

silicon voltage reference diodes

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temperature compensated
200 milliwatt

Type	Nom. Zener Voltage, V _Z (volts)	Dynamic Impedance, Z _Z (ohms)	Zener Current I _Z (mA)	Temp. Coefficient (% per °C)	Temp. Range (°C)	Case Style
1N429	6.2	20	7	± .01	-55/+100	C-1
1N1735	6.2	20	—	± .01	-55/+100	A-27h

250 milliwatt

1N430	8.4	15	10	±0.002	-55/+100	S-20
1N430A	8.4	15	10	±0.001	-55/+100	S-20
1N821	6.2	15	7.5	±0.01	-55/+100	DO-7
1N821A	6.2	10	7.5	±0.01	-55/+100	DO-7
1N823	6.2	15	7.5	±0.005	-55/+100	DO-7
1N823A	6.2	10	7.5	±0.005	-55/+100	DO-7
1N824	6.2	15	7.5	±0.005	-55/+100	DO-7
1N825	6.2	15	7.5	±0.002	-55/+100	DO-7
1N825A	6.2	10	7.5	±0.002	-55/+100	DO-7
1N827	6.2	15	7.5	±0.001	-55/+100	DO-7
1N827A	6.2	10	7.5	±0.001	-55/+100	DO-7
1N829	6.2	15	7.5	±0.0005	-55/+100	DO-7
1N829A	6.2	10	7.5	±0.0005	-55/+100	DO-7
1N2785	6.8	20	7.5	±0.005	-55/+100	A-48c
1N2765A	6.8	20	7.5	±0.002	-55/+100	A-48c
1N3496	6.2	15	7.5	±0.005	0/+ 75	DO-7
1N3497	6.2	15	7.5	±0.002	0/+ 75	DO-7
1N3498	6.2	15	7.5	±0.001	0/+ 75	DO-7
1N3499	6.2	15	7.5	±0.0005	0/+ 75	DO-7
1N3500	6.2	15	7.5	±0.01	0/+ 75	DO-7
1N3553	6.3	15	7.5	±0.0001	-55/+100	DO-7
1N4770	9.1	200	1.0	±0.01	0/+ 75	DO-7
1N4770A	9.1	200	1.0	±0.01	-55/+100	DO-7
1N4771	9.1	200	1.0	±0.005	0/+ 75	DO-7
1N4771A	9.1	200	1.0	±0.005	-55/+100	DO-7
1N4772	9.1	200	1.0	±0.002	0/+ 75	DO-7
1N4772A	9.1	200	1.0	±0.002	-55/+100	DO-7
1N4773	9.1	200	1.0	±0.001	0/+ 75	DO-7
1N4773A	9.1	200	1.0	±0.001	-55/+100	DO-7
1N4780	8.5	100	1.0	±0.01	0/+ 75	DO-7
1N4780A	8.5	100	1.0	±0.01	-55/+100	DO-7
1N4781	8.5	100	1.0	±0.005	0/+ 75	DO-7
1N4782	8.5	100	1.0	±0.002	0/+ 75	DO-7
1N4782A	8.5	100	1.0	±0.002	-55/+100	DO-7
1N4783	8.5	100	1.0	±0.001	0/+ 75	DO-7
1N4783A	8.5	100	1.0	±0.001	-55/+100	DO-7

400 milliwatt

1N1736	12.4	40	7.5	±0.01	-55/+100	A-28b
1N1736A	12.4	40	7.5	±0.005	-55/+100	A-28b
1N2766	13.6	40	7.5	±0.005	-55/+100	A-48c
1N2766A	13.6	40	7.5	±0.0025	-55/+100	A-48c
1N3154	8.4	15	10.0	±0.01	-55/+100	DO-7
1N3154A	8.4	15	10.0	±0.01	-55/+150	DO-7
1N3155	8.4	15	10.0	±0.005	-55/+100	DO-7
1N3155A	8.4	15	10.0	±0.005	-55/+150	DO-7
1N3156	8.4	15	10.0	±0.002	-55/+100	DO-7
1N3157	8.4	15	10.0	±0.001	-55/+100	DO-7
1N3157A	8.4	15	10.0	±0.001	-55/+150	DO-7
1N4295	10	20	10	±0.012	-55/+150	A-97
1N4295A	10	20	10	±0.012	-55/+100	A-97
1N4570	6.4	100	1.0	±0.01	0/+ 75	DO-7
1N4570A	6.4	100	1.0	±0.01	-55/+100	DO-7
1N4571	6.4	100	1.0	±0.005	0/+ 75	DO-7
1N4571A	6.4	100	1.0	±0.005	-55/+100	DO-7
1N4572	6.4	100	1.0	±0.002	0/+ 75	DO-7
1N4572A	6.4	100	1.0	±0.002	-55/+100	DO-7
1N4573	6.4	100	1.0	±0.001	0/+ 75	DO-7
1N4573A	6.4	100	1.0	±0.001	-55/+100	DO-7

