

1/4M2.4AZ thru 1/4M200Z (SILICON)

1/4 W
2.4 – 200 V

CASE 51
(DO-7)



Hermetically sealed, all-glass case with all external surfaces corrosion resistant. Cathode end, indicated by color band, will be positive with respect to anode end when operated in the zener region. These devices are in the same 400 mW glass package as the 1N746 and 1N957 Series, but designated 1/4 Watt to allow characterization at a different test current level.

MAXIMUM RATINGS

Junction and Storage Temperature: -65°C to +175°C

D C Power Dissipation: 1/4 Watt (Derate 1.67 mW/°C Above 25°C)

The type numbers specified have a standard voltage (V_Z) tolerance of $\pm 20\%$. For closer tolerances, add suffix "10" for $\pm 10\%$ or "5" for $\pm 5\%$. (3%, 2%, 1% tolerances also available.)

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_f = 1.5\text{ V max @ } 100\text{ mA}$)

TYPE NO.	NOMINAL ZENER VOLTAGE @ I_{ZT} (V_Z) VOLTS	TEST CURRENT (I_{ZT}) mA	MAXIMUM ZENER IMPEDANCE (Z_{ZT}) @ I_{ZT} ohms	MAXIMUM DC ZENER CURRENT (I_{ZM}) mA	REVERSE LEAKAGE CURRENT		
					I_s MAX (μA)	TEST VOLTAGE V_{dc}^*	
						V_{R1}	V_{R2}
1/4M2.4AZ	2.4	10	60	70	75	1	1
1/4M2.7AZ	2.7	10	60	65	75	1	1
1/4M3.0AZ	3.0	10	55	60	50	1	1
1/4M3.3AZ	3.3	10	55	55	50	1	1
1/4M3.6AZ	3.6	10	50	52	50	1	1
1/4M3.9AZ	3.9	10	50	49	25	1	1
1/4M4.3AZ	4.3	10	45	46	25	1.5	1.5
1/4M4.7AZ	4.7	10	35	42	10	1.5	1.5
1/4M5.1AZ	5.1	10	25	39	5	1.5	1.5
1/4M5.6AZ	5.6	10	20	36	5	1.5	1.5
1/4M6.2AZ	6.2	10	15	33	5	3.5	3.5
1/4M6.8Z	6.8	9.2	7.0	33	150	5.2	4.9
1/4M7.5Z	7.5	8.3	8.0	30	75	5.7	5.4
1/4M8.2Z	8.2	7.6	9.0	26	50	6.2	5.9
1/4M9.1Z	9.1	6.9	10	24	25	6.9	6.6
1/4M10Z	10	6.3	11	21	10	7.6	7.2
1/4M11Z	11	5.7	13	19	5	8.4	8.0
1/4M12Z	12	5.2	15	18	5	9.1	8.6
1/4M13Z	13	4.8	18	16	5	9.9	9.4
1/4M14Z	14	4.5	20	15	5	10.6	10.1
1/4M15Z	15	4.2	22	14	5	11.4	10.8
1/4M16Z	16	3.9	24	13	5	12.2	11.5
1/4M17Z	17	3.7	26	12.5	5	13.0	12.2
1/4M18Z	18	3.5	28	11.5	5	13.7	13.0
1/4M19Z	19	3.3	30	11.0	5	14.4	13.7
1/4M20Z	20	3.1	33	10.5	5	15.2	14.4
1/4M22Z	22	2.8	40	9.5	5	16.7	15.8
1/4M24Z	24	2.6	46	9.0	5	18.2	17.3
1/4M25Z	25	2.5	50	8.0	5	19.0	18.0
1/4M27Z	27	2.3	58	7.5	5	20.6	19.4
1/4M30Z	30	2.1	70	7.0	5	22.8	21.6

* V_{R1} - Test Voltage for 5% Tolerance Device V_{R2} - Test voltage for 10% Tolerance Device

No Leakage Specified as 20% Tolerance Device

1/4M2.4AZ thru 1/4M200Z (continued)

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_F = 1.5\text{ V max @ 100 mA}$) (continued)

TYPE NO.	NOMINAL ZENER VOLTAGE @ I_{ZT} (V_Z) VOLTS	TEST CURRENT (I_{ZT}) mA	MAXIMUM ZENER IMPEDANCE (Z_{ZT}) @ I_{ZT} ohms	MAXIMUM DC ZENER CURRENT (I_{ZM}) mA	REVERSE LEAKAGE CURRENT		
					I_R MAX (μA)	TEST VOLTAGE V_{dc} *	
						V_{R1}	V_{R2}
1/4M33Z	33	1.9	85	6.5	5	25.1	23.8
1/4M36Z	36	1.7	100	6.0	5	27.4	25.9
1/4M39Z	39	1.6	120	5.0	5	29.7	28.1
1/4M43Z	43	1.5	140	4.8	5	32.7	31.0
1/4M45Z	45	1.4	150	4.5	5	34.2	32.4
1/4M47Z	47	1.3	160	4.3	5	35.8	33.8
1/4M50Z	50	1.2	180	4.1	5	38.0	36.0
1/4M52Z	52	1.2	200	4.0	5	39.5	37.4
1/4M56Z	56	1.1	230	3.8	5	42.6	40.3
1/4M62Z	62	1.0	290	3.3	5	47.1	44.6
1/4M68Z	68	0.92	350	3.0	5	51.7	49.0
1/4M75Z	75	0.83	450	2.8	5	56.0	54.0
1/4M82Z	82	0.76	550	2.5	5	62.2	59.0
1/4M91Z	91	0.69	700	2.3	5	69.2	65.5
1/4M100Z	100	0.63	900	2.0	5	76.0	72.0
1/4M105Z	105	0.60	1000	1.9	5	79.8	75.6
1/4M110Z	110	0.57	1200	1.8	5	83.6	79.2
1/4M120Z	120	0.52	1500	1.7	5	91.2	86.4
1/4M130Z	130	0.48	1900	1.5	5	98.8	93.6
1/4M140Z	140	0.45	2200	1.4	5	106.4	100.8
1/4M150Z	150	0.42	2500	1.3	5	114.0	108.0
1/4M175Z	175	0.36	3300	1.1	5	133.0	126.0
1/4M200Z	200	0.31	4300	1.0	5	152.0	144.0

* V_{R1} — Test Voltage for 5% Tolerance Device V_{R2} — Test Voltage for 10% Tolerance Device
 No Leakage Specified as 20% Tolerance Device

SPECIAL SELECTIONS AVAILABLE INCLUDE: (See Selector Guide for details)

- 1 — Nominal zener voltages between those shown.
- 2 — Matched sets: (Standard Tolerances are $\pm 5.0\%$, $\pm 3.0\%$, $\pm 2.0\%$, $\pm 1.0\%$) depending on voltage per device.
 - a. Two or more units for series connection with specified tolerance on total voltage. Series matched sets make possible higher zener voltages and provide lower temperature coefficients, lower dynamic impedance and greater power handling ability.
 - b. Two or more units matched to one another with any specified tolerance.
- 3 — Tight voltage tolerances: 1.0%, 2.0%, 3.0%.