T-11-19

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

1N3016A thru 1N3051A
See Page 4-21

1N3305A thru 1N3350A
6.8V thru 200V

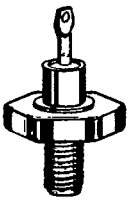
1N4549A thru 1N4556A
3.9V thru 7.5V

ZENER DIODES

Units are available with anode-to-case and cathode-to-case connections (standard and reverse polarity). For reverse polarity, add suffix "R" to type number.

50 WATTS
ZENER DIODES

MAXIMUM RATINGS
Junction and Storage Temperature: −65°C to +175°C.
DC Power Dissipation: 50 Watts. (Derate 0.5 W/°C above 75°C).
TOLERANCE DESIGNATION: The type numbers shown have a standard tolerance of ±10% on the nominal zener voltage. Add suffix "B" for ±5% units. (2% and 1% tolerance also available.)



CASE 58-01
(stud package)
METAL

4

1N3305A thru 1N3350A, 1N4549A thru 1N4556A

ELECTRICAL CHARACTERISTICS (T_C = 30°C unless otherwise specified, V_F = 1.5 V max @ 10 A on all types.)

50 Watt Case 58	Nominal Zener Voltage @ I_{ZT} (V_Z) Volts	Test Current (I_{ZT}) mA	Max Zener Impedance		Max DC Zener Current 75°C Case Temp (I_{ZM}) mA	Reverse* Leakage Current			Typical Zener Voltage Temp. Coeff. %/°C
			Z_{ZT} @ I_{ZT} ohms	Z_{ZK} @ I_{ZK} = 5mA ohms		I_RMax (μA)	V_{R1}	V_{R2}	
1N4549A	3.9	3200	0.16	400	11900	150	0.5	0.5	-.025
1N4550A	4.3	2900	0.16	500	10650	150	0.5	0.5	-.025
1N4551A	4.7	2650	0.12	600	9700	100	1.0	1.0	.010
1N4552A	5.1	2450	0.12	650	8900	20	1.0	1.0	.015
1N4553A	5.6	2250	0.12	900	8100	20	1.0	1.0	.030
1N4554A	6.2	2000	0.14	1000	7300	20	2.0	2.0	.040
1N3305A	6.8	1850	0.2	70	6600	150	4.5	4.3	.040
1N4555A	6.8	1850	0.16	200	6650	10	2.0	2.0	.045
1N3306A	7.5	1700	0.3	70	5900	75	5.0	4.7	.045
1N4556A	7.5	1650	0.24	100	6050	10	3.0	3.0	.053
1N3307A	8 2	1500	0.4	70	5200	50	5.4	5.2	.048
1N3308A	9.1	1370	0.5	70	4800	25	6.1	5.7	.051
1N3309A	10	1200	0.6	80	4300	10	6.7	6.3	.055
1N3310A	11	1100	0.8	80	3900	5	8.4	8.0	.060
1N3311A	12	1000	1.0	80	3600	5	9.1	8.6	.065
1N3312A	13	960	1.1	80	3300	5	9.9	9.4	.065
1N3313A	14	890	1.2	80	3000	5	10.6	10.1	.070
1N3314A	15	830	1.4	80	2800	5	11.4	10.8	.070
1N3315A	16	780	1.6	80	2650	5	12.2	11.5	.070
1N3316A	17	740	1 8	80	2500	5	13.0	12.2	.075
1N3317A	18	700	2.0	80	2300	5	13.7	13.0	.075
1N3318A	19	660	2.2	80	2200	5	14.4	13.7	.075
1N3319A	20	630	2.4	80	2100	5	15.2	14.4	.075
1N3320A	22	570	2.5	80	1900	5	16.7	15.8	.080
1N3321A	24	520	2 6	80	1750	5	18.2	17.3	.080
1N3322A	25	500	2.7	90	1550	5	19.0	18.0	.080
1N3323A	27	460	2.8	90	1500	5	20.6	19.4	.085
1N3324A	30	420	3.0	90	1400	5	22.8	21.6	.085
1N3325A	33	380	3.2	90	1300	5	25.1	23.8	.085
1N3326A	36	350	3.5	90	1150	5	27.4	25.9	.085
1N3327A	39	320	4.0	90	1050	5	29.7	28.1	.090
1N3328A	43	290	4.5	90	975	5	32.7	31.0	.090
1N3329A	45	280	4.5	100	930	5	34.2	32.4	.090
1N3330A	47	270	5.0	100	880	5	35.8	33 8	.090
1N3331A	50	250	5.0	100	830	5	38.0	36.0	.090
1N3332A	51	245	5.2	100	810	5	38.8	36.7	.090
1N3333A	52	240	5.5	100	790	5	39.5	37.4	.090
1N3334A	56	220	6	110	740	5	42.6	40.3	.090
1N3335A	62	200	7	120	660	5	47.1	44.6	.090
1N3336A	68	180	8	140	600	5	51.7	49.0	.090
1N3337A	75	170	9	150	540	5	56.0	54.0	.090
1N3338A	82	150	11	160	490	5	62.2	59.0	.090
1N3339A	91	140	15	180	420	5	69.2	65.5	.090
1N3340A	100	120	20	200	400	5	76.0	72.0	.090
1N3341A	105	120	25	210	380	5	79.8	75.6	.095
1N3342A	110	110	30	220	365	5	83.6	79.2	.095
1N3343A	120	100	40	240	335	5	91.2	86.4	.095
1N3344A	130	95	50	275	310	5	98.8	93.6	.095
1N3345A	140	90	60	325	290	5	106.4	100.8	.095
1N3346A	150	85	75	400	270	5	114.0	108.0	.095
1N3347A	160	80	80	450	250	5	121.6	115.2	.095
1N3348A	175	70	85	500	230	5	133.0	126.0	.095
1N3349A	180	68	90	525	220	5	136.8	129.6	.095
1N3350A	200	65	100	600	200	5	152.0	144.0	.100