500 milliwatt

Type	Nom. Zener Voltage, V _Z (volts)	Dynamic Impedance, Z _Z (ohms)	Zener Current I _Z (mA)	Temp. Coefficient (% per °C)	Temp. Range (°C)	Case Style
1N935	9.0	20	7.5	± .01	0/+ 75	DO-7
1N935A	9.0	20	7.5	± .01	-55/+100	DO-7
1N935B	9.0	20	7.5	± .01	-55/+150	DO-7
1N936	9.0	20	7.5	± .005	0/+ 75	DO-7
1N936A	9.0	20	7.5	± .005	-55/+100	DO-7
1N936B	9.0	20	7.5	± .005	-55/+150	DO-7
1N937	9.0	20	7.5	± .002	0/+ 75	DO-7
1N937A	9.0	20	7.5	± .002	-55/+100	DO-7
1N937B	9.0	20	7.5	± .002	-55/+150	DO-7
1N938	9.0	20	7.5	± .001	0/+ 75	DO-7
1N938A	9.0	20	7.5	± .001	-55/+100	DO-7
1N938B	9.0	20	7.5	± .001	-55/+150	DO-7
1N939	9.0	20	7.5	± .0005	0/+ 75	DO-7
1N939A	9.0	20	7.5	± .0005	-55/+100	DO-7
1N939B	9.0	20	7.5	± .0005	-55/+150	DO-7
1N940	9.0	20	7.5	± .0002	0/+ 75	DO-7
1N940A	9.0	20	7.5	± .0002	-55/+100	DO-7
1N940B	9.0	20	7.5	± .0002	-55/+150	DO-7
1N941	11.7	30	7.5	±0.01	0/+ 75	DO-7
1N941A	11.7	30	7.5	±0.01	-55/+100	DO-7
1N941B	11.7	30	7.5	±0.01	-55/+150	DO-7
1N942	11.7	30	7.5	±0.005	0/+ 75	DO-7
1N942A	11.7	30	7.5	±0.005	-55/+100	DO-7
1N942B	11.7	30	7.5	±0.005	-55/+150	DO-7
1N943	11.7	30	7.5	±0.002	0/+ 75	DO-7
1N943A	11.7	30	7.5	±0.002	-55/+100	DO-7
1N943B	11.7	30	7.5	±0.002	-55/+150	DO-7
1N944	11.7	30	7.5	±0.001	0/+ 75	DO-7
1N944A	11.7	30	7.5	±0.001	-55/+100	DO-7
1N944B	11.7	30	7.5	±0.001	-55/+150	DO-7
1N945	11.7	30	7.5	±0.0005	0/+ 75	DO-7
1N945A	11.7	30	7.5	±0.0005	-55/+100	DO-7
1N945B	11.7	30	7.5	±0.0005	-55/+150	DO-7
1N946	11.7	30	7.5	±0.0002	0/+ 75	DO-7
1N946A	11.7	30	7.5	±0.0002	-55/+100	DO-7
1N946B	11.7	30	7.5	±0.0002	-55/+150	DO-7
1N2163	9.4	15	10	0.005	0/+ 70	DO-13
1N2163A	9.4	15	10	0.005	0/+ 70	DO-13
1N2164	9.4	15	10	0.005	55/+125	DO-13
1N2164A	9.4	15	10	0.005	55/+125	DO-13
1N2165	9.4	15	10	0.005	-55/+185	DO-13
1N2165A	9.4	15	10	0.005	-55/+185	DO-13
1N2166	9.4	15	10	0.001	0/+ 70	DO-13
1N2166A	9.4	15	10	0.001	0/+ 70	DO-13
1N2167	9.4	15	10	0.001	-55/+125	DO-13
1N2167A	9.4	15	10	0.001	-55/+125	DO-13
1N2168	9.4	15	10	0.001	-55/+185	DO-13
1N2168A	9.4	15	10	0.001	-55/+185	DO-13
1N2169	9.4	15	10	0.005	0/+ 70	DO-13
1N2169A	9.4	15	10	0.005	0/+ 70	DO-13
1N2170	9.4	15	10	0.005	-55/+125	DO-13
1N2170A	9.4	15	10	0.005	-55/+125	DO-13
1N2171	9.4	15	10	0.005	-55/+185	DO-13
1N2171A	9.4	15	10	0.005	-55/+185	DO-13
1N2620	9.3	15	10	0.01	0/+ 75	DO-13
1N2620A	9.3	15	10	0.01	-55/+100	DO-13
1N2620B	9.3	15	10	0.01	-55/+150	DO-13
1N2621	9.3	15	10	0.005	0/+ 75	DO-13
1N2621A	9.3	15	10	0.005	-55/+100	DO-13
1N2621B	9.3	15	10	0.005	-55/+150	DO-13
1N2622	9.3	15	10	0.002	0/+ 75	DO-13
1N2622A	9.3	15	10	0.002	-55/+100	DO-13
1N2622B	9.3	15	10	0.002	-55/+150	DO-13
1N2623	9.3	15	10	0.001	0/+ 75	DO-13
1N2623A	9.3	15	10	0.001	-55/+100	DO-13
1N2623B	9.3	15	10	0.001	-55/+150	DO-13
1N2624	9.3	15	10	0.0005	0/+ 75	DO-13
1N2624A	9.3	15	10	0.0005	-55/+100	DO-13
1N2624B	9.3	15	10	0.0005	-55/+150	DO-13
1N3580	11.7	25	7.5	0.01	0/+ 75	DO-13
1N3580A	11.7	25	7.5	0.01	-55/+100	DO-13

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silicon zener diodes

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NOTES: The following notes explain variations in the standard type numbers listed for Silicon Zener Diodes. "Note" numbers are inserted above type numbers in the "Type" column. A note number then pertains to all types which follow it, up to that point where another note number is inserted and takes effect for subsequent types.

- Standard tolerances of 5.0% and 10% are available — no suffix is $\pm 10\%$ tolerance; suffix "A" denotes $\pm 5\%$ tolerance.
- Standard tolerance of $\pm 5\%$.
- Standard tolerance of $\pm 20\%$.
- Standard tolerances of 5.0%, 10%, and 20% are available — no suffix is 20% tolerance; suffix "A" denotes $\pm 10\%$ tolerance; suffix "B" is $\pm 5\%$ tolerance.
- Reverse polarity types available; add suffix "R."
- Standard tolerances of 1.0%, 5.0% and 10% are available — no suffix is

- $\pm 10\%$; suffix "A" denotes $\pm 5\%$ tolerance; suffix "B" is $\pm 1\%$.
- Standard tolerance of $\pm 15\%$.
- Impedance is derived from the 60 cycle AC voltage which results when an AC current having an RMS value equal to 10% of the DC Zener current is superimposed upon the DC current.
- Standard tolerance of $\pm 10\%$.
- Standard types are $\pm 10\%$ tolerance; suffix "A" denotes $\pm 5\%$ tolerance; suffix "C" denotes $\pm 10\%$ clipper; suffix "CA" denotes $\pm 5\%$ clipper.

