

TYPE	MATERIAL	REPLACEMENT	PAGE NUMBER	IDENTIFICATION	RECTIFIERS					ZENER DIODES			
					$V_R$ (volts)	$V_F$ (volts)	$I_O$ (Amps)	$I_R$ (mA)	$I_{surge}$ (Amps)	$V_Z$ (min)	$V_Z$ (nom) * $V_Z$ (max)	Tol $V_Z$ %	$P_D$
					SIGNAL DIODES				REFERENCE DIODES				
					PRV (volts)	$V_F$ @ $I_F$ (volts)	$I_R$	$t_r$ ( $\mu s$ )	TC %/°C	$V_Z$	T (min) °C	T (max) °C	
1N2168	S		2-45	RD						0.001	9.4	-65	200
1N2168A	S		2-45	RD						0.001	9.4	-65	200
1N2169	S		2-45	RD						0.0005	9.4	-65	200
1N2169A	S		2-45	RD						0.0005	9.4	-65	200
1N2170	S		2-45	RD						0.0005	9.4	-65	200
1N2170A	S		2-45	RD						0.0005	9.4	-65	200
1N2171	S		2-45	RD						0.0005	9.4	-65	200
1N2171A	S		2-45	RD						0.0005	9.4	-65	200
1N2172	S			R	50	1.5	50	0.25	525				
1N2173	S			R	100	1.5	50	0.25	525				
1N2174	S			R	200	1.5	50	0.25	525				
1N2175	S			R									
Photosensitive Device; $I_R$ (dark) = 0.5 $\mu A$ @ 50 V, Sensitivity = 0.22 $\mu A/mW/cm^2$													
1N2176	S			R	50	1.1	3.0	0.3	15				
1N2177	S			R	100	1.1	3.0	0.3	15				
1N2178	S			R	150	1.1	3.0	0.3	15				
1N2179	S			R	200	1.1	3.0	0.3	15				
1N2180	S			R	300	1.1	3.0	0.3	15				
1N2181	S			R	400	1.1	3.0	0.3	15				
1N2182	S			R	500	1.1	3.0	0.3	15				
1N2183	S			R	600	1.1	3.0	0.3	15				
1N2184	S			R	50	1.5	3.0	5.0	40				
1N2185	S			R	100	1.5	3.0	5.0	40				
1N2186	S			R	150	1.5	3.0	5.0	40				
1N2187	S			R	200	1.5	3.0	5.0	40				
1N2188	S			R	300	1.5	3.0	5.0	40				
1N2189	S			R	400	1.5	3.0	5.0	40				
1N2190	S			R	500	1.5	3.0	5.0	40				
1N2191	S			R	600	1.5	3.0	5.0	40				
1N2192	S			R	800	1.5	3.0	5.0	40				
1N2193	S			R	1000	1.5	3.0	5.0	40				
1N2194	S			R	50	1.25	6.0	10	100				
1N2195	S			R	100	1.25	6.0	10	100				
1N2196	S			R	150	1.25	6.0	10	100				
1N2197	S			R	200	1.25	6.0	10	100				
1N2198	S			R	300	1.25	6.0	10	100				
1N2199	S			R	400	1.25	6.0	10	100				
1N2200	S			R	500	1.25	6.0	10	100				
1N2201	S			R	600	1.25	6.0	10	100				
1N2202	S			R	800	1.25	6.0	10	100				
1N2203	S			R	1000	1.25	6.0	10	100				
1N2204	S			R	50	1.25	12	10	200				
1N2205	S			R	100	1.25	12	10	200				
1N2206	S			R	150	1.25	12	10	200				
1N2207	S			R	200	1.25	12	10	200				
1N2208	S			R	300	1.25	12	10	200				
1N2209	S			R	400	1.25	12	10	200				
1N2210	S			R	500	1.25	12	10	200				
1N2211	S			R	600	1.25	12	10	200				
1N2212	S			R	800	1.25	12	10	200				
1N2213	S	1N3827A	2-24	ZD	1000	1.25	12	10	200		5.6*	10	1.0W
1N2214	S			R									
1N2217	S			R	50		1.5	0.003	20				
1N2218	S			R	500	1.2	0.4	0.003	20				
1N2219	S			R	500		1.5	0.003	20				
1N2220	S			R	600	1.2	0.4	0.003	20				
1N2221	S			R	600		1.5	0.003	20				
1N2222	S			R	800	1.2	0.3	0.003	20				
1N2222A	S			R	800	1.2	0.3	0.003	20				
1N2223	S			R	800		1.0	0.003	20				
1N2223A	S			R	800		1.0	0.003	20				
1N2224	S			R	1000	1.2	0.3	0.003	20				
1N2224A	S			R	1000	1.2	0.3	0.003	20				
1N2225	S			R	1000		1.0	0.003	20				
1N2225A	S			R	1000		1.0	0.003	20				
1N2226	S			R	1200	1.2	0.3	0.003	20				
1N2226A	S			R	1200	1.2	0.3	0.003	20				
1N2227	S			R	1200		1.0	0.003	20				
1N2227A	S			R	1200		1.0	0.003	20				
1N2228	S			R	50	1.2	1.0	0.003	100				
1N2228A	S			R	50	1.2	1.6	0.003	100				
1N2229	S			R	50		5.0	0.003	100				
1N2229A	S			R	50		5.0	0.003	100				
1N2230	S			R	200	1.2	1.0	0.003	100				
1N2230A	S			R	200	1.2	1.6	0.003	100				
1N2231	S			R	200		5.0	0.003	100				
1N2231A	S			R	200		5.0	0.003	100				
1N2232	S			R	300	1.2	1.0	0.003	100				
1N2232A	S			R	300	1.2	1.6	0.003	100				
1N2233	S			R	300		5.0	0.003	100				
1N2233A	S			R	300		5.0	0.003	100				
1N2234	S			R	400	1.2	1.0	0.003	100				
1N2234A	S			R	400	1.2	1.6	0.003	100				

