



INTERNATIONAL SEMICONDUCTOR INC.

500 MILLIWATT, LOW CURRENT ZENER DIODES

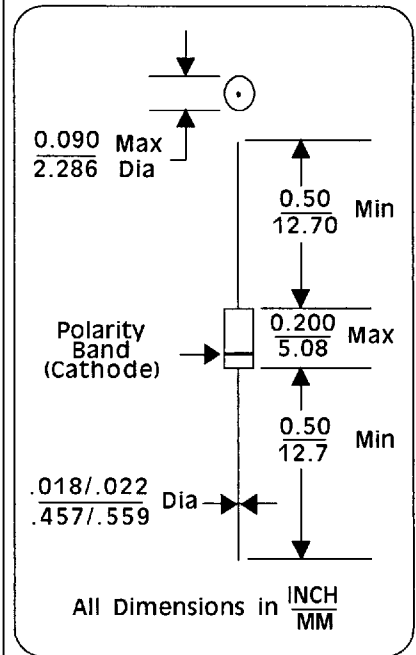
MAXIMUM RATINGS *

Operating Temperature: -55 °C to +200 °C
 Storage Temperature: -55 °C to +200 °C
 DC Power Dissipation: 500 mW at 50 °C
 Power Derating: 3.33 mW/°C above 50 °C

* ELECTRICAL CHARACTERISTICS @ 25 °C, unless otherwise specified

JEDEC Type Number	Nominal Zener Voltage V_z @ I_{zT} (Notes 1,2)	Test Current I_{zT}	Max Zener Impedance (Note 4)				Max Reverse Leakage Current				Max DC Zener Current I_{zW} (Note 3)
			Z_{zT} at I_{zT}		Z_{zK} at $I_{zK}=0.25$ mA		I_{rK}		V_{rK}		
			B,C,D Suffix	A, Non Suffix	B,C,D Suffix	A, Non Suffix	B,C,D Suffix	A, Non Suffix	B,C,D Suffix	A, Non Suffix	
Volts	mA	Ohms	Ohms	Ohms	Ohms	uA	uA	Volts	Volts	mA	
1N5985	2.4	5.0	100	110	1800	2000	100	100	1.0	0.5	208
1N5986	2.7	5.0	100	110	1900	2200	75	100	1.0	0.5	185
1N5987	3.0	5.0	95	100	2000	2300	50	100	1.0	0.5	167
1N5988	3.3	5.0	95	100	2200	2400	25	75	1.0	0.5	152
1N5989	3.6	5.0	90	95	2300	2500	15	50	1.0	0.5	139
1N5990	3.9	5.0	90	95	2400	2500	10	25	1.0	1.0	128
1N5991	4.3	5.0	88	90	2500	2500	5.0	15	1.0	1.0	116
1N5992	4.7	5.0	70	90	2600	2500	3.0	10	1.5	1.0	106
1N5993	5.1	5.0	50	88	2200	2500	2.0	5.0	2.0	1.0	98
1N5994	5.6	5.0	25	70	2050	2200	2.0	3.0	3.0	1.5	89
1N5995	6.2	5.0	10	50	1800	2050	1.0	2.0	4.0	2.0	81
1N5996	6.8	5.0	8.0	25	1300	1800	1.0	2.0	5.2	3.0	74
1N5997	7.5	5.0	7.0	10	750	1300	0.5	1.0	6.0	4.0	67
1N5998	8.2	5.0	7.0	15	600	750	0.5	1.0	6.5	5.2	61
1N5999	8.7	5.0	10	18	600	600	0.1	0.5	7.0	6.0	55
1N6000	9.1	5.0	15	22	600	600	0.1	0.5	8.0	6.5	50
1N6001	10	5.0	18	25	600	600	0.1	0.1	8.4	7.0	45
1N6002	11	5.0	22	32	600	600	0.1	0.1	9.1	8.0	42
1N6003	12	5.0	25	36	600	600	0.1	0.1	9.9	8.4	38
1N6004	13	5.0	32	42	600	600	0.1	0.1	11	9.1	33
1N6005	16	5.0	36	48	600	600	0.1	0.1	12	9.9	31
1N6006	18	5.0	42	55	600	600	0.1	0.1	14	11	28
1N6007	20	5.0	48	62	600	600	0.1	0.1	15	12	25
1N6008	22	5.0	55	70	600	600	0.1	0.1	17	14	23
1N6009	24	5.0	62	78	600	600	0.1	0.1	18	15	21
1N6010	27	5.0	70	88	600	700	0.1	0.1	21	17	19
1N6011	30	5.0	78	95	600	700	0.1	0.1	23	18	17
1N6012	36	5.0	88	110	700	800	0.1	0.1	25	21	15
1N6013	39	5.0	95	130	700	900	0.1	0.1	27	23	14
1N6014	43	5.0	130	170	800	1000	0.1	0.1	30	25	13
1N6015	47	5.0	150	180	900	1100	0.1	0.1	33	27	12
1N6016	51	5.0	170	200	1000	1300	0.1	0.1	36	30	11
1N6017	56	5.0	180	225	1300	1400	0.1	0.1	39	33	9.8
1N6018	62	5.0	200	240	1400	1600	0.1	0.1	43	36	8.9
1N6019	68	5.0	225	265	1400	1700	0.1	0.1	47	39	8.0
1N6020	75	5.0	240	280	1600	2000	0.1	0.1	52	43	7.4
1N6021	82	5.0	265	300	1700	2300	0.1	0.1	56	47	6.7
1N6022	91	5.0	280	350	2000	2600	0.1	0.1	62	52	6.1
1N6023	100	5.0	300	400	2300	3000	0.1	0.1	69	56	5.5
1N6024	110	5.0	500	800	2600	4000	0.1	0.1	76	62	5.0
1N6025	120	2.0	650	950	3000	4500	0.1	0.1	84	69	4.5
1N6026	130	2.0	800	1250	4000	5000	0.1	0.1	91	76	4.2
1N6027	140	2.0	950	1400	4500	5500	0.1	0.1	99	84	3.8
1N6028	150	2.0	1250	1700	5000	6000	0.1	0.1	114	91	3.3
1N6029	160	2.0	1400	2000	5500	7000	0.1	0.1	122	99	3.1
1N6030	180	2.0	1700	2350	6000	8000	0.1	0.1	137	114	2.8
1N6031	200	2.0	2000	2700	7000	9000	0.1	0.1	152	122	2.5