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(Note 1)									
1N702	2.0/3.2	60	10	75	1.0	—	—	—	D0-7
1N703	3.0/3.9	55	10	50	1.0	—	—	—	D0-7
1N704	3.7/4.5	45	10	5	1.0	—	—	—	D0-7
1N705	4.3/5.4	35	10	5	1.5	—	—	—	D0-7
1N706	5.2/6.4	20	10	5	1.5	—	—	—	D0-7
1N707	6.2/8.0	10	10	5	3.5	—	—	—	D0-7
1N708	5.6	2.6	25	5	3.5	—	—	—	D0-7
1N709	6.2	4.1	25	5	3.5	—	—	—	D0-7
1N710	6.8	4.7	25	5	3.5	—	—	—	D0-7
1N711	7.5	5.3	25	5	3.5	—	—	—	D0-7
1N712	8.2	6.0	25	5	3.5	—	—	—	D0-7
1N713	9.1	7.0	12	5	3.5	—	—	—	D0-7
1N714	10.0	8.0	12	5	8.0	—	—	—	D0-7
1N715	11.0	9.0	12	5	8.0	—	—	—	D0-7
1N716	12.0	10.0	12	5	9.0	—	—	—	D0-7
1N717	13.0	11.0	12	—	—	—	—	—	D0-7
1N718	15.0	13.0	12	—	—	—	—	—	D0-7
1N719	16.0	15.0	12	—	—	—	—	—	D0-7
1N720	18.0	17.0	12	—	—	—	—	—	D0-7
1N721	20.0	20.0	4	—	—	—	—	—	D0-7
1N722	22.0	24.0	4	—	—	—	—	—	D0-7
1N723	24.0	28.0	4	—	—	—	—	—	D0-7
1N724	27.0	35.0	4	—	—	—	—	—	D0-7
1N725	30.0	42.0	4	—	—	—	—	—	D0-7
1N726	33.0	50.0	4	—	—	—	—	—	D0-7
1N727	36.0	60.0	4	—	—	—	—	—	D0-7
1N728	39.0	70.0	4	—	—	—	—	—	D0-7
1N729	43.0	84.0	4	—	—	—	—	—	D0-7
1N730	47.0	98.0	4	—	—	—	—	—	D0-7
1N731	51.0	115	4	—	—	—	—	—	D0-7
1N732	56.0	140	4	—	—	—	—	—	D0-7
1N733	62.0	170	2	—	—	—	—	—	D0-7
1N734	68.0	200	2	—	—	—	—	—	D0-7
1N735	75.0	240	2	—	—	—	—	—	D0-7
1N736	82.0	280	2	—	—	—	—	—	D0-7
1N737	91.0	340	1	—	—	—	—	—	D0-7
1N738	100	400	1	—	—	—	—	—	D0-7
1N739	110	490	1	—	—	—	—	—	D0-7
1N740	120	570	1	—	—	—	—	—	D0-7
1N741	130	650	1	—	—	—	—	—	D0-7
1N742	150	860	1	—	—	—	—	—	D0-7
1N743	160	970	1	—	—	—	—	—	D0-7
1N744	180	1200	1	—	—	—	—	—	D0-7
1N745	200	1400	1	—	—	—	—	—	D0-7
1N746	3.3	28	20	10	1.0	1.0	100	—	D0-7

(Note 1)									
1N747	3.6	24	20	10	1.0	1.0	100	—	D0-7
1N748	3.9	23	20	10	1.0	1.0	100	—	D0-7
1N749	4.3	22	20	2	1.0	1.0	100	—	D0-7
1N750	4.7	19	20	2	1.0	1.0	100	—	D0-7
1N751	5.1	17	20	1	1.0	1.0	100	—	D0-7
1N752	5.6	11	20	1	1.0	1.0	100	—	D0-7
1N753	6.2	7	20	0.1	1.0	1.0	100	—	D0-7
1N754	6.8	5	20	0.1	1.0	1.0	100	—	D0-7
1N755	7.5	6	20	0.1	1.0	1.0	100	—	D0-7
1N756	8.2	8	20	0.1	1.0	1.0	100	—	D0-7
1N757	9.1	10	20	0.1	1.0	1.0	100	—	D0-7
1N758	10.0	17	20	0.1	1.0	1.0	100	—	D0-7
1N759	12.0	30	20	0.1	1.0	1.0	100	—	D0-7
1N761, A	4.3/5.4	40	10	—	—	—	—	—	D0-7
1N762, A	5.2/6.4	18	10	—	—	—	—	—	D0-7
1N763, A	6.2/8.0	7	10	—	—	—	—	—	D0-7
1N763-3	7.5	7	10	—	—	—	—	—	D0-7
1N764, A	7.5/10.0	12	10	—	—	—	—	—	D0-7
1N765, A	9.0/12.0	45	5	—	—	—	—	—	D0-7
1N766, A	11.0/14.5	55	5	—	—	—	—	—	D0-7
1N767, A	13.5/18.0	70	5	—	—	—	—	—	D0-7
1N768, A	17/21	100	5	—	—	—	—	—	D0-7
1N769, A	20/27	150	5	—	—	—	—	—	D0-7
(Note 4)									
1N957	6.8	4.5	18.5	150	4.9	1.5	200	—	D0-7
1N958	7.5	5.5	16.5	75	5.4	1.5	200	—	D0-7
1N959	8.2	6.5	15.0	50	5.9	1.5	200	—	D0-7
1N960	9.1	7.5	14.0	25	6.6	1.5	200	—	D0-7
1N961	10.0	8.5	12.5	10	7.2	1.5	200	—	D0-7
1N962	11.0	9.5	11.5	5	8.0	1.5	200	—	D0-7
1N963	12.0	11.5	10.5	5	8.6	1.5	200	—	D0-7
1N964	13.0	13.0	9.5	5	9.4	1.5	200	—	D0-7
1N965	15.0	16.0	8.5	5	10.8	1.5	200	—	D0-7
1N966	16.0	17.0	7.8	5	11.5	1.5	200	—	D0-7
1N967	18.0	21.0	7.0	5	13.0	1.5	200	—	D0-7
1N968	20.0	25.0	6.2	5	14.4	1.5	200	—	D0-7
1N969	22.0	28.0	5.6	5	15.8	1.5	200	—	D0-7
1N970	24.0	33.0	5.2	5	17.3	1.5	200	—	D0-7
1N971	27.0	41.0	4.6	5	19.4	1.5	200	—	D0-7
1N972	30.0	49.0	4.2	5	21.6	1.5	200	—	D0-7
1N973	33.0	58.0	3.8	5	23.8	1.5	200	—	D0-7
1N974	36.0	70.0	3.4	5	25.9	1.5	200	—	D0-7
1N975	39.0	80.0	3.2	5	28.1	1.5	200	—	D0-7
1N976	43.0	93.0	3.0	5	31.0	1.5	200	—	D0-7
1N977	47.0	105.0	2.7	5	33.8	1.5	200	—	D0-7

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400 milliwatt — (cont'd)

Type	Zener V _Z (volts)	Dynamic Impedance Z _Z (ohms) (Note 8)	Zener Current I _Z (mA)	Reverse Current (μ A)	Reverse Voltage (volts)	Max. Forward Voltage (volts)	Forward Current (mA)	Case Style
(NOTE 4)								
1N978	51.0	125	2.5	5	36.7	1.5	200	DO-7
1N979	56.0	150	2.2	5	40.3	1.5	200	DO-7
1N980	62.0	185	2.0	5	44.6	1.5	200	DO-7
1N981	68.0	230	1.8	5	49.0	1.5	200	DO-7
1N982	75.0	270	1.7	5	54.0	1.5	200	DO-7
1N983	82.0	330	1.5	5	59.0	1.5	200	DO-7
1N984	91.0	400	1.4	5	65.5	1.5	200	DO-7
1N985	100	500	1.3	—	—	—	—	DO-7
1N986	110	750	1.1	—	—	—	—	DO-7

