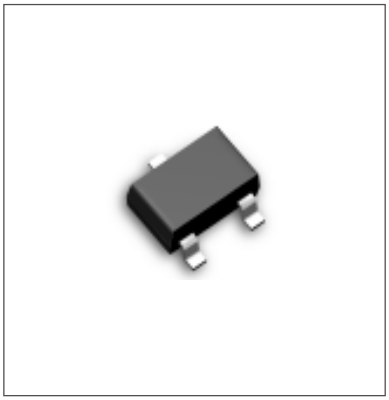
# BZX84C2V4W thru BZX84C39W

## 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



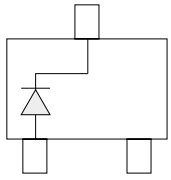
### MECHANICAL DATA

Case: SOT-323, Plastic

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

Approx. Weight: 0.008 gram

SINGLE



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Power Dissipation (Notes A) at 25$^{O}$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 StorageTemperature Range | $T_J$ | -55 to +150 | $^{O}$C |

NOTES:

A. Mounted on 5.0mm2(.013mm thick) land areas.

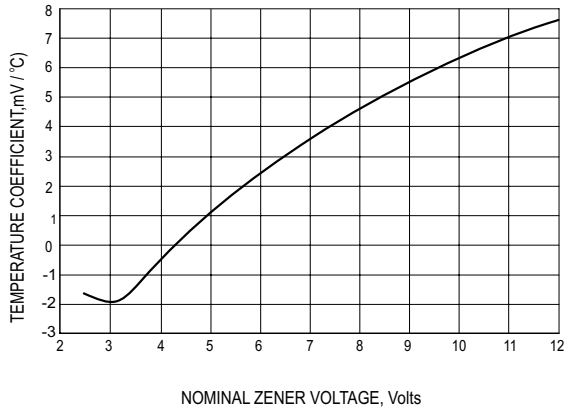
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise noted) $V_F$=1.2V max, $I_F$=100mA for all types.

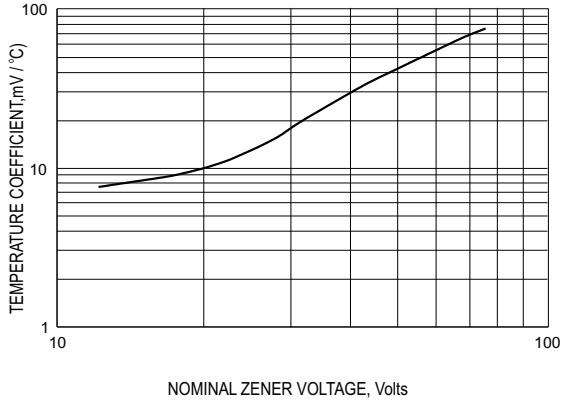
| Part Number | Nominal Zener Voltage | | | Max. Zener Impedance | | | | Max Reverse Leakage Current | | Package |
|---|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ @ $I_{ZT}$ | | | $Z_{ZT}$ @ $I_{ZT}$ | | $Z_{ZK}$ @ $I_{ZK}$ | | $I_R$ @ $V_R$ | | |
| | Nom. V | Min. V | Max. V | Ω | mA | Ω | mA | µA | V | |
| **200 mWatts Zener Diodes** | | | | | | | | | | |
| 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:

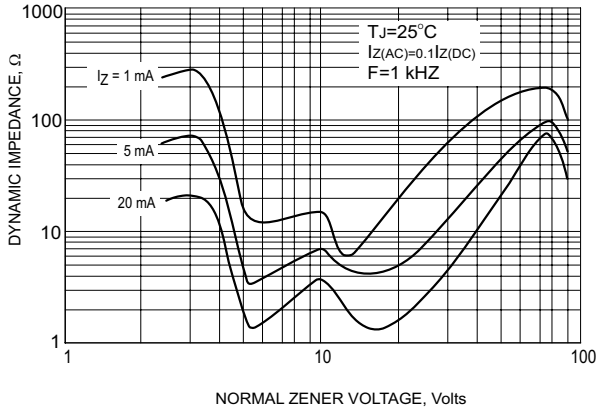
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
   B. Matched sets.
3. Zener Voltage ($V_Z$) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature ($T_L$) at 30°C, from the diode body.
4. Zener Impedance ($Z_Z$) 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 ($I_{ZT}$ or $I_{ZK}$) is superimposed on $I_{ZT}$ or $I_{ZK}$.
5. Surge Current ($I_R$) 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, $I_{ZT}$, per JEDEC registration; however, actual device capability is as described in Figure 5.