SPECIAL SELECTIONS AVAILABLE INCLUDE: (See Selector Guide for details)

*V_{R1} — Test Voltage for 5% Tolerance Device

V_{R2} — Test Voltage for 10% Tolerance Device

No Leakage Specified as 20% Tolerance Device

FIGURE 1 — TEMPERATURE CHARACTERISTICS

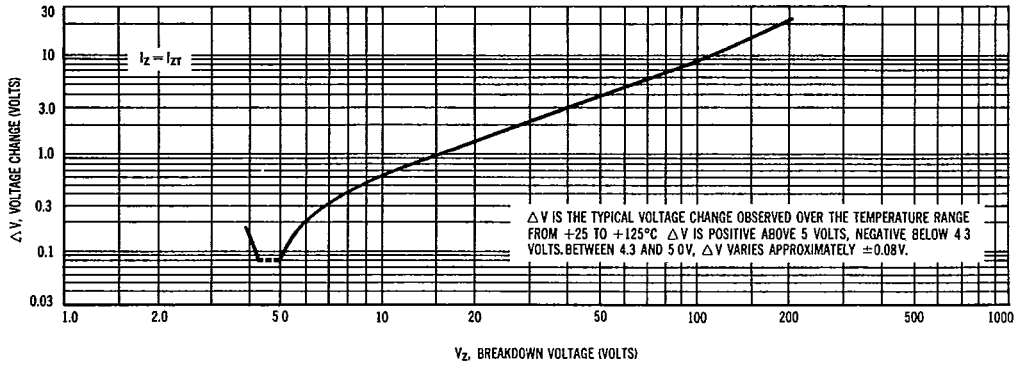


FIGURE 2 — POWER-TEMPERATURE DERATING CURVE

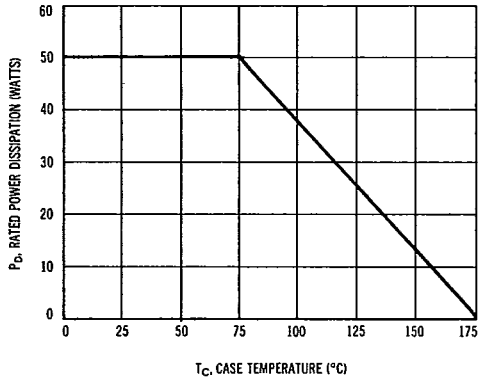


FIGURE 3 — LEAKAGE CURRENT

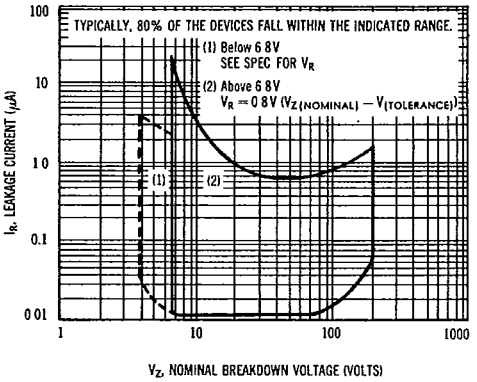
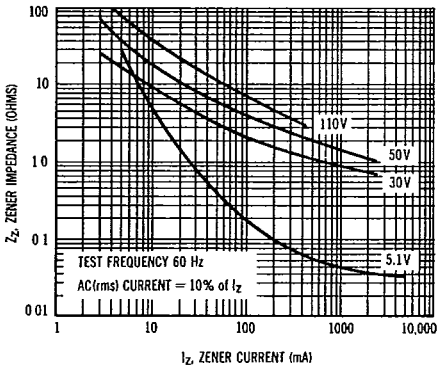
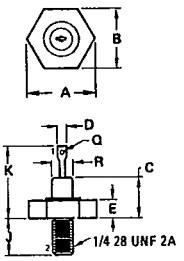


FIGURE 4 — ZENER IMPEDANCE versus ZENER CURRENT



1N3305A thru 1N3350A, 1N4549A thru 1N4556A



STYLE 1:
TERM. 1. CATHODE
2. ANODE
STYLE 2:
TERM. 1. ANODE
2. CATHODE

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	18.92	19.18	0.745	0.755
B	16.94	17.45	0.667	0.687
C	–	11.94	–	0.470
D	3.18	NOM	0.125	NOM
E	2.92	5.08	0.115	0.200
J	10.72	11.51	0.422	0.453
K	–	21.34	–	0.840
Q	1.78	NOM	0.070	NOM
R	–	7.11	–	0.280

CASE 58-01
(stud package)
METAL