Type	Zener V _Z (volts)	Dynamic Impedance Z _Z (ohms) (Note 8)	Zener Current I _Z (mA)	Reverse Current (μ A)	Reverse Voltage (volts)	Max. Forward Voltage (volts)	Forward Current (mA)	Case Style
(NOTE 4)								
1N987	120	900	1.0	—	—	—	—	DO-7
1N988	130	1100	0.95	—	—	—	—	DO-7
1N989	150	1500	0.85	—	—	—	—	DO-7
1N990	160	1700	0.80	—	—	—	—	DO-7
1N991	180	2200	0.68	—	—	—	—	DO-7
1N992	200	2500	0.65	—	—	—	—	DO-7
(NOTE 1)								
1N4370	2.4	30	20	100	1.0	1.5	200	DO-7
1N4371	2.7	30	20	75	1.0	1.5	200	DO-7
1N4372	3.0	29	20	50	1.0	1.5	200	DO-7

500 milliwatt

Type	Zener Voltage V _Z (volts)	Dynamic Resistance Z _Z (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(NOTE 4)				
1N5221	2.4	30	20	DO-35
1N5222	2.5	30	20	DO-35
1N5223	2.7	30	20	DO-35
1N5224	2.8	30	20	DO-35
1N5225	3.0	29	20	DO-35
1N5226	3.3	28	20	DO-35
1N5227	3.6	24	20	DO-35
1N5228	3.9	23	20	DO-35
1N5229	4.3	22	20	DO-35
1N5230	4.7	19	20	DO-35
1N5231	5.1	17	20	DO-35
1N5232	5.6	11	20	DO-35
1N5233	6.0	7.0	20	DO-35
1N5234	6.2	7.0	20	DO-35
1N5235	6.8	5.0	20	DO-35
1N5236	7.5	6.0	20	DO-35
1N5237	8.2	8.0	20	DO-35
1N5238	8.7	8.0	20	DO-35
1N5239	9.1	10	20	DO-35
1N5240	10	17	20	DO-35
1N5241	11	22	20	DO-35
1N5242	12	30	20	DO-35
1N5243	13	13	9.5	DO-35
1N5244	14	15	9.0	DO-35
1N5245	15	16	8.5	DO-35
1N5246	16	17	7.8	DO-35
1N5247	17	19	7.4	DO-35
1N5248	18	21	7.0	DO-35
1N5249	19	23	6.6	DO-35
1N5250	20	25	6.2	DO-35

Type	Zener Voltage V _Z (volts)	Dynamic Impedance Z _Z (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(NOTE 4)				
1N5251	22	29	5.6	DO-35
1N5252	24	33	5.2	DO-35
1N5253	25	35	5.0	DO-35
1N5254	27	41	4.6	DO-35
1N5255	28	44	4.5	DO-35
1N5256	30	49	4.2	DO-35
1N5257	33	58	3.8	DO-35
1N5258	36	70	3.4	DO-35
1N5259	39	80	3.2	DO-35
1N5260	43	93	3.0	DO-35
1N5261	47	105	2.7	DO-35
1N5262	51	125	2.5	DO-35
1N5263	56	150	2.2	DO-35
1N5264	60	170	2.1	DO-35
1N5265	62	185	2.0	DO-35
1N5266	68	230	1.8	DO-35
1N5267	75	270	1.7	DO-35
1N5268	82	330	1.5	DO-35
1N5269	87	370	1.4	DO-35
1N5270	91	400	1.4	DO-35
1N5271	100	500	1.3	DO-35
1N5272	110	750	1.1	DO-35
1N5273	120	900	1.0	DO-35
1N5274	130	1100	0.95	DO-35
1N5275	140	1300	0.90	DO-35
1N5276	150	1500	0.85	DO-35
1N5277	160	1700	0.80	DO-35
1N5278	170	1900	0.74	DO-35
1N5279	180	2200	0.68	DO-35
1N5280	190	2400	0.66	DO-35
1N5281	200	2500	0.65	DO-35

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Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(NOTE 4)				
1N3016	6.8	3.5	37.0	DO-13
1N3017	7.5	4.0	34.0	DO-13
1N3018	8.2	4.5	31.0	DO-13
1N3019	9.1	5.0	28.0	DO-13
1N3020	10.0	7.0	25.0	DO-13
1N3021	11.0	8.0	23.0	DO-13
1N3022	13.0	10.0	19.0	DO-13
1N3023	12.0	9.0	19.0	DO-13
1N3024	15.0	14.0	17.0	DO-13
1N3025	16.0	16.0	15.5	DO-13
1N3026	18.0	20.0	14.0	DO-13
1N3027	20.0	22.0	12.5	DO-13
1N3028	22.0	23.0	11.5	DO-13
1N3029	24.0	25.0	10.5	DO-13
1N3030	27.0	35.0	9.5	DO-13
1N3031	30.0	40.0	8.5	DO-13
1N3032	33.0	45.0	7.5	DO-13
1N3033	36.0	50.0	7.0	DO-13
1N3034	39.0	60.0	6.5	DO-13
1N3035	43.0	70.0	6.0	DO-13
1N3036	47.0	80.0	5.5	DO-13
1N3037	51.0	95.0	5.0	DO-13
1N3038	56	110	4.5	DO-13

Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Style Case
(NOTE 4)				
1N3039	62	125	4.0	DO-13
1N3040	68	150	3.7	DO-13
1N3041	75	175	3.3	DO-13
1N3042	82	200	3.0	DO-13
1N3043	91	250	2.8	DO-13
1N3044	100	350	2.5	DO-13
1N3045	110	450	2.3	DO-13
1N3046	120	550	2.0	DO-13
1N3047	130	700	1.9	DO-13
1N3048	150	1000	1.7	DO-13
1N3049	160	1100	1.6	DO-13
1N3050	180	1200	1.4	DO-13
1N3051	200	1500	1.2	DO-13
(NOTE 1)				
1N4728	3.3	10	76	DO-41
1N4729	3.6	10	69	DO-41
1N4730	3.9	9.0	64	DO-41
1N4731	4.3	9.0	58	DO-41
1N4732	4.7	8.0	53	DO-41
1N4733	5.1	7.0	49	DO-41
1N4734	5.6	5.0	45	DO-41
1N4735	6.2	2.0	41	DO-41
1N4736	6.8	3.5	37	DO-41
1N4737	7.5	4.0	34	DO-41
1N4738	8.2	4.5	31	DO-41
1N4739	9.1	5.0	28	DO-41

Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(NOTE 1)				
1N4740	10	7.0	25	DO-41
1N4741	11	8.0	23	DO-41
1N4742	12	9.0	21	DO-41
1N4743	13	10	19	DO-41
1N4744	15	14	17	DO-41
1N4745	16	16	15.5	DO-41
1N4746	18	20	14	DO-41
1N4747	20	22	12.5	DO-41
1N4748	22	23	11.5	DO-41
1N4749	24	25	10.5	DO-41
1N4750	27	35	9.5	DO-41
1N4751	30	40	8.5	DO-41
1N4752	33	45	7.5	DO-41
1N4753	36	50	7.0	DO-41
1N4754	39	60	6.5	DO-41
1N4755	43	70	6.0	DO-41
1N4756	47	80	5.5	DO-41
1N4757	51	95	5.0	DO-41
1N4758	56	110	4.5	DO-41
1N4759	62	125	4.0	DO-41
1N4760	68	150	3.7	DO-41
1N4761	75	175	3.3	DO-41
1N4762	82	200	3.0	DO-41
1N4763	91	250	2.8	DO-41
1N4764	100	350	2.5	DO-41

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5 watt DO-27 case style

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JEDEC TYPE NUMBER	NOMINAL ZENER VOLTAGE V_z VOLTS	TEST CURRENT I_{zt} mA	MAXIMUM ZENER IMPEDANCE A & B SUFFIX ONLY		
			$Z_{zt} @ I_{zt}$ Ohms	$Z_{zk} @ I_{zk}$ Ohms	I_{zk} mA
(NOTE 4)					
1N5333	3.3	380	3.0	400	1.0
1N5334	3.6	350	2.5	500	1.0
1N5335	3.9	320	2.0	500	1.0
1N5336	4.3	290	2.0	500	1.0
1N5337	4.7	260	2.0	450	1.0
1N5338	5.1	240	1.5	400	1.0
1N5339	5.6	220	1.0	400	1.0
1N5340	6.0	200	1.0	300	1.0
1N5341	6.2	200	1.0	200	1.0
1N5342	6.8	175	1.0	200	1.0
1N5343	7.5	175	1.5	200	1.0
1N5344	8.2	150	1.5	200	1.0
1N5345	8.7	150	2.0	200	1.0
1N5346	9.1	150	2.0	150	1.0
1N5347	10	125	2.0	125	1.0
1N5348	11	125	2.5	125	1.0
1N5349	12	100	2.5	125	1.0
1N5350	13	100	2.5	100	1.0
1N5351	14	100	2.5	75	1.0
1N5352	15	75	2.5	75	1.0
1N5353	16	75	2.5	75	1.0
1N5354	17	70	2.5	75	1.0
1N5355	18	65	2.5	75	1.0
1N5356	19	65	3.0	75	1.0
1N5357	20	65	3.0	75	1.0
1N5358	22	50	3.5	75	1.0
1N5359	24	50	3.5	100	1.0
1N5360	25	50	4.0	110	1.0

JEDEC TYPE NUMBER	NOMINAL ZENER VOLTAGE V_z VOLTS	TEST CURRENT I_{zt} mA	MAXIMUM ZENER IMPEDANCE A & B SUFFIX ONLY		
			$Z_{zt} @ I_{zt}$ Ohms	$Z_{zk} @ I_{zk}$ Ohms	I_{zk} mA
(NOTE 4)					
1N5361	27	50	5.0	120	1.0
1N5362	28	50	6.0	130	1.0
1N5363	30	40	25.0	140	1.0
1N5364	33	40	27.0	150	1.0
1N5365	36	30	35.0	160	1.0
1N5366	39	30	40.0	170	1.0
1N5367	43	30	42.0	190	1.0
1N5368	47	25	25.0	210	1.0
1N5369	51	25	27.0	230	1.0
1N5370	56	20	35.0	280	1.0
1N5371	60	20	40.0	350	1.0
1N5372	62	20	42.0	400	1.0
1N5373	68	20	44.0	500	1.0
1N5374	75	20	45.0	620	1.0
1N5375	82	15	65.0	720	1.0
1N5376	87	15	75.0	760	1.0
1N5377	91	15	75.0	760	1.0
1N5378	100	12	90.0	800	1.0
1N5379	110	12	125.0	1000	1.0
1N5380	120	10	170.0	1150	1.0
1N5381	130	10	190.0	1250	1.0
1N5382	140	8.0	230.0	1500	1.0
1N5383	150	8.0	330.0	1500	1.0
1N5384	160	8.0	350.0	1650	1.0
1N5385	170	8.0	380.0	1750	1.0
1N5386	180	5.0	430.0	1750	1.0
1N5387	190	5.0	450.0	1850	1.0
1N5388	200	5.0	480.0	1850	1.0

10 watt DO-4 case style

Type	Zener Voltage V_z (volts)	Dynamic Resistance R_D (ohms) (Note 8)	Zener Current I_z (mA)	Case Style
(Notes 5, 9)				
1N1351	10	2	500	DO-4
1N1352	11	2	500	DO-4
1N1353	12	2	500	DO-4
1N1354	13	2	500	DO-4
1N1355	15	2	500	DO-4
1N1356	16	3	500	DO-4
1N1357	18	3	150	DO-4
1N1358	20	3	150	DO-4
1N1359	22	3	150	DO-4
1N1360	24	3	150	DO-4
1N1361	27	3	150	DO-4
1N1362	30	4	150	DO-4
1N1363	33	4	150	DO-4
1N1364	36	5	150	DO-4
1N1365	39	5	150	DO-4
1N1366	43	6	150	DO-4
1N1367	47	7	150	DO-4
1N1368	51	8	150	DO-4
1N1370	56	9	150	DO-4
1N1370	62	12	50	DO-4
(Notes 5, 9)				
1N1371	68	14	50	DO-4
1N1372	75	20	50	DO-4
1N1373	82	22	50	DO-4
1N1374	91	35	50	DO-4
1N1375	100	40	50	DO-4
(Notes 1, 5)				
1N1588	3.9	2.9	150	DO-4
1N1588A	3.9	2.9	150	DO-4
1N1589	4.7	2.5	125	DO-4
1N1589A	4.7	2.5	125	DO-4
1N1590	5.6	1.9	110	DO-4
1N1590A	5.6	1.5	110	DO-4
1N1591	6.8	0.87	100	DO-4
1N1591A	6.8	0.73	100	DO-4
1N1592	8.2	0.60	80	DO-4
1N1592A	8.2	0.55	80	DO-4
1N1593	10.0	1.05	70	DO-4
1N1593A	10.0	0.88	70	DO-4
1N1594	12.0	2.2	50	DO-4
1N1594A	12.0	1.9	50	DO-4

