

1N2804B THRU 1N2846B

SILICON ZENER DIODES  
50W, 6.8 THRU 200 VOLT  
5% TOLERANCE



TO-3 50 MIL CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 1N2804B series types are silicon Zener diodes manufactured in a hermetically sealed metal case, designed for high reliability industrial applications. Also available in reverse polarity connection (replace "B" suffix with "RB" suffix in part number - ex. 1N2804RB). **The typical lead diameter is 50 mils.**

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_C=75^\circ\text{C}$ )

Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

**SYMBOL**

$P_D$  50  
 $T_J, T_{stg}$  -65 to +175  
 $\theta_{JC}$  2.0

**UNITS**

W  
 $^\circ\text{C}$   
 $^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS:** ( $T_C=30^\circ\text{C}$  unless otherwise noted)  $V_F=1.5\text{V MAX @ } I_F=10\text{A}$  (for all types)

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT ( $T_C=75^\circ\text{C MAX}$ ) $I_{ZM}$	TYPICAL TEMPERATURE COEFFICIENT $\theta_{VZ}$
	MIN	NOM	MAX		$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_R @ V_R$				
	V	V	V	mA	$\Omega$	mA	$\mu\text{A}$	V	mA	$\% / ^\circ\text{C}$	
1N2804B	6.460	6.8	7.140	1850	0.2	70	5.0	150	4.5	6600	0.040
1N2805B	7.125	7.5	7.875	1700	0.3	70	5.0	75	5.0	5900	0.045
1N2806B	7.790	8.2	8.610	1500	0.4	70	5.0	50	5.4	5200	0.048
1N2807B	8.645	9.1	9.555	1370	0.5	70	5.0	25	6.1	4800	0.051
1N2808B	9.500	10	10.500	1200	0.6	80	5.0	10	6.7	4300	0.055
1N2809B	10.450	11	11.550	1100	0.8	80	5.0	5.0	8.4	3900	0.060
1N2810B	11.400	12	12.600	1000	1.0	80	5.0	5.0	9.1	3600	0.065
1N2811B	12.350	13	13.650	960	1.1	80	5.0	5.0	9.9	3300	0.065
1N2812B	13.300	14	14.700	890	1.2	80	5.0	5.0	10.6	3000	0.070
1N2813B	14.250	15	15.750	830	1.4	80	5.0	5.0	11.4	2800	0.070
1N2814B	15.200	16	16.800	780	1.6	80	5.0	5.0	12.2	2650	0.070
1N2815B	16.150	17	17.850	740	1.8	80	5.0	5.0	13.0	2500	0.075
1N2816B	17.100	18	18.900	700	2.0	80	5.0	5.0	13.7	2300	0.075
1N2817B	18.050	19	19.950	660	2.2	80	5.0	5.0	14.4	2200	0.075
1N2818B	19.000	20	21.000	630	2.4	80	5.0	5.0	15.2	2100	0.075
1N2819B	20.900	22	23.100	570	2.5	80	5.0	5.0	16.7	1900	0.080
1N2820B	22.800	24	25.200	520	2.6	80	5.0	5.0	18.2	1750	0.080
1N2821B	23.750	25	26.250	500	2.7	90	5.0	5.0	19.0	1550	0.080
1N2822B	25.650	27	28.350	460	2.8	90	5.0	5.0	20.6	1500	0.085
1N2823B	28.500	30	31.500	420	3.0	90	5.0	5.0	22.8	1400	0.085
1N2824B	31.350	33	34.650	380	3.2	90	5.0	5.0	25.1	1300	0.085
1N2825B	34.200	36	37.800	350	3.5	90	5.0	5.0	27.4	1150	0.085
1N2826B	37.050	39	40.950	320	4.0	90	5.0	5.0	29.7	1050	0.090
1N2827B	40.850	43	45.150	290	4.5	90	5.0	5.0	32.7	975	0.090
1N2828B	42.750	45	47.250	280	4.5	100	5.0	5.0	34.2	930	0.090
1N2829B	44.650	47	49.350	270	5.0	100	5.0	5.0	35.8	880	0.090

R0 (21-March 2013)

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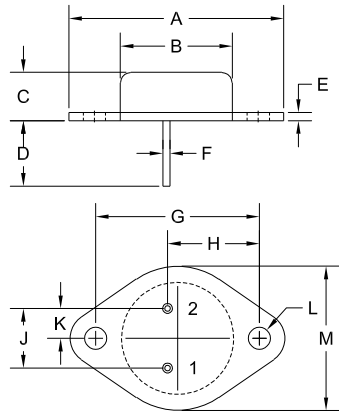
SILICON ZENER DIODES  
50W, 6.8 THRU 200 VOLT  
5% TOLERANCE



ELECTRICAL CHARACTERISTICS - Cont'd: ( $T_C=30^\circ\text{C}$  unless otherwise noted)  $V_F=1.5\text{V MAX @ } I_F=10\text{A}$  (for all types)

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT ( $T_C=75^\circ\text{C MAX}$ )	TYPICAL TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_R @ V_R$	$I_{ZM}$	$\theta_{VZ}$		
	V	V	V	mA	$\Omega$	$\Omega$	$\mu\text{A}$	V	mA	$\%^\circ\text{C}$	
1N2830B	47.500	50	52.500	250	5.0	100	5.0	5.0	38.0	830	0.090
1N2831B	48.450	51	53.550	245	5.2	100	5.0	5.0	38.8	810	0.090
1N2832B	53.200	56	58.800	220	6.0	110	5.0	5.0	42.6	740	0.090
1N2833B	58.900	62	65.100	200	7.0	120	5.0	5.0	47.1	660	0.090
1N2834B	64.600	68	71.400	180	8.0	140	5.0	5.0	51.7	600	0.090
1N2835B	71.250	75	78.750	170	9.0	150	5.0	5.0	56.0	540	0.090
1N2836B	77.900	82	86.100	150	11	160	5.0	5.0	62.2	490	0.090
1N2837B	86.450	91	95.550	140	15	180	5.0	5.0	69.2	420	0.090
1N2838B	95.000	100	105.00	120	20	200	5.0	5.0	76.0	400	0.090
1N2839B	99.750	105	110.25	120	25	210	5.0	5.0	79.8	380	0.095
1N2840B	104.50	110	115.50	110	30	220	5.0	5.0	83.6	365	0.095
1N2841B	114.00	120	126.00	100	40	240	5.0	5.0	91.2	335	0.095
1N2842B	123.50	130	136.50	95	50	275	5.0	5.0	98.8	310	0.095
1N2843B	142.50	150	157.50	85	75	400	5.0	5.0	114.0	270	0.095
1N2844B	152.00	160	168.00	80	80	450	5.0	5.0	121.6	250	0.095
1N2845B	171.00	180	189.00	68	90	525	5.0	5.0	136.8	220	0.095
1N2846B	190.00	200	210.00	65	100	600	5.0	5.0	152.0	200	0.100

TO-3 50 MIL CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Cathode
- 2) Cathode
- Case) Anode

LEAD CODE:

- (Reverse Polarity)
- 1) Anode
- 2) Anode
- Case) Cathode

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.048	0.051	1.22	1.30
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 50 MIL (REV: R0)

R0

R0 (21-March 2013)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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