

## SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 2.4 - 39 Volts

**POWER** 200 mWatts

**PACKAGE** SOT-323

### FEATURES

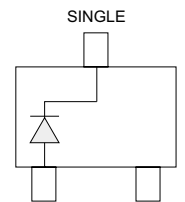
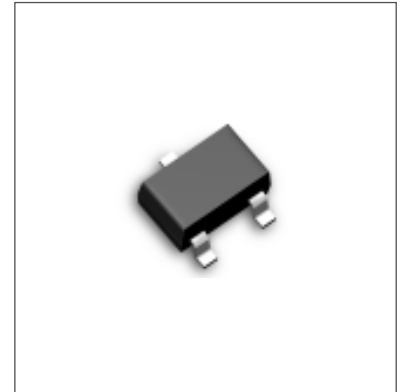
- Planar Die construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes

### MECHANICAL DATA

Case: SOT-323, Plastic

Terminals: Solderable per MIL-STD-202, Method 208

Approx. Weight: 0.008 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation (Notes A) at 25°C	$P_D$	200	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	$I_{FSM}$	2.0	Amps
Operating Junction and Storage Temperature Range	$T_J$	-55 to +150	°C

#### NOTES:

A. Mounted on 5.0mm<sup>2</sup>(.013mm thick) land areas.

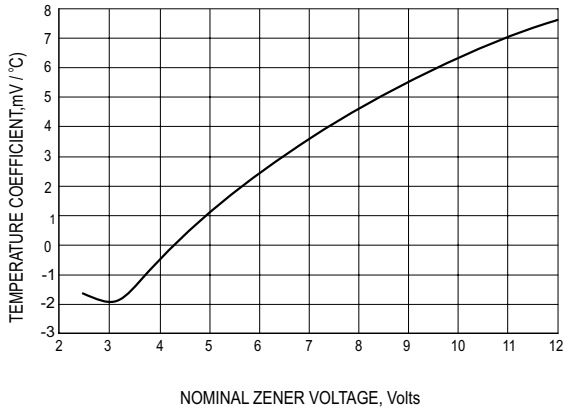
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted) V<sub>F</sub>=1.2V max, I<sub>F</sub>=100mA for all types.

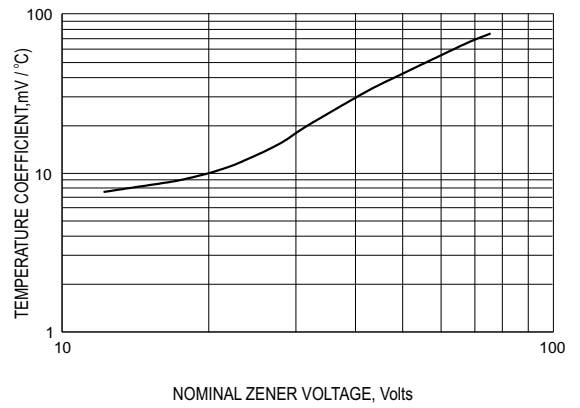
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Package
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
<b>200 mWatts Zener Diodes</b>										
BZX84C2V4W	2.4	2.28	2.52	85	5	600	1	100	1	SOT-323
BZX84C2V7W	2.7	2.5	2.9	83	5	500	1	75	1	SOT-323
BZX84C3W	3	2.8	3.2	95	5	500	1	50	1	SOT-323
BZX84C3V3W	3.3	3.1	3.5	95	5	500	1	25	1	SOT-323
BZX84C3V6W	3.6	3.4	3.8	95	5	500	1	15	1	SOT-323
BZX84C3V9W	3.9	3.7	4.1	95	5	500	1	10	1	SOT-323
BZX84C4V3W	4.3	4	4.6	95	5	500	1	5.0	1	SOT-323
BZX84C4V7W	4.7	4.4	5	78	5	500	1	5.0	2	SOT-323
BZX84C5V1W	5.1	4.8	5.4	60	5	480	1	0.1	0.8	SOT-323
BZX84C5V6W	5.6	5.2	6	40	5	400	1	0.1	1	SOT-323
BZX84C6V2W	6.2	5.8	6.6	10	5	200	1	0.1	2	SOT-323
BZX84C6V8W	6.8	6.4	7.2	8	5	150	1	0.1	3	SOT-323
BZX84C7V5W	7.5	7	7.9	7	5	50	1	0.1	5	SOT-323
BZX84C8V2W	8.2	7.7	8.7	7	5	50	1	0.1	6	SOT-323
BZX84C9V1W	9.1	8.5	9.6	10	5	50	1	0.1	7	SOT-323
BZX84C10W	10	9.4	10.6	15	5	70	1	0.1	7.5	SOT-323
BZX84C11W	11	10.4	11.6	20	5	70	1	0.1	8.5	SOT-323
BZX84C12W	12	11.4	12.7	20	5	90	1	0.1	9	SOT-323
BZX84C13W	13	12.4	14.1	25	5	110	1	0.1	10	SOT-323
BZX84C15W	15	13.8	15.6	30	5	110	1	0.1	11	SOT-323
BZX84C16W	16	15.3	17.1	40	5	170	1	0.1	12	SOT-323
BZX84C18W	18	16.8	19.1	50	5	170	1	0.1	14	SOT-323
BZX84C20W	20	18.8	21.2	50	5	220	1	0.1	15	SOT-323
BZX84C22W	22	20.8	23.3	55	5	220	1	0.1	17	SOT-323
BZX84C24W	24	22.8	25.6	80	5	220	1	0.1	18	SOT-323
BZX84C27W	27	25.1	28.9	80	5	250	1	0.1	20	SOT-323
BZX84C30W	30	28	32	80	5	250	1	0.1	22.5	SOT-323
BZX84C33W	33	31	35	80	5	250	1	0.1	25	SOT-323
BZX84C36W	36	34	38	90	5	250	1	0.1	27	SOT-323
BZX84C39W	39	37	41	90	5	300	1	0.1	29	SOT-323