Type	Zener Voltage V_z (volts)	Dynamic Resistance R_D (ohms) (Note 8)	Zener Current I_z (mA)	Case Style
(Notes 1, 5)				
1N1595	15.0	5.1	40	DO-4
1N1595A	15.0	4.9	40	DO-4
1N1596	18.0	8.0	35	DO-4
1N1596A	18.0	7.1	35	DO-4
1N1597	22.0	12.0	30	DO-4
1N1597A	22.0	10.5	30	DO-4
1N1598	27.0	18.0	25	DO-4
1N1598A	27.0	17.0	25	DO-4
1N1599	3.9	0.96	500	DO-4
1N1599A	3.9	0.92	500	DO-4
1N1600	4.7	0.85	400	DO-4
1N1600A	4.7	0.77	400	DO-4
1N1601	5.6	0.55	350	DO-4
1N1601A	5.6	0.41	350	DO-4
1N1602	6.8	0.28	300	DO-4
1N1602A	6.8	0.22	300	DO-4
1N1603	8.2	0.36	250	DO-4
1N1603A	8.2	0.29	250	DO-4
1N1604	10.0	0.78	200	DO-4
1N1604A	10.0	0.71	200	DO-4
(Notes 1, 5)				
1N1605	12.0	1.12	170	DO-4
1N1605A	12.0	1.10	170	DO-4
1N1606	15.0	1.90	140	DO-4
1N1606A	15.0	1.90	140	DO-4
1N1607	18.0	2.60	110	DO-4
1N1607A	18.0	2.45	110	DO-4
1N1608	22.0	3.9	90	DO-4
1N1608A	22.0	3.6	90	DO-4
1N1609	27.0	6.6	70	DO-4
1N1609A	27.0	5.5	70	DO-4
1N1803	5.6	1.0	1000	DO-4
1N1804	6.2	1.0	1000	DO-4
1N1805	6.8	1.0	1000	DO-4
1N1806	7.5	1.0	1000	DO-4
1N1807	8.2	1.0	1000	DO-4
1N1808	9.1	1.0	500	DO-4
1N1809	110.0	47.0	50	DO-4
1N1810	120.0	56.0	50	DO-4
1N1811	130.0	65.0	50	DO-4

Type	Zener Voltage V_z (volts)	Dynamic Resistance R_D (ohms) (Note 8)	Zener Current I_z (mA)	Case Style
(NOTE 1.5)				
1N1812	150.0	82.0	50	DO-4
1N1813	160.0	93.0	50	DO-4
1N1814	180.0	115.0	50	DO-4
1N1815	200.0	140.0	50	DO-4
1N1816	13.0	2.0	500	DO-4
1N1817	15.0	2.0	500	DO-4
1N1818	16.0	3.0	500	DO-4
1N1819	18.0	3.0	500	DO-4
1N1820	20.0	3.0	250	DO-4
1N1821	22.0	3.0	250	DO-4
1N1822	24.0	3.0	250	DO-4
1N1823	27.0	3.0	250	DO-4
1N1824	30.0	4.0	250	DO-4
1N1825	33.0	4.0	150	DO-4
1N1826	36.0	5.0	150	DO-4
1N1827	39.0	5.0	150	DO-4
(Notes 1, 5)				
1N1828	43.0	6.0	150	DO-4
1N1829	47.0	7.0	150	DO-4
1N1830	51.0	8.0	150	DO-4
1N1831	56.0	9.0	150	DO-4
1N1832	62.0	12.0	50	DO-4
1N1833	68.0	14.0	50	DO-4
1N1834	75.0	20.0	50	DO-4
1N1835	82.0	22.0	50	DO-4
1N1836	91.0	35.0	50	DO-4
1N2008	100	40	50	DO-4
1N2009	110	47	50	DO-4
1N2010	120	56	50	DO-4
1N2011	130	65	50	DO-4
1N2041	4.8	1.0	1000	DO-4
1N2042	5.8	0.7	1000	DO-4
1N2043	7.1	0.8	1000	DO-4
1N2044	8.75	0.8	1000	DO-4
1N2045	10.5	1.5	500	DO-4
1N2046	12.75	2.0	500	DO-4
1N2047	15.75	3.0	500	DO-4
1N2048	19.0	4.0	500	DO-4
1N2049	23.5	8.0	150	DO-4

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Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(Notes 2, 5)				
1N2041-1	4.5	1.0	1000	DO-4
1N2041-2	5.0	1.0	1000	DO-4
1N2042-1	5.5	0.7	1000	DO-4
1N2042-2	6.0	0.7	1000	DO-4
1N2043-1	6.5	0.8	1000	DO-4
1N2043-2	7.0	0.8	1000	DO-4
1N2043-3	7.5	0.8	1000	DO-4
1N2044-1	8.0	0.8	1000	DO-4
1N2044-2	8.5	0.8	1000	DO-4
1N2044-3	9.0	0.8	1000	DO-4
1N2044-4	9.5	0.8	1000	DO-4
1N2045-1	10.0	1.5	500	DO-4
1N2045-2	11.0	1.5	500	DO-4
1N2046-1	12.0	2.0	500	DO-4
1N2046-2	13.0	2.0	500	DO-4
1N2046-3	14.0	2.0	500	DO-4
1N2047-1	15.0	3.0	500	DO-4
1N2047-2	16.0	3.0	500	DO-4
1N2047-3	17.0	3.0	500	DO-4
1N2048-1	18.0	3.0	500	DO-4
1N2048-2	19.0	3.0	500	DO-4
1N2048-3	20.0	3.0	500	DO-4
1N2049-1	22.0	8.0	150	DO-4
1N2049-2	24.0	8.0	150	DO-4
1N2049-3	26.0	8.0	150	DO-4
(Note 10)				
1N2498	10	2.0	500	DO-4
1N2499	11	2.0	500	DO-4
1N2500	12	2.0	500	DO-4

Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(Notes 4, 5)				
1N2970	6.8	1.2	370	DO-4
1N2971	7.5	1.3	335	DO-4
1N2972	8.2	1.5	305	DO-4
1N2973	9.1	2.0	275	DO-4
1N2974	10.0	3.0	250	DO-4
1N2975	11.0	3.0	230	DO-4
1N2976	12.0	3.0	210	DO-4
1N2977	13.0	3.0	190	DO-4
1N2978	14.0	3.0	180	DO-4
1N2979	15.0	3.0	170	DO-4
1N2980	16.0	4.0	155	DO-4
1N2981	17.0	4.0	145	DO-4
1N2982	18.0	4.0	140	DO-4
1N2983	19.0	4.0	130	DO-4
1N2984	20.0	4.0	125	DO-4
1N2985	22.0	5.0	115	DO-4
1N2986	24.0	5.0	105	DO-4
1N2987	25.0	6.0	100	DO-4
1N2988	27.0	7.0	95	DO-4
1N2989	30.0	8.0	85	DO-4
1N2990	33.0	9.0	75	DO-4
1N2991	36.0	10.0	70	DO-4
1N2992	39.0	11.0	65	DO-4
1N2993	43.0	12.0	60	DO-4
1N2994	45.0	13.0	55	DO-4
1N2995	47.0	14.0	55	DO-4
1N2996	50.0	15.0	50	DO-4
1N2997	51.0	15.0	50	DO-4

