

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	1N2977B&RB	MZT2977 B	MZT3312 B	1N2811B&RB	1N3312B&RB
14	1N2978B&RB	MZT2978 B	MZT3313 B	1N2812B&RB	1N3313B&RB
15	1N2979B&RB	MZT2979 B	MZT3314 B	1N2813B&RB	1N3314B&RB
16	1N2980B&RB	MZT2980 B	MZT3315 B	1N2814B&RB	1N3315B&RB
17			MZT3316 B	1N2815B&RB	1N3316B&RB
18	1N2982B&RB	MZT2981 B	MZT3317 B	1N2816B&RB	1N3317B&RB
19	1N2983B&RB	MZT2982 B	MZT3318 B	1N2817B&RB	1N3318B&RB
20	1N2984B&RB	MZT2983 B	MZT3319 B	1N2818B&RB	1N3319B&RB
22	1N2985B&RB	MZT2984 B	MZT3320 B	1N2819B&RB	1N3320B&RB
24	1N2986B&RB	MZT2986 B	MZT3321 B	1N2820B&RB	1N3321B&RB
25			MZT3322 B	1N2821B&RB	1N3322B&RB
27	1N2988B&RB	MZT2987 B	MZT3323 B	1N2822B&RB	1N3323B&RB
28					
30	1N2989B&RB	MZT2988 B	MZT3324 B	1N2823B&RB	1N3324B&RB
33	1N2990B&RB	MZT2989 B	MZT3325 B	1N2824B&RB	1N3325B&RB
36	1N2991B&RB	MZT2990 B	MZT3326 B	1N2825B&RB	1N3326B&RB
39	1N2992B&RB	MZT2992 B	MZT3327 B	1N2826B&RB	1N3327B&RB
43	1N2993B&RB	MZT2993 B	MZT3328 B	1N2827B&RB	1N3328B&RB
47	1N2996B&RB	MZT2995 B	MZT3330 B	1N2829B&RB	1N3330B&RB
50		MZT2996 B	MZT3331 B		
51	1N2997B&RB	MZT2997 B	MZT3332 B	1N2831B&RB	1N3332B&RB
52		MZT2998 B	MZT3333 B		1N3334B&RB
56	1N2999B&RB	MZT2999 B	MZT3334 B	1N2832B&RB	
60					1N3335B&RB
62	1N3000B&RB	MZT3000 B	MZT3335 B	1N2833B&RB	1N3336B&RB
68	1N3001B&RB	MZT3001 B	MZT3336 B	1N2834B&RB	
75	1N3002B&RB	MZT3002 B	MZT3337 B	1N2835B&RB	1N3337B&RB
82	1N3003B&RB	MZT3003 B	MZT3338 B	1N2836B&RB	1N3338B&RB
87					
91	1N3004B&RB	MZT3004 B	MZT3339 B	1N2837B&RB	1N3339B&RB
100	1N3005B&RB	MZT3005 B	MZT3340 B	1N2838B&RB	1N3340B&RB
105		MZT3006 B	MZT3341 B		
110	1N3007B&RB	MZT3007 B	MZT3342 B	1N2840B&RB	1N3342B&RB
120	1N3008B&RB	MZT3008 B	MZT3343 B	1N2841B&RB	1N3343B&RB
130	1N3009B&RB	MZT3009 B	MZT3344 B	1N2842B&RB	1N3344B&RB
140					1N3345B&RB
150	1N3011B&RB	MZT3010 B	MZT3345 B	1N2843B&RB	1N3346B&RB
160	1N3012B&RB	MZT3011 B	MZT3347 B	1N2844B&RB	1N3347B&RB
170					
175		MZT3012 B	MZT3348 B		
180	1N3014B&RB	MZT3014 B	MZT3349 B	1N2845B&RB	1N3349B&RB
200	1N3015B&RB	MZT3015 B	MZT3350 B	1N2846B&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