**NOTE:**

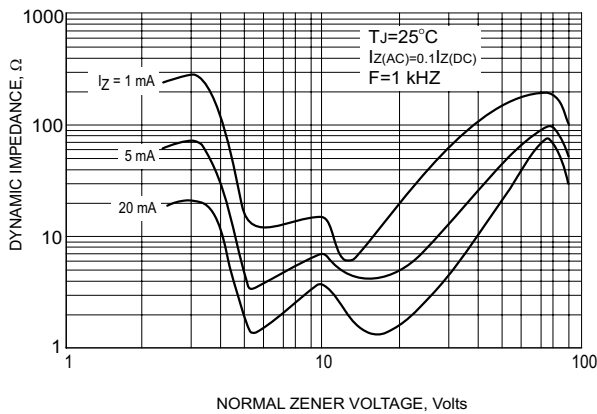
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
  - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
  - B. Matched sets.
3. Zener Voltage (V<sub>Z</sub>) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T<sub>L</sub>) at 30°C, from the diode body.
4. Zener Impedance (Z<sub>Z</sub>) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an AC current having an rms value equal to 10% of the dc zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>.
5. Surge Current (I<sub>R</sub>) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I<sub>ZT</sub>, per JEDEC registration; however, actual device capability is as described in Figure 5.



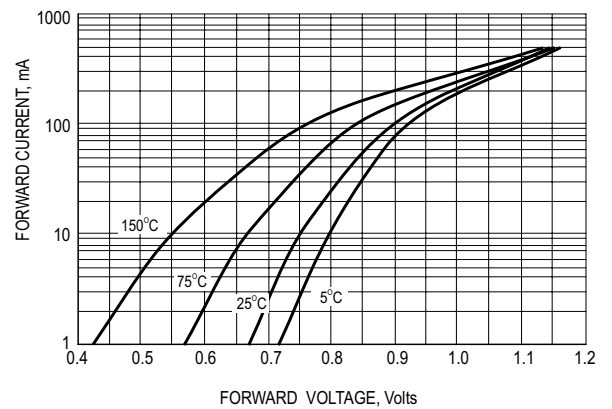
**TYPICAL REVERSE CURRENT**



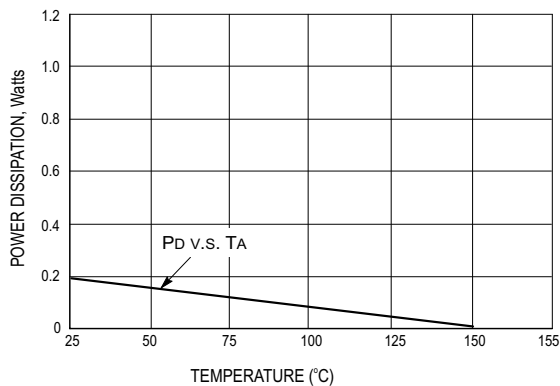
**STEADY STATE POWER DERATING**



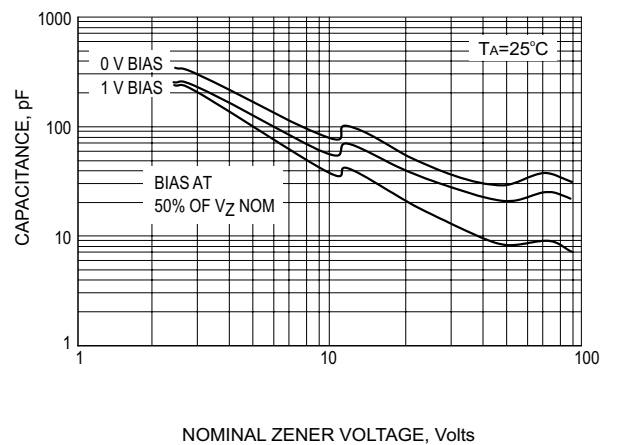
**EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



