
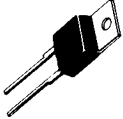
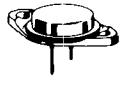



General-Purpose Regulator Diodes (continued)

Nominal Zener Voltage	10 Watt Cathode to Case = 1N3993 & MZT2970 Series Anode to Case = 1N2970 Series		50 Watt Cathode to Case = MZT4549 Series Anode to Case = 1N457A Series		
	(*Note 1)	(*Notes 2,10,12)	(*Notes 2,16)	(*Notes 2,10,12)	(*Notes 2,10,12)
					
	Metal Case 56 (DO-4)	221B-01 (TO-220AC) Plastic		Metal Case 54 (TO-3)	Metal Case 58 (DO-5 Type)
1.8 2.0 2.2 2.4 2.5 2.7 2.8 3.0 3.3					
3.6 3.9 4.3 4.7 5.1 5.6 6.0 6.2	1N3993&R 1N3994&R 1N3995&R 1N3996&R 1N3997&R 1N3998&R		MZT4549 B MZT4550 B MZT4551 B MZT4552 B MZT4553 B	1N4557B&RB 1N4558B&RB 1N4559B&RB 1N4560B&RB 1N4561B&RB	1N4549B&RB 1N4550B&RB 1N4551B&RB 1N4552B&RB 1N4553B&RB
6.8	1N3999&R 1N2970B&RB	MZT2970 B	MZT3305 B	1N4563B&RB 1N2804B&RB	1N4555B&RB 1N3305B&RB
7.5	1N4000&R 1N2971B&RB	MZT2971 B	MZT3306 B	1N4564B&RB 1N2805B&RB	1N4556B&RB 1N3306B&RB
8.2	1N2972B&RB	MZT2972 B	MZT3307 B	1N2806B&RB	1N3307B&RB
8.7					
9.1	1N2973B&RB	MZT2973 B	MZT3308 B	1N2807B&RB	1N3308B&RB
10	1N2974B&RB	MZT2974 B	MZT3309 B	1N2808B&RB	1N3309B&RB
11	1N2975B&RB	MZT2975 B	MZT3310 B	1N2809B&RB	1N3310B&RB
12	1N2976B&RB	MZT2976 B	MZT3311 B	1N2810B&RB	1N3311B&RB
13 14 15 16 17 18	1N2977B&RB 1N2978B&RB 1N2979B&RB 1N2980B&RB 1N2982B&RB	MZT2977 B MZT2978 B MZT2979 B MZT2980 B MZT2981 B	MZT3312 B MZT3313 B MZT3314 B MZT3315 B MZT3316 B MZT3317 B	1N2811B&RB 1N2812B&RB 1N2813B&RB 1N2814B&RB 1N2815B&RB 1N2816B&RB	1N3312B&RB 1N3313B&RB 1N3314B&RB 1N3315B&RB 1N3316B&RB 1N3317B&RB
19 20 22 24 25 27	1N2983B&RB 1N2984B&RB 1N2985B&RB 1N2986B&RB 1N2988B&RB	MZT2982 B MZT2983 B MZT2984 B MZT2986 B MZT2987 B	MZT3318 B MZT3319 B MZT3320 B MZT3321 B MZT3322 B MZT3323 B	1N2817B&RB 1N2818B&RB 1N2819B&RB 1N2820B&RB 1N2821B&RB 1N2822B&RB	1N3318B&RB 1N3319B&RB 1N3320B&RB 1N3321B&RB 1N3322B&RB 1N3323B&RB
28 30 33 36 39 43	1N2989B&RB 1N2990B&RB 1N2991B&RB 1N2992B&RB 1N2993B&RB	MZT2988 B MZT2989 B MZT2990 B MZT2992 B MZT2993 B	MZT3324 B MZT3325 B MZT3326 B MZT3327 B MZT3328 B	1N2823B&RB 1N2824B&RB 1N2825B&RB 1N2826B&RB 1N2827B&RB	1N3324B&RB 1N3325B&RB 1N3326B&RB 1N3327B&RB 1N3328B&RB
47 50 51 52 56 60 62 68	1N2996B&RB 1N2997B&RB 1N2998B&RB 1N2999B&RB 1N3000B&RB 1N3001B&RB	MZT2995 B MZT2996 B MZT2997 B MZT2998 B MZT2999 B MZT3000 B MZT3001 B	MZT3330 B MZT3331 B MZT3332 B MZT3333 B MZT3334 B	1N2829B&RB 1N2831B&RB 1N2832B&RB	1N3330B&RB 1N3332B&RB 1N3334B&RB 1N3335B&RB 1N3336B&RB
75 82 87 91 100 105 110	1N3002B&RB 1N3003B&RB 1N3004B&RB 1N3005B&RB 1N3007B&RB	MZT3002 B MZT3003 B MZT3004 B MZT3005 B MZT3006 B MZT3007 B	MZT3337 B MZT3338 B MZT3339 B MZT3340 B MZT3341 B MZT3342 B	1N2835B&RB 1N2836B&RB 1N2837B&RB 1N2838B&RB 1N2840B&RB	1N3337B&RB 1N3338B&RB 1N3339B&RB 1N3340B&RB 1N3342B&RB
120 130 140 150 160 170 175 180 200	1N3008B&RB 1N3009B&RB 1N3011B&RB 1N3012B&RB 1N3014B&RB 1N3015B&RB	MZT3008 B MZT3009 B MZT3010 B MZT3011 B MZT3012 B MZT3014 B MZT3015 B	MZT3343 B MZT3344 B MZT3345 B MZT3347 B MZT3348 B MZT3349 B MZT3350 B	1N2841B&RB 1N2842B&RB 1N2843B&RB 1N2844B&RB 1N2845B&RB 1N2846B&RB	1N3343B&RB 1N3344B&RB 1N3345B&RB 1N3346B&RB 1N3347B&RB 1N3349B&RB 1N3350B&RB