Type	Zener Voltage V _Z (volts)	Dynamic Resistance R _D (ohms) (Note 8)	Zener Current I _Z (mA)	Case Style
(NOTE 4, 5)				
1N2998	52.0	15.0	50	DO-4
1N2999	56.0	16.0	45	DO-4
1N3000	62.0	17.0	40	DO-4
1N3001	68.0	18.0	37	DO-4
1N3002	75.0	22.0	33	DO-4
(Notes 4, 5)				
1N3003	82.0	25.0	30	DO-4
1N3004	91.0	35.0	28	DO-4
1N3005	100	40.0	25	DO-4
1N3006	105	45.0	25	DO-4
1N3007	110	55.0	23	DO-4
1N3008	120	75.0	20	DO-4
1N3009	130	100	19	DO-4
1N3010	140	125	18	DO-4
1N3011	150	175	17	DO-4
1N3012	160	200	16	DO-4
1N3013	175	250	14	DO-4
1N3014	180	260	14	DO-4
1N3016	200	300	12	DO-4
(Notes 1, 5)				
1N3993	3.9	2.0	640	DO-4
1N3994	4.3	1.5	580	DO-4
1N3995	4.7	1.2	530	DO-4
1N3996	5.1	1.1	490	DO-4
1N3997	5.6	1.0	445	DO-4
1N3998	6.2	1.1	405	DO-4
1N3999	6.8	1.2	370	DO-4
1N4000	7.5	1.3	335	DO-4

50 watt (Dissipation Rated @ 75°C)

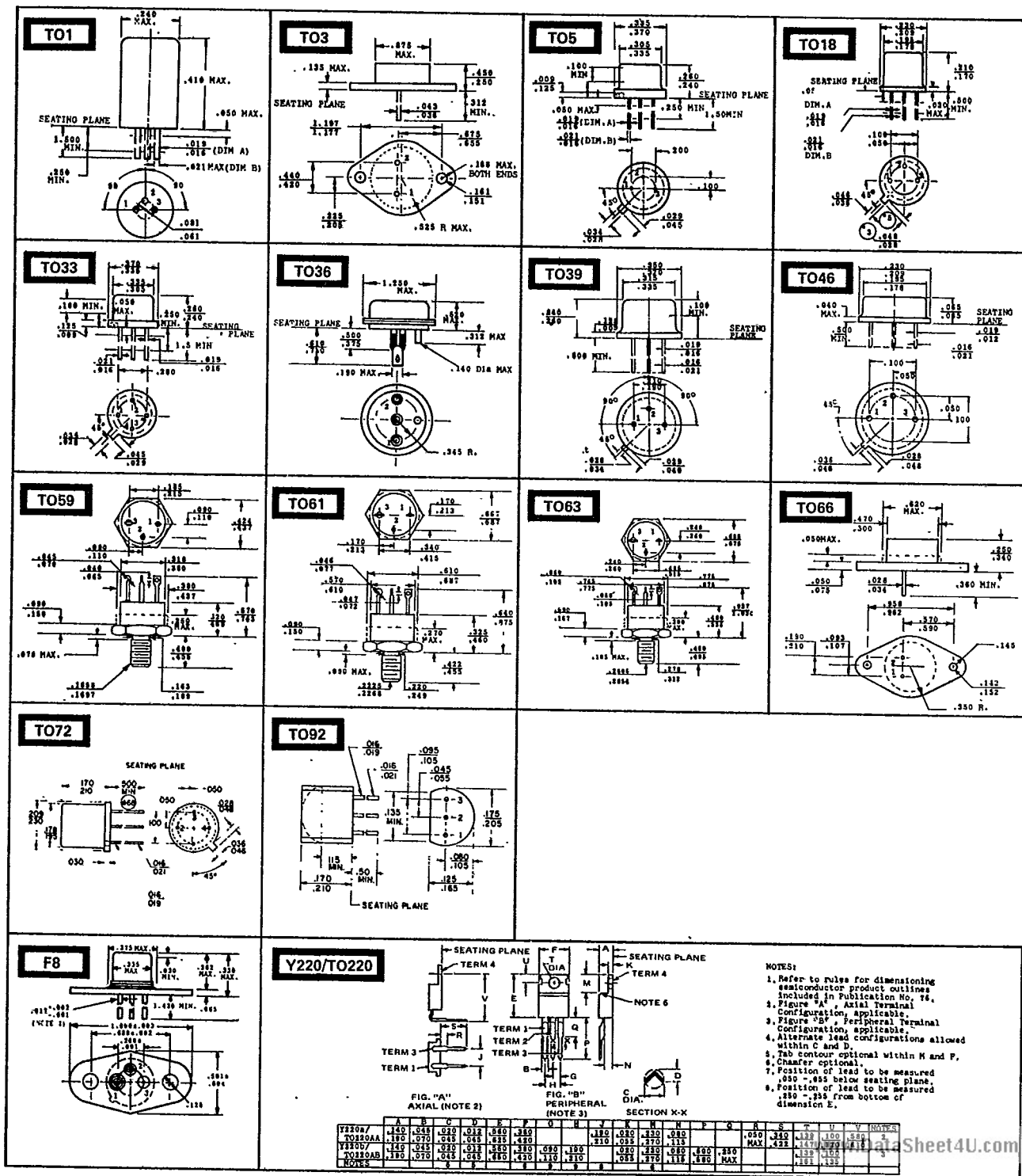
Flange Mounted (Case Style TO-3) Type	Stud Mounted (Case Style DO-5) Type	Nominal Zener Voltage, V _Z (volts)	Zener Current I _Z (mA)	Dynamic Resistance (R _D) (ohms) (Note 8)
(Notes 4, 5)				
1N2804	1N3305	6.8	1850	0.2
1N2805	1N3306	7.5	1700	0.3
1N2806	1N3307	8.2	1500	0.4
1N2807	1N3308	9.1	1370	0.5
1N2808	1N3309	10	1200	0.6
1N2809	1N3310	11	1100	0.8
1N2810	1N3311	12	1000	1.0
1N2811	1N3312	13	960	1.1
1N2812	1N3313	14	890	1.2
1N2813	1N3314	15	830	1.4
1N2814	1N3315	16	780	1.6
1N2815	1N3316	17	740	1.8
1N2816	1N3317	18	700	2.0
1N2817	1N3318	19	660	2.2
1N2818	1N3319	20	630	2.4

