

### FEATURES

- Silicon planar Zener diodes
- The Zener voltages are graded according to the international E24 standard
- Standard Zener voltage tolerance is  $\pm 5\%$ ; replace “C” with “B” for  $\pm 2\%$  tolerance

<b>PRIMARY CHARACTERISTICS</b>		
PARAMETER	VALUE	UNIT
$V_Z$ range nom.	2.4 to 75	V
Test current $I_{ZT}$	2; 5	mA
$V_Z$ specification	Pulse current	
Int. construction	Single	

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	Device on fiberglass substrate	$P_{tot}$	200	mW
Thermal resistance junction to ambient air	Valid that electrodes are kept at ambient temperature	$R_{thJA}$	650	K/W
Junction temperature		$T_j$	150	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 150	$^\circ\text{C}$
Operating temperature range		$T_{op}$	- 55 to + 150	$^\circ\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)											
PART NUM	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT OF ZENER VOLTAGE	
	$V_Z$ at $I_{ZT1}$			$I_{ZT1}$	$I_{ZT2}$	$I_R$ at $V_R$		$Z_Z$ at $I_{ZT1}$	$Z_{ZK}$ at $I_{ZT2}$	$\alpha_{VZ}$ at $I_{ZT1}$	
	V			mA		$\mu\text{A}$	V	$\Omega$		$10^{-4}/^{\circ}\text{C}$	
	MIN.	NOM.	MAX.			MAX.		TYP.	TYP.	MIN.	MAX.
BZX384B2V4	2.35	2.4	2.45	5	1	50	1	70 ( $\leq 100$ )	275	-9	-4
BZX384B2V7	2.65	2.7	2.75	5	1	20	1	75 ( $\leq 100$ )	300 ( $\leq 600$ )	-9	-3
BZX384B3V0	2.94	3.0	3.06	5	1	10	1	80 ( $\leq 95$ )	325 ( $\leq 600$ )	-8	-3
BZX384B3V3	3.23	3.3	3.37	5	1	5	1	85 ( $\leq 95$ )	350 ( $\leq 600$ )	-8	-3
BZX384B3V6	3.53	3.6	3.67	5	1	5	1	85 ( $\leq 90$ )	375 ( $\leq 600$ )	-7	-3
BZX384B3V9	3.82	3.9	3.98	5	1	3	1	85 ( $\leq 90$ )	400 ( $\leq 600$ )	-6	-1
BZX384B4V3	4.21	4.3	4.39	5	1	3	1	80 ( $\leq 90$ )	410 ( $\leq 600$ )	-5	2
BZX384B4V7	4.61	4.7	4.79	5	1	3	2	50 ( $\leq 80$ )	425 ( $\leq 500$ )	-3	4
BZX384B5V1	5	5.1	5.2	5	1	2	2	40 ( $\leq 60$ )	400 ( $\leq 480$ )	-2	6
BZX384B5V6	5.49	5.6	5.71	5	1	1	2	15 ( $\leq 40$ )	80 ( $\leq 400$ )	-1	7
BZX384B6V2	6.08	6.2	6.32	5	1	3	4	6 ( $\leq 10$ )	40 ( $\leq 150$ )	2	7
BZX384B6V8	6.66	6.8	6.94	5	1	2	4	6 ( $\leq 15$ )	30 ( $\leq 80$ )	3	7
BZX384B7V5	7.35	7.5	7.65	5	1	1	5	6 ( $\leq 15$ )	30 ( $\leq 80$ )	4	7