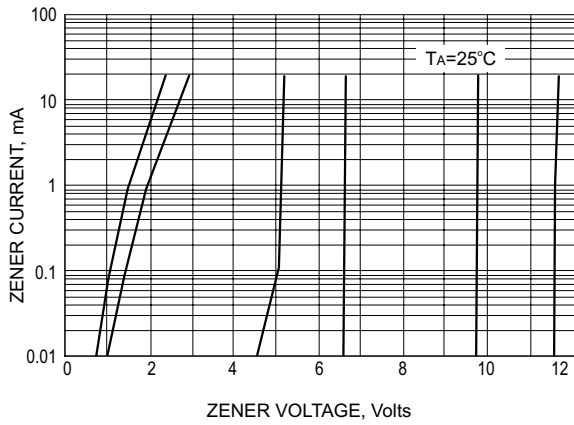
**TYPICAL FORWARD VOLTAGE**



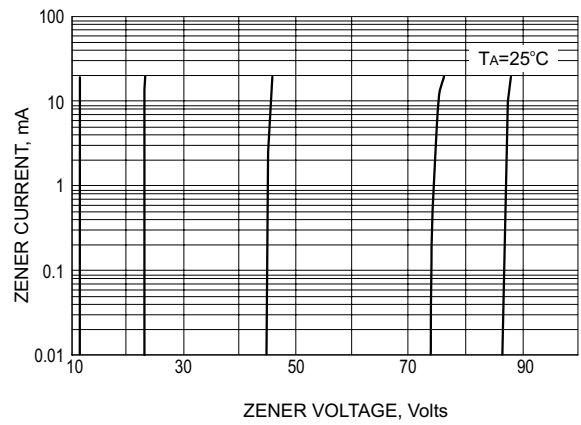
**STEADY STATE POWER DERATING**



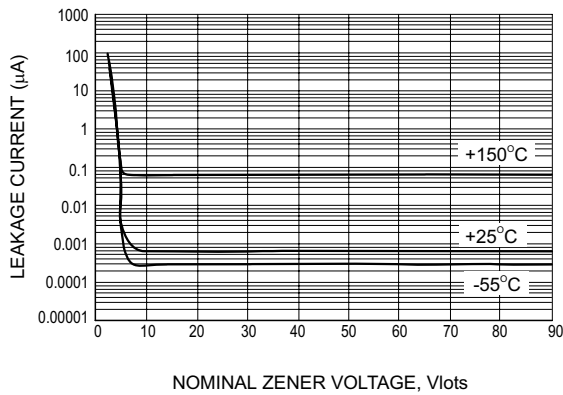
**TYPICAL CAPACITANCE**



ZENER VOLTAGE V.S. ZENER CURRENT

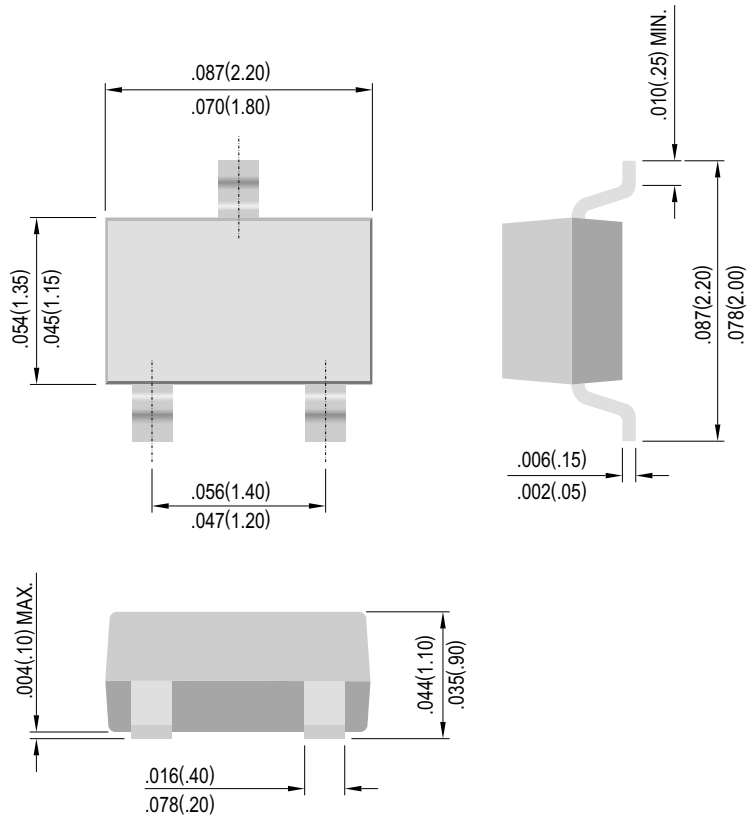


ZENER VOLTAGE V.S. ZENER CURRENT



TYPICAL LEAKGE CURRENT

**SOT-323**



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