

# BZX84C2V4W THRU BZX84C39W

**Silicon**

**200 mWatt**

**Zener Diodes**

## Features

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

## Mechanical Data

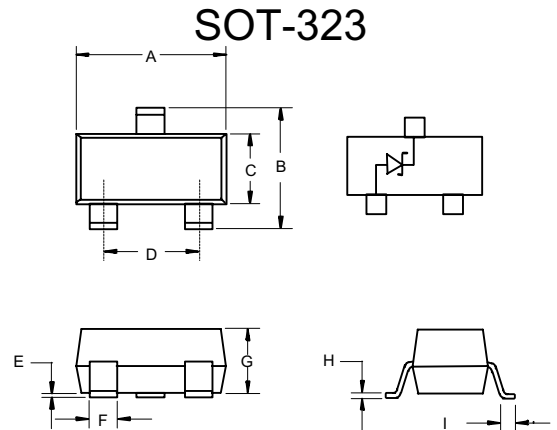
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Weight: 0.008 grams (approx.)

## Maximum Ratings @ 25°C Unless Otherwise Specified

|                                   |                |                 |       |
|-----------------------------------|----------------|-----------------|-------|
| Zener Current                     | $I_F$          | 100             | mA    |
| Maximum Forward Voltage           | $V_F$          | 1.2             | V     |
| Power Dissipation (Note 1)        | $P_{(AV)}$     | 200             | mWatt |
| Operation And Storage Temperature | $T_J, T_{STG}$ | -55°C to +150°C |       |
| Peak Forward Surge                | $I_{FSM}$      | 2.0             | A     |

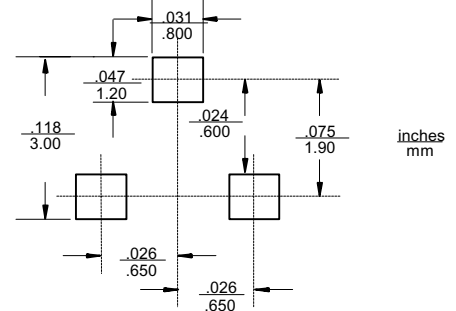
### NOTES:

- 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.



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .070   | .087  | 1.80 | 2.20 |      |
| B   | .078   | .087  | 2.00 | 2.20 |      |
| C   | .045   | .054  | 1.15 | 1.35 |      |
| D   | .047   | .056  | 1.20 | 1.40 |      |
| E   | ---    | .004  | ---  | .10  |      |
| F   | .0078  | .0160 | .20  | .40  |      |
| G   | .035   | .044  | .90  | 1.10 |      |
| H   | .002   | .006  | .05  | .15  |      |
| I   | .010   | ---   | .25  | ---  |      |

### Suggested Solder Pad Layout



# BZX84C2V4W thru BZX84C39W

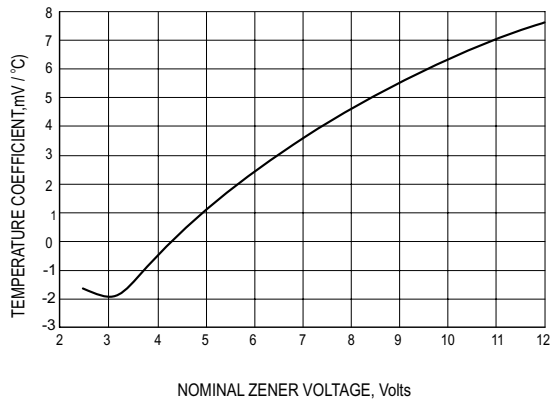
ELECTRICAL CHARACTERISTICS (TA=25 degree C unless otherwise noted) VF=1.2V max, IF=100mA for all ty

