

1N957B - 1N979B

Zener Diodes

Tolerance = 5%



DO-35 Glass case
COLOR BAND DENOTES CATHODE

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.

Electrical Characteristics

$T_A = 25^\circ\text{C}$ 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}		μA	Volts	
						Ω	mA			
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

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 $30^\circ\text{C} \pm 1^\circ\text{C}$ 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.

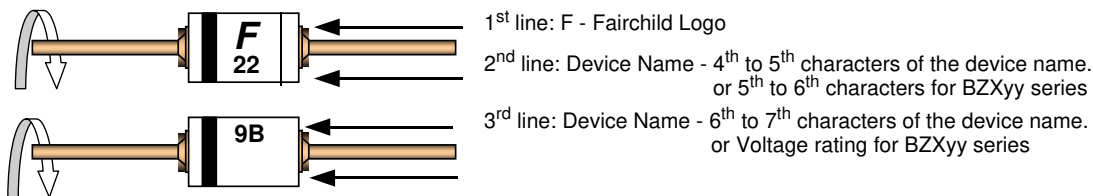
3. Maximum Zener Current Ratings (I_{ZM})

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
1N957B	LOGO	57	B
1N958B	LOGO	58	B
1N959B	LOGO	59	B
1N960B	LOGO	60	B
1N961B	LOGO	61	B
1N962B	LOGO	62	B
1N963B	LOGO	63	B
1N964B	LOGO	64	B
1N965B	LOGO	65	B
1N966B	LOGO	66	B
1N967B	LOGO	67	B
1N968B	LOGO	68	B
1N969B	LOGO	69	B
1N970B	LOGO	70	B
1N971B	LOGO	71	B
1N972B	LOGO	72	B
1N973B	LOGO	73	B
1N974B	LOGO	74	B
1N975B	LOGO	75	B
1N976B	LOGO	76	B
1N977B	LOGO	77	B
1N978B	LOGO	78	B
1N979B	LOGO	79	B

Top Mark Information (Continued)



General Requirements:

- 1.0 Cathode Band
- 2.0 First Line: F - Fairchild Logo
- 3.0 Second Line: Device name - For 1Nxx series: 4th to 5th characters of the device name.
For BZXxx series: 5th 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 Devices shall be marked as required in the device specification (PID or FSC Test Spec).
- 6.0 Maximum no. of marking lines: 3
- 7.0 Maximum no. of digits per line: 2
- 8.0 FSC logo must be 20 % taller than the alphanumeric marking and should occupy the 2 characters of the specified line.
- 9.0 Marking Font: Arial (Except FSC Logo)
- 10.0 First character of each marking line must be aligned vertically.
- 11.0 All device markings must be based on Fairchild device specification.



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 [™]	GTO [™]	PowerSaver [™]	TinyBuck [™]
Across the board. Around the world. [™]	HiSeC [™]	PowerTrench [®]	TinyLogic [®]
ActiveArray [™]	i-Lo [™]	Programmable Active Droop [™]	TINYOPTO [™]
Bottomless [™]	ImpliedDisconnect [™]	QFET [®]	TinyPower [™]
Build it Now [™]	IntelliMAX [™]	QS [™]	TinyWire [™]
CoolFET [™]	ISOPLANAR [™]	QT Optoelectronics [™]	TruTranslation [™]
CROSSVOLT [™]	MICROCOUPLER [™]	Quiet Series [™]	μSerDes [™]
CTL [™]	MicroPak [™]	RapidConfigure [™]	UHC [®]
Current Transfer Logic [™]	MICROWIRE [™]	RapidConnect [™]	UniFET [™]
DOME [™]	MSX [™]	ScalarPump [™]	VCX [™]
E ² CMOS [™]	MSXPro [™]	SMART START [™]	Wire [™]
EcoSPARK [®]	OCX [™]	SPM [™]	
EnSigna [™]	OCXPro [™]	SuperFET [™]	
FACT Quiet Series [™]	OPTOLOGIC [®]	SuperSOT [™] -3	
FACT [®]	OPTOPLANAR [™]	SuperSOT [™] -6	
FAST [®]	PACMAN [™]	SuperSOT [™] -8	
FASTr [™]	POP [™]	TCM [™]	
FPS [™]	Power220 [®]	The Power Franchise [®]	
FRFET [™]	Power247 [®]	TinyBoost [™]	
GlobalOptoisolator [™]	PowerEdge [™]		

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. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

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. I23