R—Rectifier, RD—Reference Diode, ZD—Zener Diode, GP—General Purpose, HC—High Conductance ( $\geq 20$  mA @  $\leq 1$  V), HS—High Speed Switch (Max  $t_r < 0.3 \mu s$ ), CS—High Conductance, High Speed Switch, MS—Medium Speed Switch, PA—Parametric Amplifier, SP—Special Purpose.

— Reference Diodes —

Type Number	Max Voltage Change $\Delta V$ Volts	Temperature Coefficient %/°C For Reference	Max Dynamic Impedance $Z_{ZT}$ Ohms	Power Dissipation P mW	Case
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**TABLE 22**

$V_Z = 9.4 V \pm 0.4 V$  ( $\pm 0.2 V$  Suffix "A")  
 at  $I_{ZT} = 10 mA$   
 Test Temperatures: ③(-55, 0, 25, 75, 125, 185)  
 ④(-55, 0, 25, 75, 125)  
 ⑤(0, 25, 70)

1N2163, A	0.033⑤	0.005	15	750	52
1N2164, A	0.086④	0.005	15	750	52
1N2165, A	0.115③	0.005	15	750	52
1N2166, A	0.007⑤	0.001	15	750	52
1N2167, A	0.017④	0.001	15	750	52
1N2168, A	0.023③	0.001	15	750	52
1N2169, A	0.004④	0.0005	15	750	52
1N2170, A	0.009⑤	0.0005	15	750	52
1N2171, A	0.012③	0.0005	15	750	52

**TABLE 23**

$V_Z = 11.7 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: 0, 25, 75°C

1N941	0.088	0.01	30	†250②	51
1N942	0.044	0.005	30	†250②	51
1N943	0.018	0.002	30	†250②	51
1N944	0.009	0.001	30	†250②	51
1N945	0.004	0.0005	30	†250②	51
1N3580	0.088	0.01	25	750②	52
1N3581	0.044	0.005	25	750②	52
1N3582	0.018	0.002	25	750②	52

**TABLE 24**

$V_Z = 11.7 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, 0, +25, +75, +100°C

1N941A	0.181	0.01	30	†250②	51
1N942A	0.090	0.005	30	†250②	51
1N943A	0.036	0.002	30	†250②	51
1N944A	0.018	0.001	30	†250②	51
1N945A	0.009	0.0005	30	†250②	51
1N3580A	0.181	0.01	25	750②	52
1N3581A	0.090	0.005	25	750②	52
1N3582A	0.036	0.002	25	750②	52

**TABLE 25**

$V_Z = 11.7 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, 0, +25, +75, +100, +150°C

1N941B	0.239	0.01	30	†250②	51
1N942B	0.120	0.005	30	†250②	51
1N943B	0.047	0.002	30	†250②	51
1N944B	0.024	0.001	30	†250②	51
1N945B	0.012	0.0005	30	†250②	51
1N3580B	0.239	0.01	25	750②	52
1N3581B	0.120	0.005	25	750②	52
1N3582B	0.048	0.002	25	750②	52

Type Number	Max Voltage Change $\Delta V$ Volts	Temperature Coefficient %/°C For Reference	Max Dynamic Impedance $Z_{ZT}$ Ohms	Power Dissipation P mW	Case
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**TABLE 26**

$V_Z = 12.4 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N1736	0.100	0.01	40	400①	41-3
1N1736A	0.050	0.005	40	400①	41-3

**TABLE 27**

$V_Z = 18.6 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N1737	0.150	0.01	60	600①	41-5
1N1737A	0.075	0.005	60	600①	41-5

**TABLE 28**

$V_Z = 20.4 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N2767	0.158	0.005	60	600①	41-7
1N2767A	0.079	0.0025	60	600①	41-7

**TABLE 29**

$V_Z = 24.8 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N1738	0.200	0.01	80	800①	41-5
1N1738A	0.100	0.005	80	800①	41-5

**TABLE 30**

$V_Z = 27.2 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N2768	0.210	0.005	80	800①	41-7
1N2768A	0.105	0.0025	80	800①	41-7

**TABLE 31**

$V_Z = 31.0 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N1739	0.250	0.01	100	1000①	41-4
1N1739A	0.125	0.005	100	1000①	41-4

**TABLE 32**

$V_Z = 34.0 V \pm 5%$  at  $I_{ZT} = 7.5 mA$   
 Test Temperatures: -55, +25, +100°C

1N2769	0.265	0.005	100	1000①	41-1
1N2769A	0.132	0.0025	100	1000①	41-1

①  $T_J = -65$  to  $+150^\circ C$

②  $T_J = -65$  to  $+175^\circ C$

† The indicated power rating is recommended for conservative design limits in critical high reliability applications. Registered power ratings vary from 250 mW to 500 mW. All devices indicated are supplied in the 400 mW glass package.