FAIRCHILD SEMICONDUCTOR®

March 2010

1N5985B - 1N6025B
Zener Diodes

Tolerance = 5%



DO-35 Glass case
COLOR BAND DENOTES CATHODE

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.

Electrical Characteristics T_A=25°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} = 250μA (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

© 2010 Fairchild Semiconductor Corporation

Electrical Characteristics (Continued) T_A=25°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} = 250μA (Ω)	I_R (mA)	V_R (V)	
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
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 = 200mA									

Notes:

1. Zener Voltage (V_Z)
   The zener voltage is measured with the device junction in the themal equilibrium at the lead temperature (T_L) at 30°C ± 1°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.

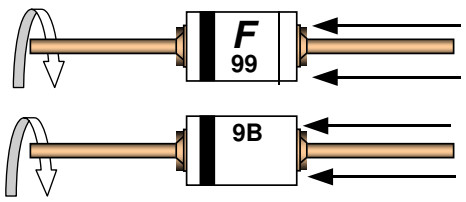
© 2010 Fairchild Semiconductor Corporation

Top Mark Information

Device	Line 1	Line 2	Line 3
1N5985B	LOGO	98	5B
1N5986B	LOGO	98	6B
1N5987B	LOGO	98	7B
1N5988B	LOGO	98	8B
1N5989B	LOGO	98	9B
1N5990B	LOGO	99	0B
1N5991B	LOGO	99	1B
1N5992B	LOGO	99	2B
1N5993B	LOGO	99	3B
1N5994B	LOGO	99	4B
1N5995B	LOGO	99	5B
1N5996B	LOGO	99	6B
1N5997B	LOGO	99	7B
1N5998B	LOGO	99	8B
1N5999B	LOGO	99	9B
1N6000B	LOGO	00	0B
1N6001B	LOGO	00	1B
1N6002B	LOGO	00	2B
1N6003B	LOGO	00	3B
1N6004B	LOGO	00	4B
1N6005B	LOGO	00	5B
1N6006B	LOGO	00	6B
1N6007B	LOGO	00	7B
1N6008B	LOGO	00	8B
1N6009B	LOGO	00	9B
1N6010B	LOGO	01	0B
1N6011B	LOGO	01	1B
1N6012B	LOGO	01	2B
1N6013B	LOGO	01	3B
1N6014B	LOGO	01	4B
1N6015B	LOGO	01	5B
1N6016B	LOGO	01	6B
1N6017B	LOGO	01	7B
1N6018B	LOGO	01	8B
1N6019B	LOGO	01	9B
1N6020B	LOGO	02	0B
1N6021B	LOGO	02	1B
1N6022B	LOGO	02	2B
1N6023B	LOGO	02	3B
1N6024B	LOGO	02	4B
1N6025B	LOGO	02	5B

© 2010 Fairchild Semiconductor Corporation

Top Mark Information (Continued)



1st line: F - Fairchild Logo

2nd line: Device Name
- For 1Nxx series: 4th to 5th characters of the device name.
- For BZXyy series: 5th to 6th characters of the device name.

3rd line: Device Name
- For 1Nxx series: 6th to 7th characters of the device name.
- For BZXyy series: Voltage Rating

General Requirements:

1.0 Cathod 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 BZXyy 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

© 2010 Fairchild Semiconductor Corporation

FAIRCHILD
SEMICONDUCTOR®

TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

AccuPower™
Auto-SPM™
Build it Now™
CorePLUS™
CorePOWER™
CROSSVOLT™
CTL™
Current Transfer Logic™
DEUXPEED®
Dual Cool™
EcoSPARK®
EfficientMax™
ƒ®
Fairchild®
Fairchild Semiconductor®
FACT Quiet Series™
FACT®
FAST®
FastvCore™
FETBench™
FlashWriter®*
FPS™
F-PFS™
FRFET®
Global Power Resource℠
Green FPS™
Green FPS™ e-Series™
G*max*™
GTO™
IntelliMAX™
ISOPLANAR™
MegaBuck™
MICROCOUPLER™
MicroFET™
MicroPak™
MicroPak2™
MillerDrive™
MotionMax™
Motion-SPM™
OptoHiT™
OPTOLOGIC®
OPTOPLANAR®
®
PDP SPM™
Power-SPM™
PowerTrench®
PowerXS™
Programmable Active Droop™
QFET®
QS™
Quiet Series™
RapidConfigure™
™
Saving our world, 1mW/W/kW at a time™
SignalWise™
SmartMax™
SMART START™
SPM®
STEALTH™
SuperFET™
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
SupreMOS™
SyncFET™
Sync-Lock™
SYSTEM GENERAL ®*
The Power Franchise®
the power franchise
TinyBoost™
TinyBuck™
TinyCalc™
TinyLogic®
TINYOPTO™
TinyPower™
TinyPWM™
TinyWire™
TriFault Detect™
TRUECURRENT™*
µSerDes™
µ SerDes
UHC®
Ultra FRFET™
UniFET™
VCX™
VisualMax™
XS™

* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

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, and (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 a significant injury of the user.
2. A critical component in 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.

ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I47

© Fairchild Semiconductor Corporation