| Type Number | Marking Code | Nominal Zener Voltage |        |        | Max. Zener Impedance |    |           |    | Max.Reverse Leakage Current |      |
|-------------|--------------|-----------------------|--------|--------|----------------------|----|-----------|----|-----------------------------|------|
|             |              | Vz @ IzT              |        |        | ZzT @ IzT            |    | Zzk @ Izk |    | IR @ VR                     |      |
|             |              | Nom. V                | Min. V | Max. V | Ohm                  | mA | Ohm       | mA | uA                          | V    |
| BZX84C2V4W  | W1           | 2.4                   | 2.28   | 2.52   | 100                  | 5  | 600       | 1  | 50                          | 1    |
| BZX84C2V7W  | W2           | 2.7                   | 2.5    | 2.9    | 100                  | 5  | 600       | 1  | 20                          | 1    |
| BZX84C3V0W  | W3           | 3                     | 2.8    | 3.2    | 95                   | 5  | 600       | 1  | 10                          | 1    |
| BZX84C3V3W  | W4           | 3.3                   | 3.1    | 3.5    | 95                   | 5  | 600       | 1  | 5.0                         | 1    |
| BZX84C3V6W  | W5           | 3.6                   | 3.4    | 3.8    | 90                   | 5  | 600       | 1  | 5.0                         | 1    |
| BZX84C3V9W  | W6           | 3.9                   | 3.7    | 4.1    | 90                   | 5  | 600       | 1  | 3.0                         | 1    |
| BZX84C4V3W  | W7           | 4.3                   | 4      | 4.6    | 90                   | 5  | 600       | 1  | 3.0                         | 1    |
| BZX84C4V7W  | W8           | 4.7                   | 4.4    | 5      | 80                   | 5  | 500       | 1  | 3.0                         | 2    |
| BZX84C5V1W  | W9           | 5.1                   | 4.8    | 5.4    | 60                   | 5  | 480       | 1  | 2.0                         | 2.0  |
| BZX84C5V6W  | WA           | 5.6                   | 5.2    | 6      | 40                   | 5  | 400       | 1  | 1.0                         | 2.0  |
| BZX84C6V2W  | WB           | 6.2                   | 5.8    | 6.6    | 10                   | 5  | 150       | 1  | 3.0                         | 4.0  |
| BZX84C6V8W  | WC           | 6.8                   | 6.4    | 7.2    | 15                   | 5  | 80        | 1  | 2.0                         | 4.0  |
| BZX84C7V5W  | WD           | 7.5                   | 7      | 7.9    | 15                   | 5  | 80        | 1  | 1.0                         | 5    |
| BZX84C8V2W  | WE           | 8.2                   | 7.7    | 8.7    | 15                   | 5  | 80        | 1  | 0.7                         | 5    |
| BZX84C9V1W  | WF           | 9.1                   | 8.5    | 9.6    | 15                   | 5  | 100       | 1  | 0.5                         | 6    |
| BZX84C10W   | WG           | 10                    | 9.4    | 10.6   | 20                   | 5  | 150       | 1  | 0.2                         | 7.0  |
| BZX84C11W   | WH           | 11                    | 10.4   | 11.6   | 20                   | 5  | 150       | 1  | 0.1                         | 8.0  |
| BZX84C12W   | WI           | 12                    | 11.4   | 12.7   | 25                   | 5  | 150       | 1  | 0.1                         | 8.0  |
| BZX84C13W   | WK           | 13                    | 12.4   | 14.1   | 30                   | 5  | 170       | 1  | 0.1                         | 8.0  |
| BZX84C15W   | WL           | 15                    | 13.8   | 15.6   | 30                   | 5  | 200       | 1  | 0.1                         | 10.5 |
| BZX84C16W   | WM           | 16                    | 15.3   | 17.1   | 40                   | 5  | 200       | 1  | 0.1                         | 11.2 |
| BZX84C18W   | WN           | 18                    | 16.8   | 19.1   | 45                   | 5  | 225       | 1  | 0.1                         | 12.6 |
| BZX84C20W   | WO           | 20                    | 18.8   | 21.2   | 55                   | 5  | 225       | 1  | 0.1                         | 14.0 |
| BZX84C22W   | WP           | 22                    | 20.8   | 23.3   | 55                   | 5  | 250       | 1  | 0.1                         | 15.4 |
| BZX84C24W   | WR           | 24                    | 22.8   | 25.6   | 70                   | 5  | 250       | 1  | 0.1                         | 16.8 |
| BZX84C27W   | WS           | 27                    | 25.1   | 28.9   | 80                   | 5  | 300       | 1  | 0.1                         | 18.9 |
| BZX84C30W   | WT           | 30                    | 28     | 32     | 80                   | 5  | 300       | 1  | 0.1                         | 21.0 |
| BZX84C33W   | WU           | 33                    | 31     | 35     | 80                   | 5  | 325       | 1  | 0.1                         | 23.1 |
| BZX84C36W   | WW           | 36                    | 34     | 38     | 90                   | 5  | 350       | 1  | 0.1                         | 25.2 |
| BZX84C39W   | WX           | 39                    | 37     | 41     | 130                  | 5  | 350       | 1  | 0.1                         | 27.3 |