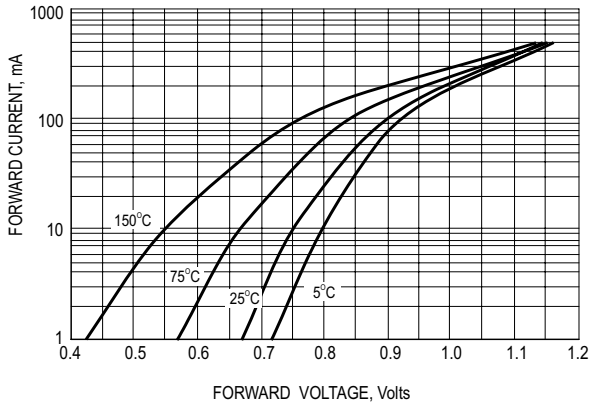

**TYPICAL REVERSE CURRENT**



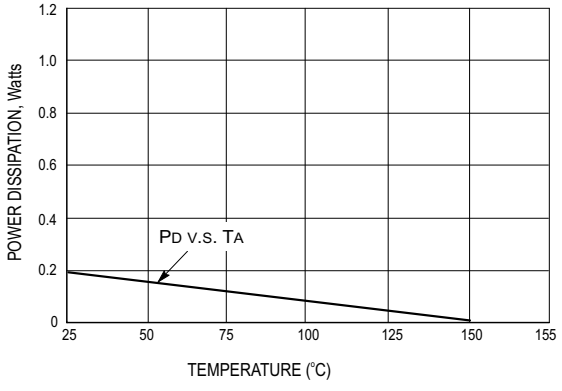

**STEADY STATE POWER DERATING**



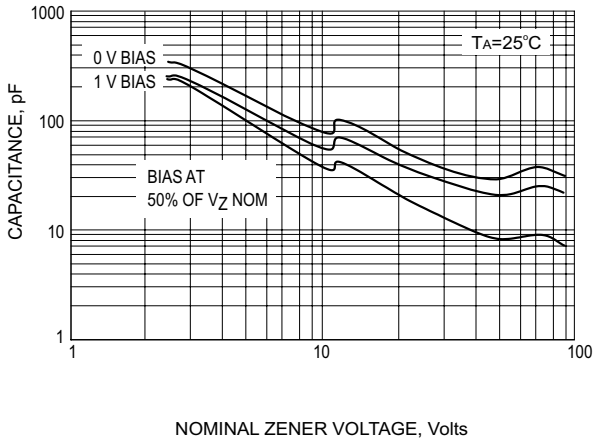

**EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



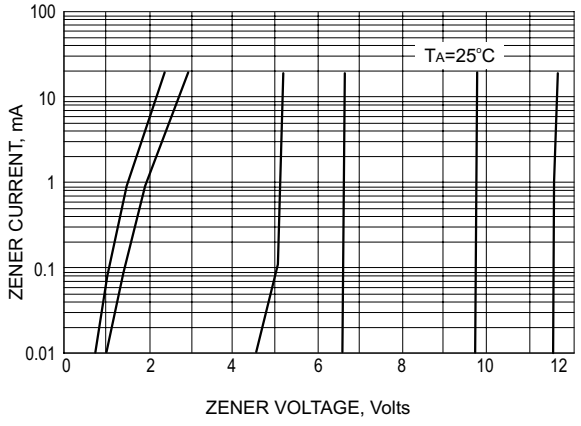

**TYPICAL FORWARD VOLTAGE**



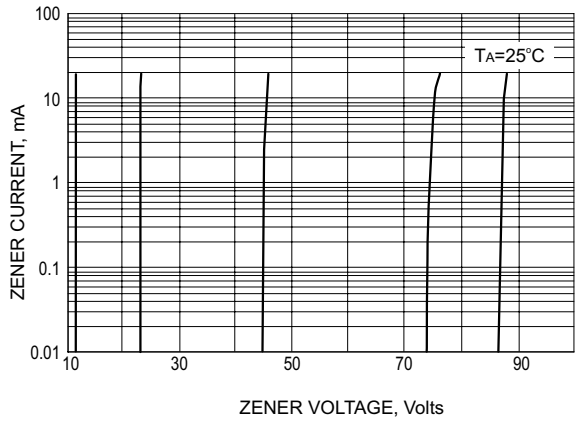