Flange Mounted (Case Style TO-3) Type	Stud Mounted (Case Style DO-5) Type	Nominal Zener Voltage, V _Z (volts)	Zener Current I _Z (mA)	Dynamic Resistance (R _D) (ohms) (Note 8)
(Notes 4, 5)				
1N2819	1N3320	22	570	2.5
1N2820	1N3321	24	520	2.6
1N2821	1N3322	25	500	2.7
1N2822	1N3323	27	460	2.8
1N2823	1N3324	30	420	3.0
1N2824	1N3325	33	380	3.2
1N2825	1N3326	36	350	3.5
1N2826	1N3327	39	320	4.0
1N2827	1N3328	43	290	4.5
1N2828	1N3329	45	280	4.5
1N2829	1N3330	47	270	5.0
1N2830	1N3331	50	245	5.2
1N2831	1N3332	51	245	5.2
1N2832	1N3333	52	240	5.5
1N2833	1N3334	56	220	6.0

Flange Mounted (Case Style TO-3) Type	Stud Mounted (Case Style DO-5) Type	Nominal Zener Voltage, V _Z (volts)	Zener Current I _Z (mA)	Dynamic Resistance (R _D) (ohms) (Note 8)
(Notes 4, 5)				
1N2833	1N3335	62	200	7.0
1N2834	1N3336	68	180	8.0
1N2835	1N3337	75	170	9.0
1N2836	1N3338	82	150	11
1N2837	1N3339	91	140	15
1N2838	1N3340	100	120	20
1N2839	1N3341	105	120	25
1N2840	1N3342	110	110	30
1N2841	1N3343	120	100	40
1N2842	1N3344	130	95	50
1N2843	1N3345	140	90	60
1N2844	1N3346	150	85	75
1N2845	1N3347	160	80	80
1N2846	1N3348	175	70	85
1N2847	1N3349	180	68	90
1N2848	1N3350	200	65	100

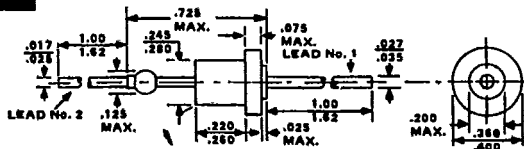
case outline drawings

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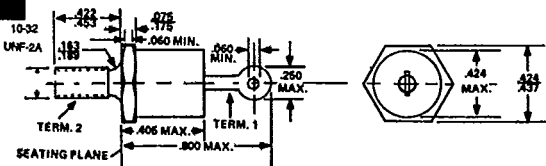


case outline drawings cont'd

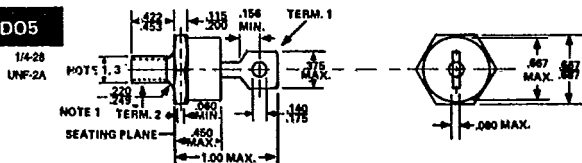
D01-3



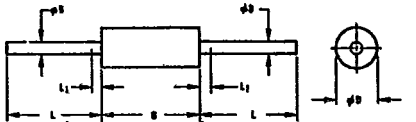
D04



005



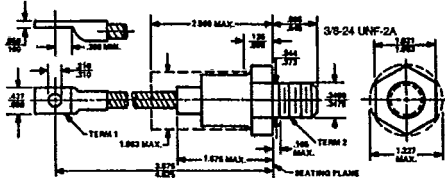
b07



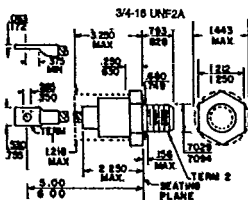
MILLIMETER DIMENSIONS ARE DERIVED FROM ORIGINAL INCH DIMENSIONS

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
8B	.018	.022	0.458	0.558	1
8D	.085	.107	2.16	2.71	1
G	.230	.308	5.85	7.62	1
L	1.000	-	25.40	-	-
L ₁	-	.050	-	1.27	2

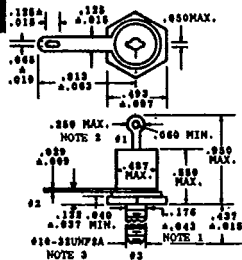
D08



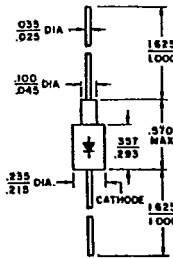
D09



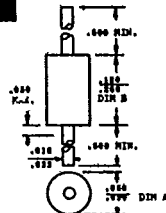
DO10



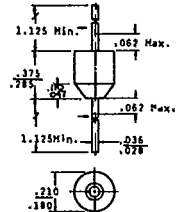
D013



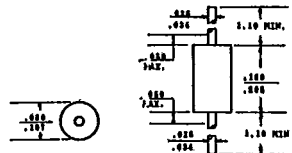
D035



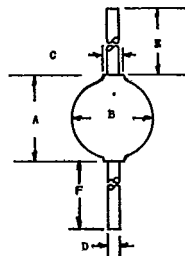
D027



D041

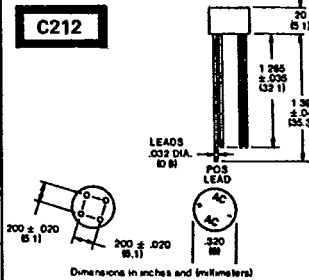


A249



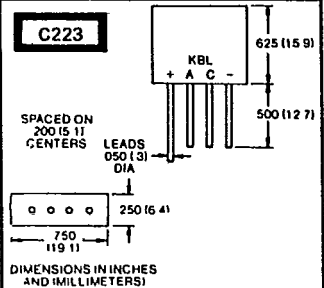
	A	B	C	D	E	F
A249	.340 MAX	.280 MAX	.023 MIN	.085 MAX	1.000 MIN	1.000 MIN
A249a	.190 MAX	.177 MAX		.035 MAX	.084 MIN	.084 MIN
A249b	.275 MAX	.130 MAX		.023 MAX	1.13 MIN	
A249c	.190 MAX	.107 MAX		.020 MAX	1.14 MIN	1.16 MIN

C212



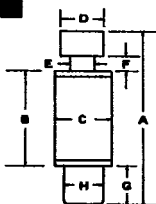
Dimensions in inches and millimeters.

C223



**DIMENSIONS IN INCHES
AND (MILLIMETERS)**

F22



	A	B	C	D	E	F	G	H
P2a	.975	.860	.848	.848	.100	.052	.352	.848
	1.03	.945	.938	.960	.140	.075	.380	.848
P21a	1.48	.988	.980	.950	.130	.083	.380	.810
P21b	1.93	1.43	.990	.980	.138	.063	.260	.250
			MAX					
P22c	3.40	1.99	.980	.950	.120	.063	.260	.250
			MAX					
P23d	3.97	2.37	.980	.960	.120	.063	.266	.250
			MAX					
P23e	3.34	2.64	.980	.980	.120	.063	.260	.250
			MAX					
P24f	3.61	3.31	.980	.950	.130	.063	.254	.238
			MAX					
P25g	1.12	.860	.980	.960	.120	.063	.250	.250
			MAX					
P25h								