BZX384B8V2	8.04	8.2	8.36	5	1	0.7	5	6 ( $\leq 15$ )	40 ( $\leq 80$ )	5	8
BZX384B9V1	8.92	9.1	9.28	5	1	0.5	6	6 ( $\leq 15$ )	40 ( $\leq 100$ )	5	8
BZX384B10	9.8	10	10.2	5	1	0.2	7	8 ( $\leq 20$ )	50 ( $\leq 150$ )	5	9
BZX384B11	10.8	11	11.2	5	1	0.1	8	10 ( $\leq 20$ )	50 ( $\leq 150$ )	6	9
BZX384B12	11.8	12	12.2	5	1	0.1	8	10 ( $\leq 25$ )	50 ( $\leq 150$ )	7	9
BZX384B13	12.7	13	13.3	5	1	0.1	8	10 ( $\leq 30$ )	50 ( $\leq 170$ )	7	9
BZX384B15	14.7	15	15.3	5	1	0.05	0.7 $V_{Znom.}$	10 ( $\leq 30$ )	50 ( $\leq 200$ )	8	9.5
BZX384B16	15.7	16	16.3	5	1	0.05	0.7 $V_{Znom.}$	10 ( $\leq 40$ )	50 ( $\leq 200$ )	8	9.5
BZX384B18	17.6	18	18.4	5	1	0.05	0.7 $V_{Znom.}$	10 ( $\leq 45$ )	50 ( $\leq 225$ )	8	10
BZX384B20	19.6	20	20.4	5	1	0.05	0.7 $V_{Znom.}$	15 ( $\leq 55$ )	60 ( $\leq 225$ )	8	10
BZX384B22	21.6	22	22.4	5	1	0.05	0.7 $V_{Znom.}$	20 ( $\leq 55$ )	60 ( $\leq 250$ )	8	10
BZX384B24	23.5	24	24.5	5	1	0.05	0.7 $V_{Znom.}$	25 ( $\leq 70$ )	60 ( $\leq 250$ )	8	10
BZX384B27	26.5	27	27.5	2	0.5	0.05	0.7 $V_{Znom.}$	25 ( $\leq 80$ )	65 ( $\leq 300$ )	8	10
BZX384B30	29.4	30	30.6	2	0.5	0.05	0.7 $V_{Znom.}$	30 ( $\leq 80$ )	70 ( $\leq 300$ )	8	10
BZX384B33	32.3	33	33.7	2	0.5	0.05	0.7 $V_{Znom.}$	35 ( $\leq 80$ )	75 ( $\leq 325$ )	8	10
BZX384B36	35.3	36	36.7	2	0.5	0.05	0.7 $V_{Znom.}$	35 ( $\leq 90$ )	80 ( $\leq 350$ )	10	12
BZX384B39	38.2	39	39.8	2	0.5	0.05	0.7 $V_{Znom.}$	40 ( $\leq 130$ )	80 ( $\leq 350$ )	10	12
BZX384B43	42.1	43	43.9	2	0.5	0.05	0.7 $V_{Znom.}$	45 ( $\leq 150$ )	85 ( $\leq 375$ )	10	12
BZX384B47	46.1	47	47.9	2	0.5	0.05	0.7 $V_{Znom.}$	50 ( $\leq 170$ )	85 ( $\leq 375$ )	10	12
BZX384B51	50	51	52	2	0.5	0.05	0.7 $V_{Znom.}$	60 ( $\leq 180$ )	85 ( $\leq 400$ )	10	12
BZX384B56	54.9	56	57.1	2	0.5	0.05	0.7 $V_{Znom.}$	70 ( $\leq 200$ )	100 ( $\leq 425$ )	10	12
BZX384B62	60.8	62	63.2	2	0.5	0.05	0.7 $V_{Znom.}$	80 ( $\leq 215$ )	100 ( $\leq 450$ )	10	12
BZX384B68	66.6	68	69.4	2	0.5	0.05	0.7 $V_{Znom.}$	90 ( $\leq 240$ )	150 ( $\leq 475$ )	10	12
BZX384B75	73.5	75	76.5	2	0.5	0.05	0.7 $V_{Znom.}$	95 ( $\leq 255$ )	170 ( $\leq 500$ )	10	12

### TYPICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

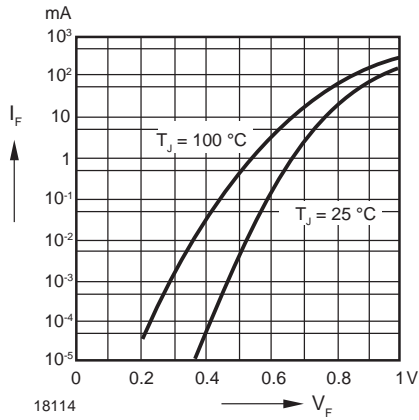


Fig. 1 - Forward characteristics

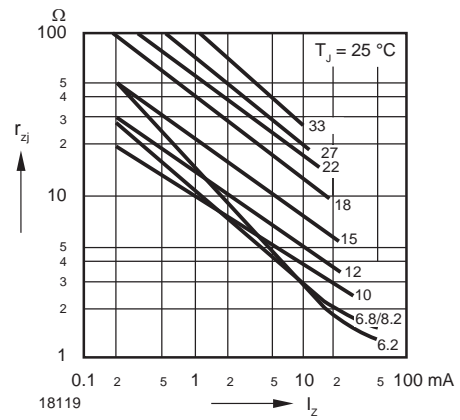


Fig. 4 - Dynamic Resistance vs. Zener Current

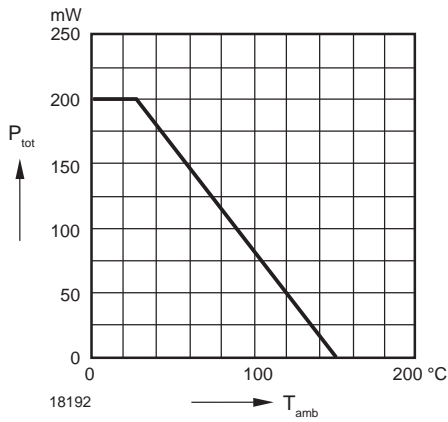


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

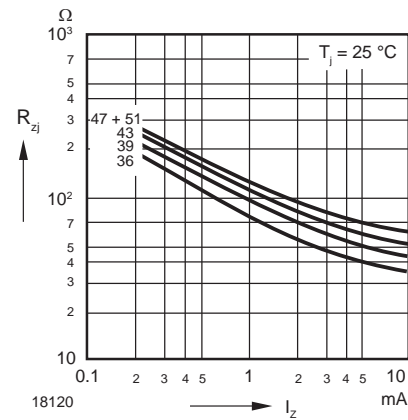


Fig. 5 - Dynamic Resistance vs. Zener Current

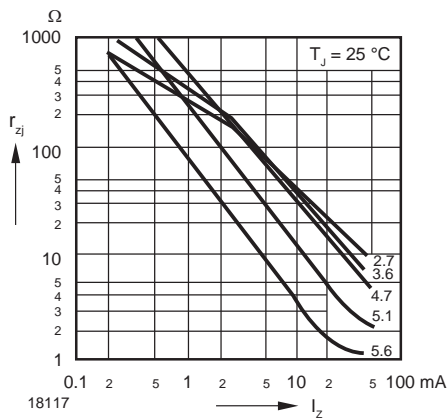


Fig. 3 - Dynamic Resistance vs. Zener Current

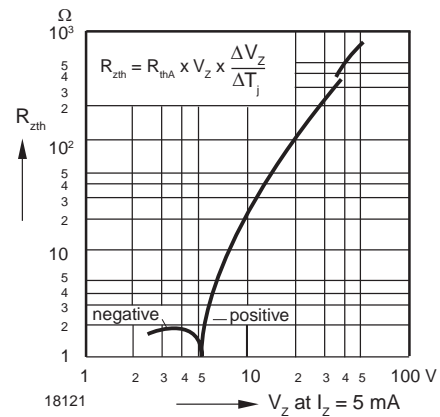


Fig. 6 - Thermal Differential Resistance vs. Zener Voltage

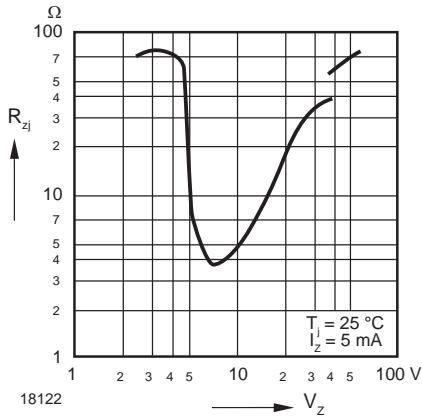


