1N5998B	LOGO	599	8B	XY
1N5999B	LOGO	599	9B	XY
1N6000B	LOGO	600	0B	XY
1N6001B	LOGO	600	1B	XY
1N6002B	LOGO	600	2B	XY
1N6003B	LOGO	600	3B	XY
1N6004B	LOGO	600	4B	XY
1N6005B	LOGO	600	5B	XY
1N6006B	LOGO	600	6B	XY
1N6007B	LOGO	600	7B	XY
1N6008B	LOGO	600	8B	XY
1N6009B	LOGO	600	9B	XY
1N6010B	LOGO	601	0B	XY
1N6011B	LOGO	601	1B	XY
1N6012B	LOGO	601	2B	XY
1N6013B	LOGO	601	3B	XY
1N6014B	LOGO	601	4B	XY
1N6015B	LOGO	601	5B	XY
1N6016B	LOGO	601	6B	XY
1N6017B	LOGO	601	7B	XY
1N6018B	LOGO	601	8B	XY
1N6019B	LOGO	601	9B	XY
1N6020B	LOGO	602	0B	XY
1N6021B	LOGO	602	1B	XY
1N6022B	LOGO	602	2B	XY
1N6023B	LOGO	602	3B	XY
1N6024B	LOGO	602	4B	XY
1N6025B	LOGO	602	5B	XY

Top Mark Information (Continued)



General Requirements:

- 1.0 Cathod Band
- 2.0 First Line: F - Fairchild Logo
- 3.0 Second Line: Device name - For 1Nxx series: 3rd to 5th characters of the device name.
For BZxx series: 4th to 6th characters of the device name.
- 4.0 Third Line: Device name - For 1Nxx series: 6th to 7th 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™	FACT Quiet Series™	ISOPLANAR™	POP™	Stealth™
ActiveArray™	FAST®	LittleFET™	Power247™	SuperFET™
Bottomless™	FASTr™	MICROCOUPLER™	PowerSaver™	SuperSOT™-3
CoolFET™	FPS™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET®	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic®
E ² CMOS™	HiSeC™	MSXPro™	Quiet Series™	TINYOPTO™
EnSigna™	I ² C™	OCX™	RapidConfigure™	TruTranslation™
FACT™	ImpliedDisconnect™	OCXPro™	RapidConnect™	UHC™
Across the board. Around the world.™		OPTOLOGIC®	SILENT SWITCHER®	UltraFET®
The Power Franchise™		OPTOPLANAR™	SMART START™	VCX™
Programmable Active Droop™		PACMAN™	SPM™	

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.