

# New Jersey Semi-Conductor Products, Inc.

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## 1N3785 thru 1N3820

1.5 W  
6.8 - 200 V

CASE 55



Low silhouette single-ended package for printed circuit or socket mounting. Cathode connected to case.

### MAXIMUM RATINGS

Junction and Storage Temperature:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$ .  
D C Power Dissipation: 1.5 Watts at  $25^{\circ}\text{C}$  Ambient. (Derate 10 mW/ $^{\circ}\text{C}$ ).

The type numbers shown have a standard tolerance of  $\pm 20\%$  on the zener voltage. Standard tolerances of  $\pm 10\%$  and  $\pm 5\%$  on individual units are also available and are indicated by suffixing "A" for  $\pm 10\%$  and "B" for  $\pm 5\%$  units to the standard type number.

ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}\text{C}$  unless otherwise noted)  
 $V_T = 1.5\text{ V max @ } 300\text{ mA}$

Type No.	Nominal Zener Voltage @ $I_{T1}$ ( $V_T$ ) Volts	Test Current ( $I_{T1}$ ) mA	Max Zener Impedance			Max DC Zener Current ( $I_{T2}$ ) mA	Reverse Leakage Current*			Typical Zener Voltage Temp. Coeff. $\% / ^{\circ}\text{C}$
			$Z_{T1}$ @ $I_{T1}$ ohms	$Z_{T2}$ @ $I_{T2}$ ohms	$I_{T2}$ mA		$I_{R1}$ Max ( $\mu\text{A}$ )	$V_{R1}$	$V_{R2}$	
1N3785	6.8	55	2.7	700	1.0	195	150	5.2	4.9	.040
1N3786	7.5	50	3.0	700	0.5	175	75	5.7	5.4	.045
1N3787	8.2	46	3.5	700	0.5	155	50	6.2	5.9	.048
1N3788	9.1	41	4.0	700	0.5	140	25	6.9	6.6	.051
1N3789	10	37	5	700	0.25	125	10	7.6	7.2	.055
1N3790	11	34	6	700	0.25	115	5	8.4	8.0	.060
1N3791	12	31	7	700	0.25	105	5	9.1	8.8	.065
1N3792	13	29	8	700	0.25	98	5	9.9	9.4	.065
1N3793	15	25	10	700	0.25	85	5	11.4	10.8	.070
1N3794	16	23	11	700	0.25	80	5	12.2	11.5	.070
1N3795	18	21	13	750	0.25	70	5	13.7	13.0	.075
1N3796	20	19	15	750	0.25	62	5	15.2	14.4	.075
1N3797	22	17	16	750	0.25	56	5	16.7	15.8	.080
1N3798	24	16	17	750	0.25	51	5	18.2	17.3	.080
1N3799	27	14	20	750	0.25	46	5	20.6	19.4	.085
1N3800	30	12	25	1,000	0.25	41	5	22.8	21.6	.085
1N3801	33	11	30	1,000	0.25	38	5	25.1	23.8	.085
1N3802	36	10	35	1,000	0.25	35	5	27.4	25.9	.085
1N3803	39	10	40	1,000	0.25	31	5	29.7	28.1	.090
1N3804	43	9.0	45	1,500	0.25	28	5	32.7	31.0	.090
1N3805	47	8.0	55	1,500	0.25	26	5	35.8	33.8	.090
1N3806	51	7.4	65	2,000	0.25	24	5	38.8	36.6	.090
1N3807	56	6.7	75	2,000	0.25	22	5	42.6	40.3	.090
1N3808	62	6.0	85	2,000	0.25	20	5	47.1	44.6	.090
1N3809	68	5.5	95	2,000	0.25	18	5	51.7	49.0	.090
1N3810	75	5.0	110	2,000	0.25	16	5	56.0	54.0	.090
1N3811	82	4.5	130	3,000	0.25	14	5	62.0	59.0	.090
1N3812	91	4.1	150	3,000	0.25	13	5	69.2	65.5	.090
1N3813	100	3.7	200	4,000	0.25	12.0	5	76.0	72.0	.090
1N3814	110	3.4	300	4,000	0.25	11.0	5	83.6	79.2	.095
1N3815	120	3.1	350	4,500	0.25	10.5	5	91.2	86.4	.095
1N3816	130	2.9	400	5,000	0.25	9.0	5	98.8	93.6	.095
1N3817	150	2.5	700	6,000	0.25	8.0	5	114.0	108.0	.095
1N3818	160	2.3	750	6,500	0.25	8.0	5	121.8	115.0	.095
1N3819	180	2.1	800	7,000	0.25	7.0	5	137.0	130.0	.095
1N3820	200	1.9	1,000	8,000	0.25	6.0	5	152.0	144.0	.100

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%.

\*  $V_{R1}$  - Test Voltage for 5% Tolerance Device.  $V_{R2}$  - Test Voltage for 10% Tolerance Device. No Leakage Specified as 20% Tolerance Device.

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