NOTES

- The Zener Voltage is measured at approximately 1/4 the rated power, with the following exceptions: the 1N4678-4717 is measured with  $I_{ZT} = 50 \mu\text{A}$ ; the 1N4614/1N4099 is measured with  $I_{ZT} = 250 \mu\text{A}$ ; the 1N4370/1N746 and the 1N5221-5242 are measured with  $I_{ZT} = 20 \text{mA}$ ; the 1N5985A-6012A is measured with  $I_{ZT} = 5.0 \text{mA}$ ; 1N6013A-6023A is measured with  $I_{ZT} = 2.0 \text{mA}$ ; 1N6024-6025 is measured with  $I_{ZT} = 1.0 \text{mA}$ .

- Contact your Motorola representative for information on intermediate voltages and tighter tolerances.

Tolerances

- No suffix =  $\pm 5\%$
- A Suffix =  $\pm 10\%$  — with guaranteed limits on  $V_Z$ ,  $V_F$ , and  $I_R$  only  
B suffix =  $\pm 5\%$   
C suffix =  $\pm 2\%$   
D suffix =  $\pm 1\%$
- MLL4370/1N4370/1N746 series:  
No suffix =  $\pm 10\%$   
A suffix =  $\pm 5\%$   
MLL957/1N957 series:  
A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$

Military parts in 1N4370/746/962 series and standard 1N987-1N992 supplied in DO-7. Military parts in 1N4370/746/962 are also available in the cost effective DO-204AH (DO-35) package as the -1 version. This version can be ordered by inserting a 1 between the part number and the JAN, JTX or JTXV suffix, i.e. 1N746A1JAN. MIL-STD 19500/117 and 127 state the -1 version is a direct substitute for the non -1 version. The -1 versions appear on MIL-STD 701 as the preferred parts for new designs. Military parts in 1N4614, 1N4099 and 1N5518A series supplied in DO-7.

- No suffix =  $\pm 10\%$  with guaranteed limits on  $V_Z$ ,  $V_F$  and  $I_R$  only.  
A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$
- No suffix =  $\pm 10\%$   
A suffix =  $\pm 5\%$
- 1N3821 series: No suffix =  $\pm 10\%$   
A suffix =  $\pm 5\%$   
1N3016 series: A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$
- A suffix =  $\pm 10\%$  C suffix =  $\pm 2\%$   
B suffix =  $\pm 5\%$  D suffix =  $\pm 1\%$
- A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$   
Exception:  
1N3993-1N4000: No suffix =  $\pm 10\%$   
A suffix =  $\pm 5\%$
- A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$
- RA and RB = Reverse Polarity Types Available
- A suffix =  $\pm 10\%$   
B suffix =  $\pm 5\%$
- Supplied in 8 mm Tape and Reel only  
"T1" Suffix Cathode Facing Sprocket Holes  
"T2" Suffix Anode Facing Sprocket Holes  
Specify suffix when ordering.
- Supplied in 12 mm Tape and Reel only  
"T1" Suffix, Cathode Facing Sprocket Holes  
"T2" Suffix, Anode Facing Sprocket Holes  
Specify suffix when ordering.
- All devices are  $\pm 5\%$
- Available in 8 mm tape and reel, both T1 and T2 options.
- Supplied tape and reeled only, specify "RL" suffix when ordering.

\* See Notes