FAIRCHILD SEMICONDUCTOR®

Zeners
1N957B - 1N991B

Absolute Maximum Ratings *

T_A = 25°C unless otherwise noted

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

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

Tolerance = 5%

DO-35 Glass case

COLOR BAND DENOTES CATHODE

Electrical Characteristics

T_A=25°C unless otherwise noted

Device	V_Z (Volts) (Note 1)				Z_Z (Ω) (Note 2)			I_R @ V_R		I_{ZM} (mA) (Note 3)
	Min.	Typ.	Max.	@ I_Z (mA)	Z_Z @ I_Z	Z_{ZK} @ I_{ZK} Ω	Z_{ZK} @ I_{ZK} mA	μA	Volts	
1N957B	6.46	6.8	7.14	18.5	4.5	700	1.0	150	5.2	47
1N958B	7.125	7.5	7.875	16.5	5.5	700	0.5	75	5.7	42
1N959B	7.79	8.2	8.61	15	6.5	700	0.5	50	6.2	38
1N960B	8.645	9.1	9.555	14	7.5	700	0.5	25	6.9	35
1N961B	9.5	10	10.5	12.5	8.5	700	0.25	10	7.6	32
1N962B	10.45	11	11.55	11.5	9.5	700	0.25	5	8.4	28
1N963B	11.4	12	12.6	10.5	11.5	700	0.25	5	9.1	26
1N964B	12.35	13	13.65	9.5	13	700	0.25	5	9.9	24
1N965B	14.25	15	15.75	8.5	16	700	0.25	5	11.4	21
1N966B	15.2	16	16.8	7.8	17	700	0.25	5	12.2	19
1N967B	17.1	18	18.9	7.0	21	750	0.25	5	13.7	17
1N968B	19	20	21	6.2	25	750	0.25	5	15.2	15
1N969B	20.9	22	23.1	5.6	29	750	0.25	5	16.7	14
1N970B	22.8	24	25.2	5.2	33	750	0.25	5	18.2	13
1N971B	25.652	27	28.35	4.6	41	750	0.25	5	20.6	11
1N972B	8.5	30	31.5	4.2	49	1000	0.25	5	22.8	10
1N973B	31.35	33	34.65	3.8	58	1000	0.25	5	25.1	9.2
1N974B	34.2	36	37.8	3.4	70	1000	0.25	5	27.4	8.5
1N975B	37.05	39	40.95	3.2	80	1000	0.25	5	29.7	7.8
1N976B	40.85	43	45.15	3.0	93	1500	0.25	5	32.7	7.0
1N977B	44.65	47	49.35	2.7	105	1500	0.25	5	35.8	6.4
1N978B	48.45	51	53.55	2.5	125	1500	0.25	5	38.8	5.9
1N979B	53.2	56	58.8	2.2	150	2000	0.25	5	42.6	5.4
1N980B	58.9	62	65.1	2.0	185	2000	0.25	5	47.1	4.9
1N981B	64.6	68	71.4	1.8	230	2000	0.25	5	51.7	4.5

Electrical Characteristics (Continued) T_A=25°C unless otherwise noted

Device	V_Z (Volts) (Note 1)				Z_Z (Ω) (Note 2)			I_R @ V_R		I_{ZM} (mA) (Note 3)
	Min.	Typ.	Max.	@ I_Z	Z_Z @ I_Z	Z_{ZK} @ I_{ZK}		μA	Volts	
						Ω	mA			
1N982B	71.25	75	78.75	1.7	270	2000	0.25	5	56.0	4.1
1N983B	77.9	82	86.1	1.5	330	3000	0.25	5	62.2	3.7
1N984B	86.45	91	95.55	1.4	400	3000	0.25	5	69.2	3.3
1N985B	95	100	105	1.3	500	3000	0.25	5	76.0	3.0
1N986B	104.5	110	115.5	1.1	750	4000	0.25	5	83.6	2.7
1N987B	114	120	126	1.0	900	4500	0.25	5	91.2	2.5
1N988B	123.5	130	136.5	0.95	1100	5000	0.25	5	98.8	2.3
1N989B	142.5	150	157.5	0.85	1500	6000	0.25	5	114	2.0
1N990B	152	160	168	0.80	1700	6500	0.25	5	121.6	1.9
1N991B	171	180	189	0.68	2200	7100	0.25	5	136.8	1.7

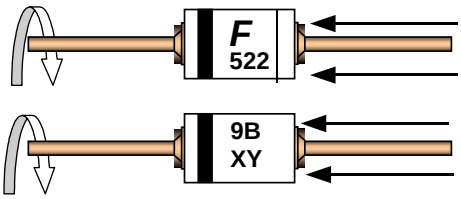
Notes:

1. Zener Voltage (V_Z) Measurement
   Nominal zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (T_L) at 30°C ± 1°C and 3/8" lead length.
2. Zener Impedance (Z_Z) Derivation
   Z_{ZT} and Z_{ZK} are measured by dividing the ac voltage drop across the device by the ac current applied. The specified limits are for $I_{Z(ac)}$ = 0.1 $I_{Z(dc)}$ with the ac frequency = 60Hz.
3. 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
1N957B	LOGO	957	B	XY
1N958B	LOGO	958	B	XY
1N959B	LOGO	959	B	XY
1N960B	LOGO	960	B	XY
1N961B	LOGO	961	B	XY
1N962B	LOGO	962	B	XY
1N963B	LOGO	963	B	XY
1N964B	LOGO	964	B	XY
1N965B	LOGO	965	B	XY
1N966B	LOGO	966	B	XY
1N967B	LOGO	967	B	XY
1N968B	LOGO	968	B	XY
1N969B	LOGO	969	B	XY
1N970B	LOGO	970	B	XY
1N971B	LOGO	971	B	XY
1N972B	LOGO	972	B	XY
1N973B	LOGO	973	B	XY
1N974B	LOGO	974	B	XY
1N975B	LOGO	975	B	XY
1N976B	LOGO	976	B	XY
1N977B	LOGO	977	B	XY
1N978B	LOGO	978	B	XY
1N979B	LOGO	979	B	XY
1N980B	LOGO	980	B	XY
1N981B	LOGO	981	B	XY
1N982B	LOGO	982	B	XY
1N983B	LOGO	983	B	XY
1N984B	LOGO	984	B	XY
1N985B	LOGO	985	B	XY
1N986B	LOGO	986	B	XY
1N987B	LOGO	987	B	XY
1N988B	LOGO	988	B	XY
1N989B	LOGO	989	B	XY
1N990B	LOGO	990	B	XY
1N991B	LOGO	991	B	XY

Top Mark Information (Continued)



1st line: F - Fairchild Logo

2nd line: Device Name - 3rd to 5th characters of the device name.
or 4th to 6th characters for BZXyy series

3rd line: Device Name - 6th to 7th characters of the device name.
or Voltage rating for BZXyy series

4th 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: 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

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CROSSVOLT™	FRFET™	MicroFET™	PowerTrench®	SuperSOT™-6
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EnSigna™	I^2C™	MSXPro™	Quiet Series™	TINYOPTO™
FACT™	*i-Lo*™	OCX™	RapidConfigure™	TruTranslation™
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The Power Franchise®		OPTOLOGIC®	SILENT SWITCHER®	UltraFET®
Programmable Active Droop™		OPTOPLANAR™	SMART START™	VCX™

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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.

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Definition of Terms

Datasheet Identification	Product Status	Definition
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