

**1N1651-1N1749**

TYPE	MATERIAL	REPLACEMENT	PAGE NUMBER	IDENTIFICATION	RECTIFIERS					ZENER DIODES			
					V <sub>R</sub> (volts)	V <sub>F</sub> (volts)	I <sub>O</sub> (Amps)	I <sub>R</sub> (mA)	I <sub>surge</sub> (Amps)	V <sub>Z</sub> (min)	V <sub>Z</sub> (nom) *	Tol V <sub>Z</sub> %	P <sub>D</sub>
					SIGNAL DIODES					REFERENCE DIODES			
					PRV (volts)	V <sub>F</sub> @ I <sub>F</sub> (volts)	I <sub>R</sub>	t <sub>r</sub> (μs)	TC %/°C	V <sub>Z</sub>	T (min) °C	T (max) °C	
1N1651	S			R	400	0.5	0.25	0.3	15				
1N1652	S			R	500	0.5	0.25	0.3	15				
1N1653	S			R	600	0.5	0.25	0.3	15				
1N1660	S	MR1210SB	3-46	R	50		160	40					
1N1661	S	MR1211SB	3-46	R	100		160	40					
1N1662	S	MR1212SB	3-46	R	150		160	40					
1N1663	S	MR1213SB	3-46	R	200		160	40					
1N1664	S	MR1215SB	3-46	R	300		160	40					
1N1665	S	MR1217SB	3-46	R	400		160	40					
1N1666	S			R	500		160	40					
1N1670	S			R	50		240	50					
1N1671	S			R	100		240	50					
1N1672	S			R	150		240	50					
1N1673	S			R	200		240	50					
1N1674	S			R	300		240	50					
1N1675	S			R	400		240	50					
1N1676	S			R	500		240	50					
1N1680	S			R	150	1.1	50	25	700				
1N1681	S			R	250	1.1	50	25	700				
1N1682	S			R	300	1.1	50	25	700				
1N1683	S			R	350	1.1	50	25	700				
1N1684	S			R	400	1.1	50	25	700				
1N1685	S			R	450	1.1	50	25	700				
1N1686	S			R	500	1.1	50	25	700				
1N1687	S			R	600	1.1	50	25	700				
1N1688	S			R	700	1.1	50	25	700				
1N1689	S			R	800	1.1	50	25	700				
1N1690	S			R	900	1.1	50	25	700				
1N1691	S			R	1000	1.1	50	25	700				
1N1692	S	1N4002	3-24	R	100	0.6	0.25	0.5	20				
1N1693	S	1N4003	3-24	R	200	0.6	0.25	0.5	20				
1N1694	S	1N4004	3-24	R	300	0.6	0.25	0.5	20				
1N1695	S	1N4004	3-24	R	400	0.6	0.25	0.5	20				
1N1696	S	1N4005	3-24	R	500	0.6		0.5	20				
1N1697	S	1N4005	3-24	R	600	0.6		0.5	20				
1N1698	S			R	6600	33	0.062						
1N1699	S			R	10K	37	0.058						
1N1700	S			R	12K	45	0.05						
1N1701	S	1N4001	3-24	R	50	1.3	0.3	0.2	8.0				
1N1702	S	1N4002	3-24	R	100	1.3	0.3	0.2	8.0				
1N1703	S	1N4003	3-24	R	200	1.3	0.3	0.2	8.0				
1N1704	S	1N4004	3-24	R	300	1.3	0.3	0.2	8.0				
1N1705	S	1N4004	3-24	R	400	1.3	0.3	0.2	8.0				
1N1706	S	1N4005	3-24	R	500	1.3	0.3	0.2	8.0				
1N1707	S	1N4001	3-24	R	50	1.15	0.5	0.2	10				
1N1708	S	1N4002	3-24	R	100	1.15	0.5	0.2	10				
1N1709	S	1N4003	3-24	R	200	1.15	0.5	0.2	10				
1N1710	S	1N4004	3-24	R	300	1.15	0.5	0.2	10				
1N1711	S	1N4004	3-24	R	400	1.15	0.5	0.2	10				
1N1712	S	1N4005	3-24	R	500	1.15	0.5	0.2	10				
1N1730	S	1N4007	3-24	R	1000	5.0		0.1	2.5				
1N1730A	S			R	1000		0.35		6.0				
1N1731	S		3-78	R	1500	5.0		0.1	2.5				
1N1731A	S			R	1500		0.35		6.0				
1N1732	S		3-78	R	2000	9.0		0.1	2.5				
1N1732A	S			R	2000		0.35		6.0				
1N1733	S		3-78	R	3000	12		0.1	2.5				
1N1733A	S			R	3000		0.35		6.0				
1N1734	S		3-78	R	5000	18		0.1	2.5				
1N1734A	S			R	5000		0.35		6.0				
1N1735	S		2-45	RD					0.01	6.2	-55	100	
1N1736	S		2-45	RD					0.01	12.4	-55	100	
1N1736A	S		2-45	RD					0.005	12.4	-55	100	
1N1737	S		2-45	RD					0.01	18.6	-55	100	
1N1737A	S		2-45	RD					0.005	18.6	-55	100	
1N1738	S		2-45	RD					0.01	24.8	-55	100	
1N1738A	S		2-45	RD					0.005	24.8	-55	100	
1N1739	S		2-45	RD					0.01	31.0	-55	100	
1N1739A	S		2-45	RD					0.005	31.0	-55	100	
1N1740	S		2-45	RD					0.01	37.2	-55	100	
1N1740A	S		2-45	RD					0.005	37.2	-55	100	
1N1741	S		2-45	RD					0.01	43.4	-55	100	
1N1741A	S		2-45	RD					0.005	43.4	-55	100	
1N1742	S		2-45	RD					0.01	49.6	-55	100	
1N1742A	S		2-45	RD					0.005	49.6	-55	100	
1N1743	S	1N2974A	2-19	ZD						10*	5.0	10W	
1N1744	S	1N4740	2-29	ZD						10*	10	1.0W	
1N1745	S			R	1500	15	0.32	0.2	3.5				
1N1746	S			R	1500	7.5	0.5	0.2	3.5				
1N1747	S			R	1800	18	0.31	0.2	3.5				
1N1748	S			R	1800	9.0	0.38	0.2	3.5				
1N1749	S			R	2400	24	0.37	0.2	3.5				

R—Rectifier, RD—Reference Diode, ZD—Zener Diode, GP—General Purpose, HC—High Conductance (≥ 20 mA @ ≤ 1 V), HS—High Speed Switch (Max t<sub>r</sub> < 0.3 μs), 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**

$V_Z = 9.4 \text{ V} \pm 0.4 \text{ V}$  ( $\pm 0.2 \text{ V}$  Suffix "A")  
 at  $I_{ZT} = 10 \text{ mA}$   
 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**

$V_Z = 11.7 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 11.7 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 11.7 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 12.4 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 18.6 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 20.4 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 24.8 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 27.2 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 31.0 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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**

$V_Z = 34.0 \text{ V} \pm 5\%$  at  $I_{ZT} = 7.5 \text{ mA}$   
 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  $T_J = -65 \text{ to } +150^\circ\text{C}$

②  $T_J = -65 \text{ to } +175^\circ\text{C}$

† 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.