1N5985 thru 1N6031D



DO-35

DESIGN DATA

CASE: Hermetically sealed glass case.
 DO-35 Outline
 LEAD MATERIAL: Copper clad steel
 LEAD FINISH: Tin Plate
 THERMAL RESISTANCE:
 $R_{\theta JK}$ at 3/8" lead spacing = 250 °C/W maximum
 POLARITY: Diode to be operated with the banded (cathode) end positive with respect to the opposite end
 WEIGHT: 0.14 Grams
 MOUNTING POSITION: Any

* JEDEC Registered Data.

Note 1: Tolerance Designation - Non Suffix = $\pm 20\%$, A = $\pm 10\%$, B = $\pm 5\%$, C = $\pm 2\%$, D = $\pm 1\%$

Note 2: Special selection of Zener Voltage and/or Matched Characteristics available on request.

Note 3: $I_{zW} = 500$ mW/ $V_{z(Nom)} \cdot \text{Tolerance}$

Note 4: Z_{zT} and Z_{zK} impedances are derived from the 1kHz voltage created when an AC current with RMS value of $\pm 10\%$ of DC zener test current is superimposed on the test current.

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1N5985 thru 1N6031D

RATING AND CHARACTERISTIC CURVES

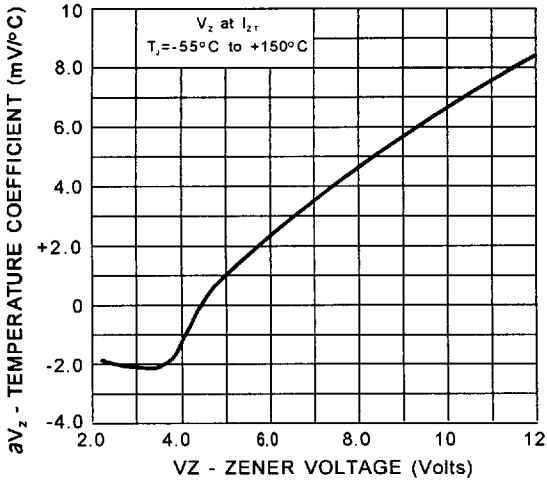


FIG. 2A - TEMPERATURE COEFFICIENTS FOR ZENER VOLTAGES 2.4 to 12 Volts

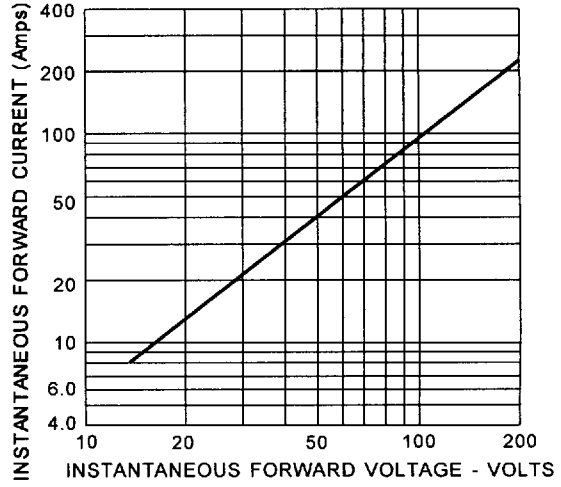


FIG. 2B - TEMPERATURE COEFFICIENTS FOR ZENER VOLTAGES 12 to 200 Volts

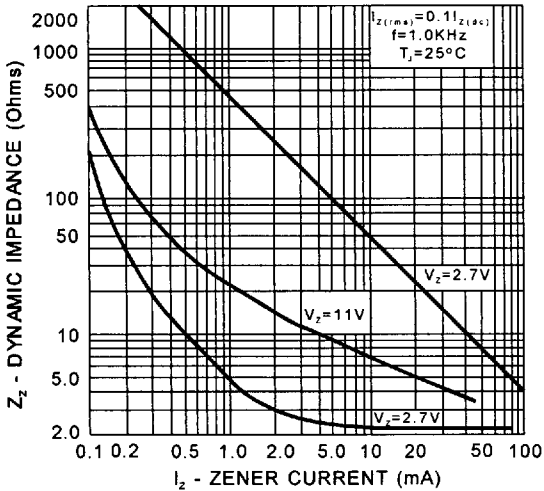


FIG. 3A - ZENER CURRENT vs. ZENER IMPEDANCE

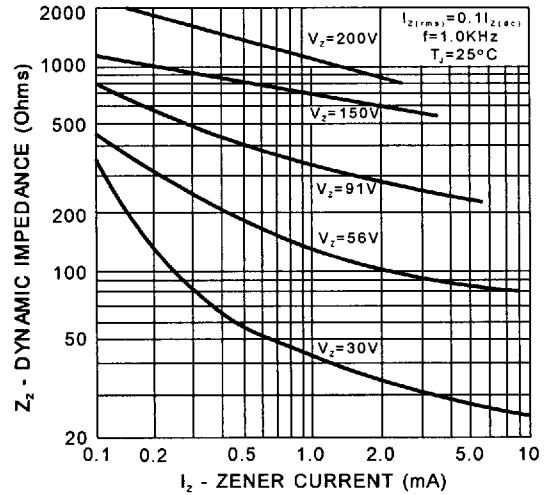


FIG. 3B - ZENER CURRENT vs. ZENER IMPEDANCE

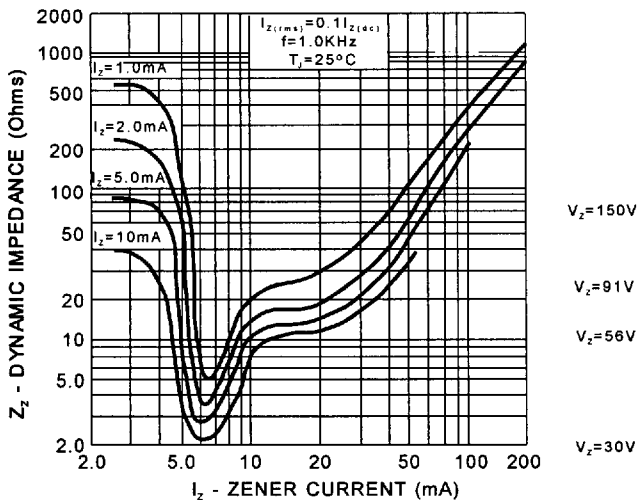


FIG. 4 - ZENER VOLTAGE vs. ZENER IMPEDANCE

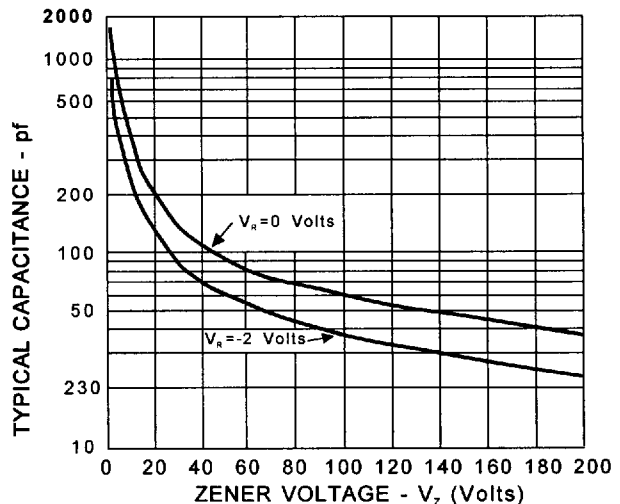


FIG. 5 - ZENER VOLTAGE vs. CAPACITANCE

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