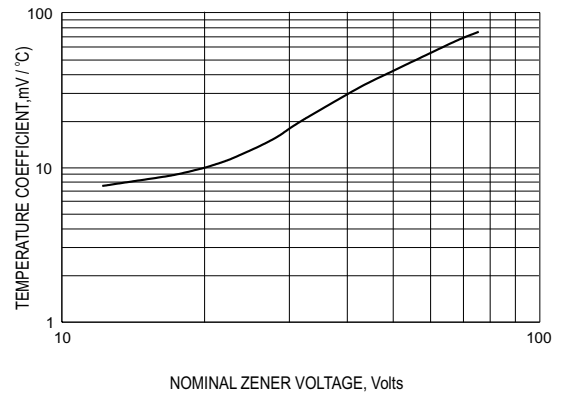
NOTE:

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

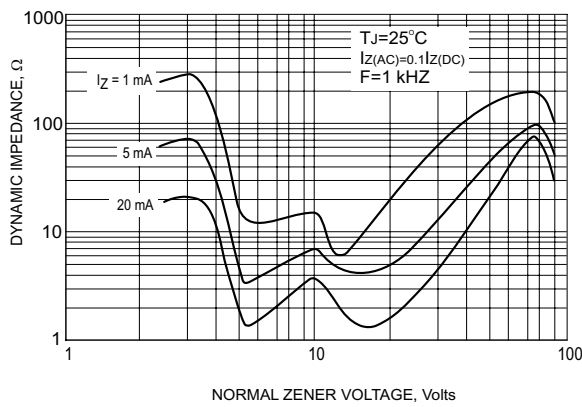
# BZX84C2V4W thru BZX84C39W



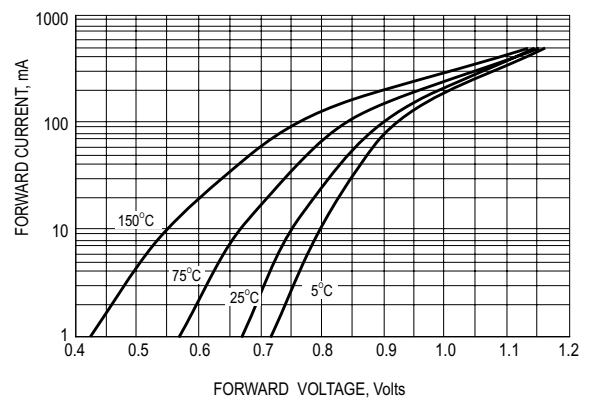
**TYPICAL REVERSE CURRENT**



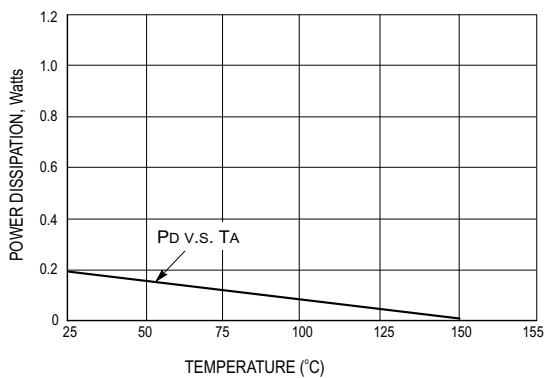
**STEADY STATE POWER DERATING**



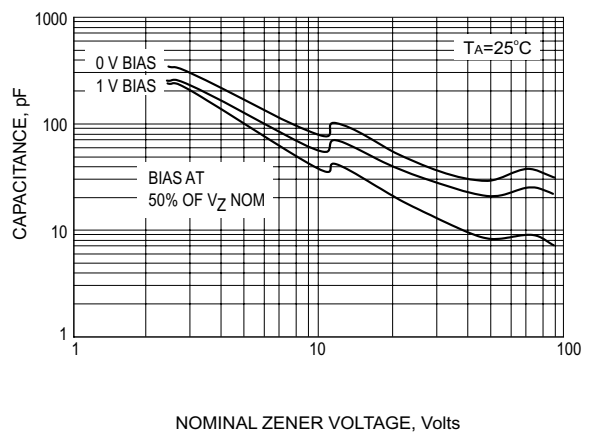
**EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



**TYPICAL FORWARD VOLTAGE**

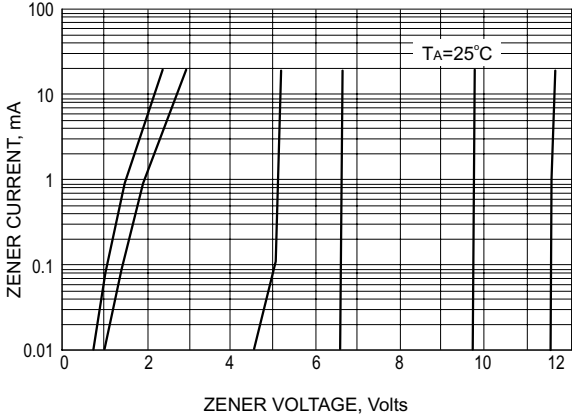


