

Microsemi Corp.
The diode experts

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SCOTTSDALE, AZ

**1N962B
thru
1N973B
DO-35**



**SILICON
400 mW
ZENER DIODES**

FEATURES

- 6.8 TO 200 V ZENER VOLTAGE RANGE
- AVAILABLE IN JAN, JANTX AND JANTXV AND JANS QUALIFICATIONS TO MIL-S-19500/117
- METALLURGICALLY BONDED VOIDLESS DEVICE TYPES
- CONSULT FACTORY FOR VOLTAGES ABOVE 200 V

MAXIMUM RATINGS

Steady State Power Dissipation: 400 mW
Operating and Storage Temperature: -65°C to +175°C
Derating Factor Above 75°C: 4.0 mW/°C
Forward Voltage @ 200 mA: 1.5 Volts

ELECTRICAL CHARACTERISTICS @ 25°C

JEDEC TYPE NUMBER (Note 1)	NOMINAL ZENER VOLTAGE (Note 2) Vz	ZENER TEST CURRENT Iz1	MAX. ZENER IMPEDANCE (Note 3)			MAX. DC ZENER CURRENT (Note 4) Iz2	MAX. SURGE CURRENT (RECURRENT) (Note 5) Iz (SURGE)	MAX. REVERSE LEAKAGE CURRENT		MAX. TEMP. COEFFICIENT (Note 6)
			Zz1 @ Iz1	Zz2 @ Iz2	Zz3 @ Iz3			Ia	Va	
	VOLTS	mA	OHMS	OHMS	mA	mA	μA	VOLTS	%/°C	
1N962B	11	11.5	9.5	700	.25	32	175	5	8.4	+0.076
1N963B	12	10.5	11.5	700	.25	31	160	5	9.1	+0.077
1N964B	13	9.5	13.0	700	.25	28	150	5	9.9	+0.079
1N965B	15	8.5	16	700	.25	25	130	5	11.4	+0.082
1N966B	16	7.8	17	700	.25	24	120	5	12.2	+0.083
1N967B	18	7.0	21	750	.25	20	110	5	13.7	+0.085
1N968B	20	6.2	25	750	.25	18	100	5	15.2	+0.086
1N969B	22	5.6	29	750	.25	16	90	5	16.7	+0.087
1N970B	24	5.2	33	750	.25	15	80	5	18.2	+0.088
1N971B	27	4.6	41	750	.25	13	70	5	20.6	+0.090
1N972B	30	4.2	49	1000	.25	12	65	5	22.8	+0.091
1N973B	33	3.8	58	1000	.25	11	60	5	25.1	+0.092

*JEDEC Registered Data

1

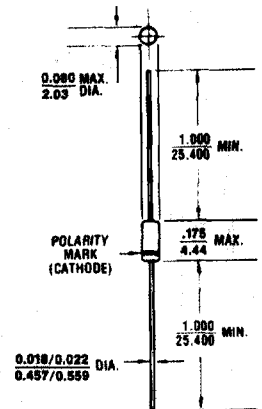


FIGURE 1

All dimensions in INCH m.m.

MECHANICAL CHARACTERISTICS

CASE: Hermetically sealed glass case. DO-35.

FINISH: All external surfaces are corrosion resistant and leads solderable.

THERMAL RESISTANCE: 200°C/W (Typical) junction to lead at 0.375-inches from body. Metallurgically bonded DO-35's exhibit less than 100°C/W at zero distance from body.

POLARITY: Diode to be operated with the banded end positive with respect to the opposite end.

WEIGHT: 0.2 grams.

MOUNTING POSITION: Any.

1N962B thru 1N973B DO-35

NOTE 1 The JEDEC type numbers shown (B suffix) have a $\pm 5\%$ tolerance on nominal zener voltage. The suffix A is used to identify $\pm 10\%$ tolerance; suffix C is used to identify $\pm 2\%$; and suffix D is used to identify $\pm 1\%$ tolerance; no suffix indicates $\pm 20\%$ tolerance.

NOTE 2 Zener voltage (V_Z) is measured after the test current has been applied for 20 ± 5 seconds. The device shall be suspended by its leads with the inside edge of the mounting clips between .375" and .500" from the body. Mounting clips shall be maintained at a temperature of $25 +8/-2^\circ\text{C}$.

NOTE 3 The zener impedance is derived from the 60 cycle A.C. voltage, which results when an A.C. current

having an R.M.S. value equal to 10% of the D.C. zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at 2 points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

NOTE 4 The values of I_{ZM} are calculated for a $\pm 5\%$ tolerance on nominal zener voltage. Allowance has been made for the rise in zener voltage above V_{ZT} which results from zener impedance and the increase in junction temperature as power dissipation approaches 400 mW. In the case of individual diodes I_{ZM} is that value of current which results in a dissipation of 400 mW at 50°C lead temperature at $3/8"$ from body.

NOTE 5 Surge is 1/2 square wave or equivalent sine wave pulse of 1/120 sec. duration.

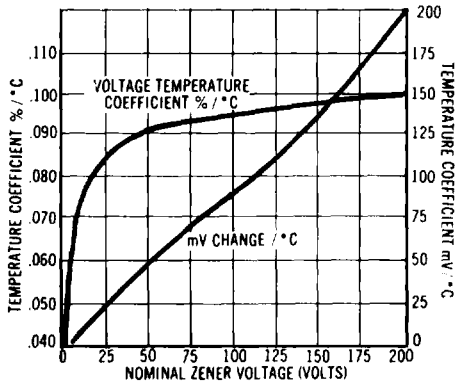


FIGURE 2
ZENER VOLTAGE TEMPERATURE
COEFF. vs. ZENER VOLTAGE

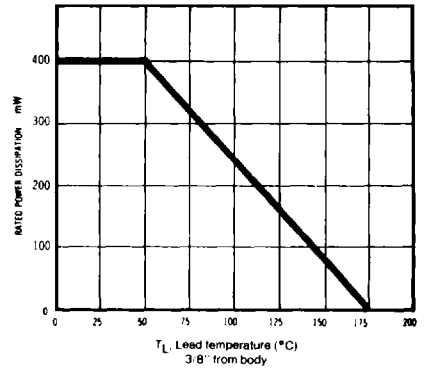


FIGURE 3
POWER DERATING CURVE

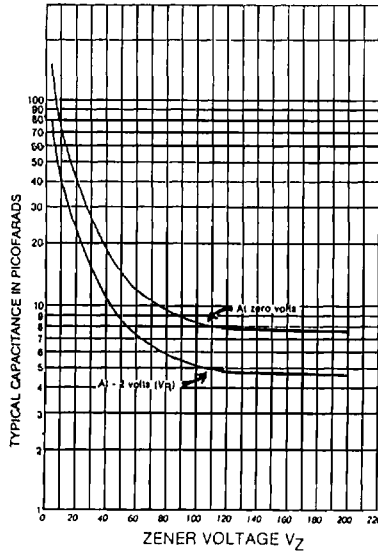


FIGURE 4
CAPACITANCE VS. ZENER VOLTAGE
(TYPICAL)