**STEADY STATE POWER DERATING**



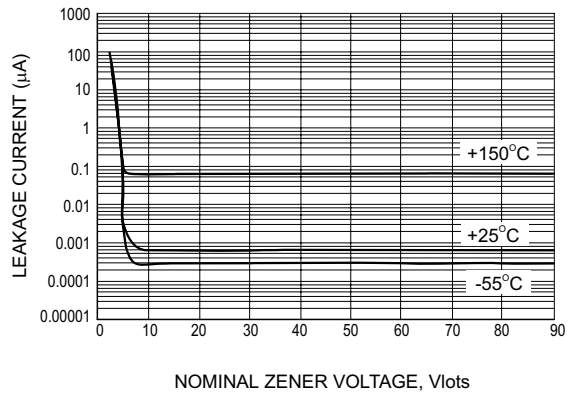

**TYPICAL CAPACITANCE**




**ZENER VOLTAGE V.S. ZENER CURRENT**

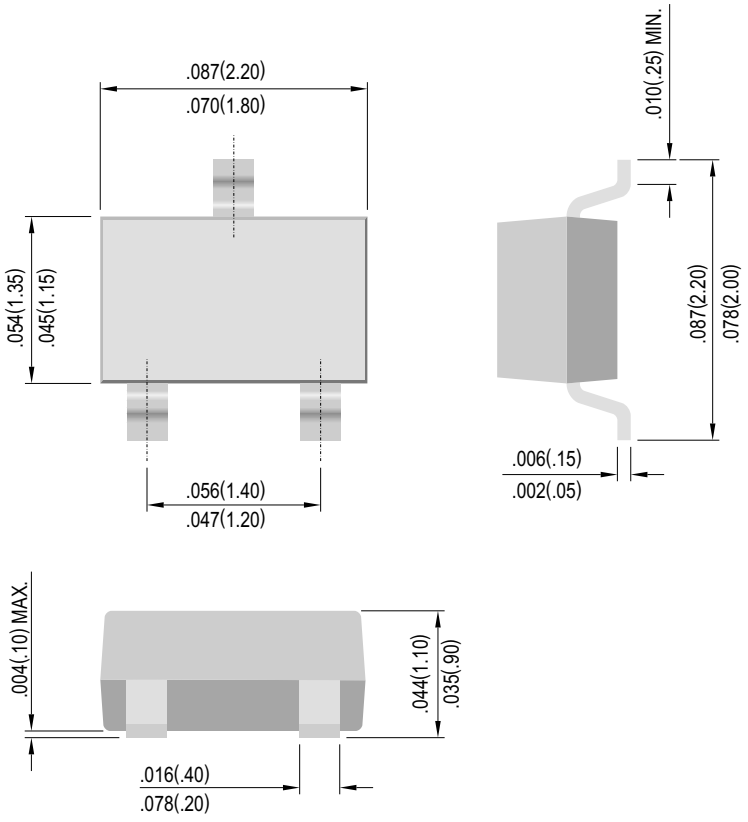



**ZENER VOLTAGE V.S. ZENER CURRENT**




**TYPICAL LEAKGE CURRENT**

## SOT-323






**PanJit Internatioal Inc.**

TEL:886-7-6213121 Fax:886-7-6213129 Internet: http://www.panjit.com.tw email: sales@panjit.com.tw