**STEADY STATE POWER DERATING**

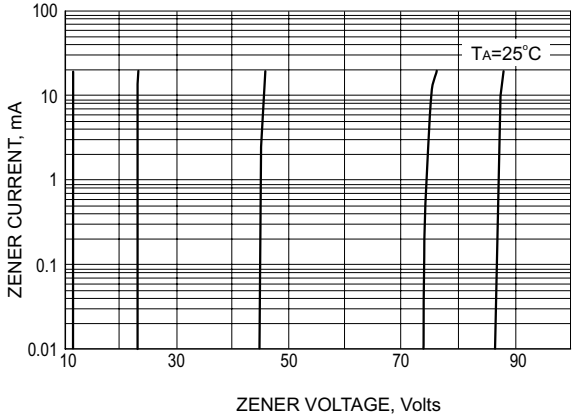


**TYPICAL CAPACITANCE**

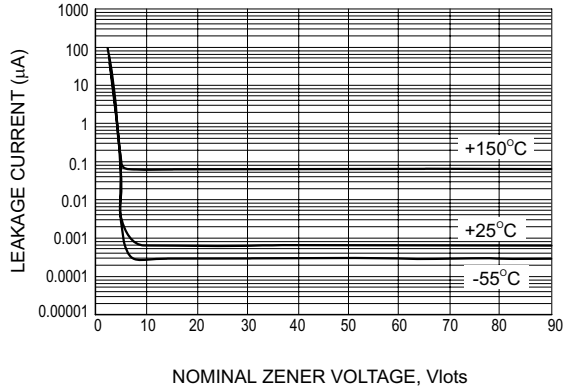
# BZX84C2V4W thru BZX84C39W



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



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



**TYPICAL LEAKGE CURRENT**

## Ordering Information

| Device           | Packing              |
|------------------|----------------------|
| (Part Number)-TP | Tape&Reel;3Kpcs/Reel |