Fig. 7 - Dynamic Resistance vs. Zener Voltage

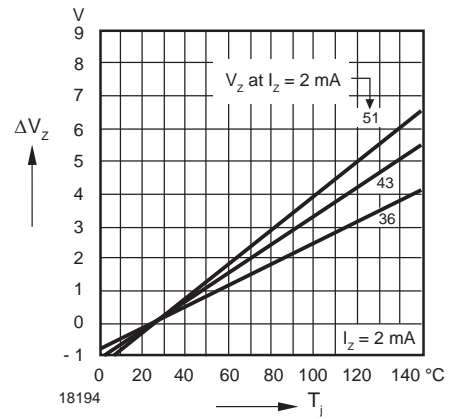


Fig. 10 - Change of Zener Voltage vs. Junction Temperature

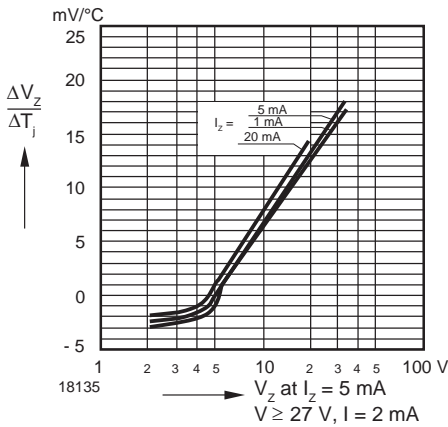


Fig. 8 - Temperature Dependence of Zener Voltage vs. Zener Voltage

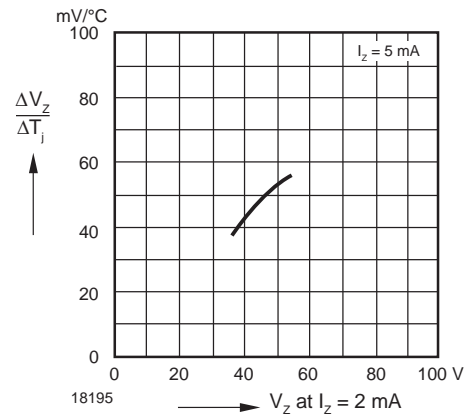


Fig. 11 - Temperature Dependence of Zener Voltage vs. Zener Voltage

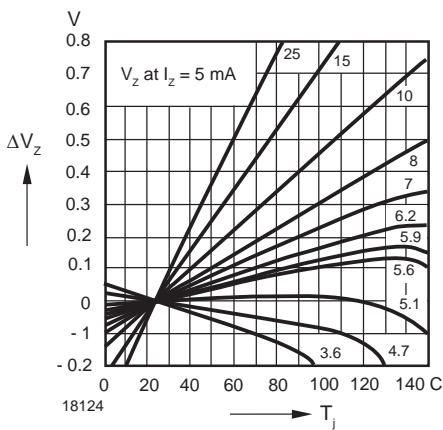


Fig. 9 - Change of Zener Voltage vs. Junction Temperature

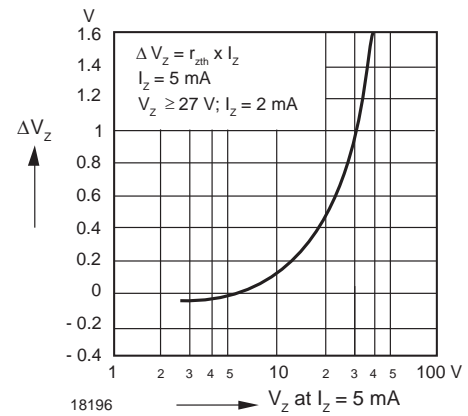


Fig. 12 - Change of Zener Voltage from Turn-on up to the Point of Thermal Equilibrium vs. Zener Voltage

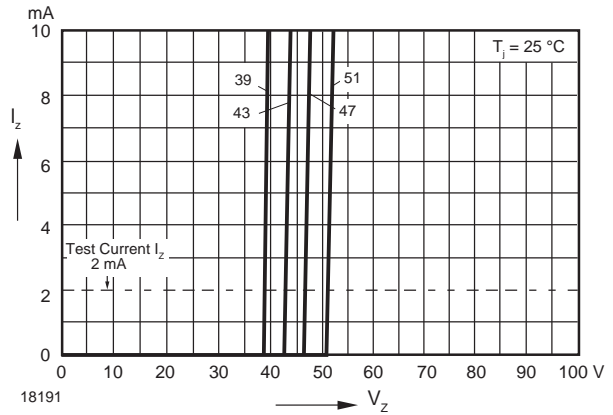
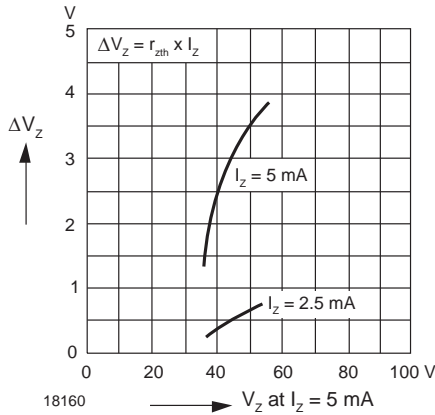


Fig. 13 - Change of Zener Voltage from Turn-on up to the Point of Thermal Equilibrium vs. Zener Voltage

Fig. 16 - Breakdown Characteristics

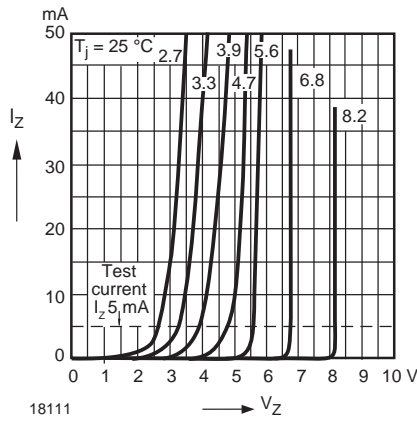


Fig. 14 - Breakdown Characteristics

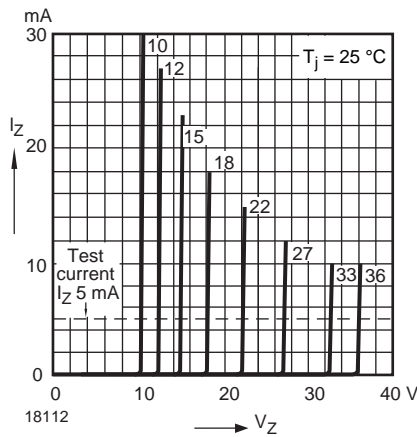
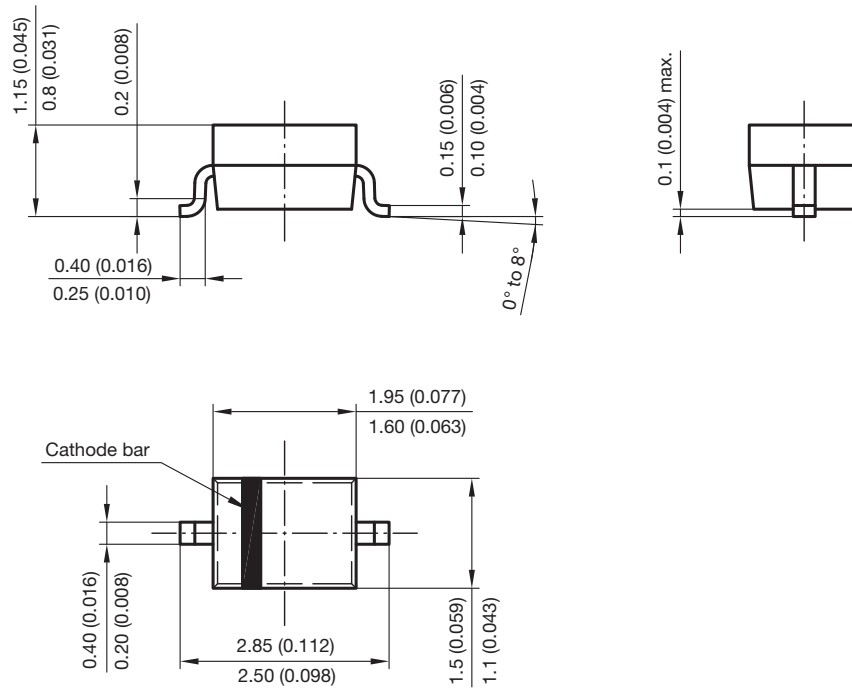


Fig. 15 - Breakdown Characteristics

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**



Foot print recommendation:

