

Features

- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

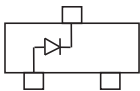
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance : 357°C/W Junction to Ambient

| Parameter | Symbol | Rating | Conditions |
|----------------------------|-----------|--------|------------|
| Power Dissipation | P_D | 350mW | Note 2 |
| Peak Forward Surge Current | I_{FSM} | 2.0A | Note 3 |
| Maximum Forward Voltage | V_F | 0.9V | $I_F=10mA$ |

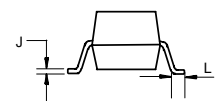
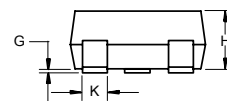
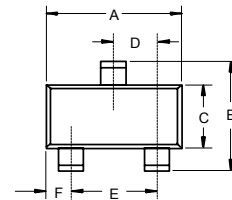
- Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 2. Mounted on 5.0mm² (.013mm thick) Land Areas.
 3. Measured on 8.3ms, Single Half Sine-wave or Equivalent Square Wave

Internal Structure



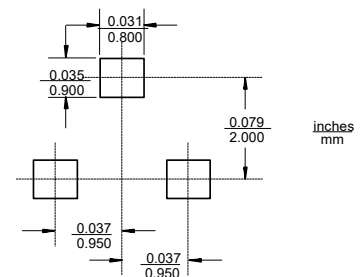
**350 mWatt
Zener Diodes
2.4 to 47 Volts**

SOT-23



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.110 | 0.120 | 2.80 | 3.04 | |
| B | 0.083 | 0.104 | 2.10 | 2.64 | |
| C | 0.047 | 0.055 | 1.20 | 1.40 | |
| D | 0.034 | 0.041 | 0.85 | 1.05 | |
| E | 0.067 | 0.083 | 1.70 | 2.10 | |
| F | 0.018 | 0.024 | 0.45 | 0.60 | |
| G | 0.0004 | 0.006 | 0.01 | 0.15 | |
| H | 0.035 | 0.043 | 0.90 | 1.10 | |
| J | 0.003 | 0.007 | 0.08 | 0.18 | |
| K | 0.012 | 0.020 | 0.30 | 0.51 | |
| L | 0.007 | 0.020 | 0.20 | 0.50 | |

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Zener Voltage ^(4,5) | | | Maximum Zener Impedance ⁽⁶⁾ | | | | Maximum Reverse Current I _R @ V _R | | Typical Temperature Coefficient | | Marking Code |
|--------------------|----------------------------------|--------|---------|--|-----------------------------------|-----------------|-----------------------------------|---|----------------|---------------------------------------|-------------|--------------|
| | V _Z @ I _{ZT} | | | I _{ZT} | Z _{ZT} @ I _{ZT} | I _{ZK} | Z _{ZK} @ I _{ZK} | I _R | V _R | @I _{ZT} | | |
| | Min.(V) | Nom(V) | Max.(V) | mA | Ω | mA | Ω | μA | V | Min.(mV/°C) | Max.(mV/°C) | |
| BZX84C2V4HE3 | 2.28 | 2.40 | 2.52 | 5 | 100 | 1 | 600 | 50 | 1.0 | -3.5 | 0 | Z11 |
| BZX84C2V7HE3 | 2.50 | 2.70 | 2.90 | 5 | 100 | 1 | 600 | 20 | 1.0 | -3.5 | 0 | Z12 |
| BZX84C3V0HE3 | 2.80 | 3.00 | 3.20 | 5 | 95 | 1 | 600 | 10 | 1.0 | -3.5 | 0 | Z13 |
| BZX84C3V3HE3 | 3.10 | 3.30 | 3.50 | 5 | 95 | 1 | 600 | 5 | 1.0 | -3.5 | 0 | Z14 |
| BZX84C3V6HE3 | 3.40 | 3.60 | 3.80 | 5 | 90 | 1 | 600 | 5 | 1.0 | -3.5 | 0 | Z15 |
| BZX84C3V9HE3 | 3.70 | 3.90 | 4.10 | 5 | 90 | 1 | 600 | 3 | 1.0 | -3.5 | 0 | Z16 |
| BZX84C4V3HE3 | 4.00 | 4.30 | 4.60 | 5 | 90 | 1 | 600 | 3 | 1.0 | -3.5 | 0 | Z17 |
| BZX84C4V7HE3 | 4.40 | 4.70 | 5.00 | 5 | 80 | 1 | 500 | 3 | 2.0 | -3.5 | 0.2 | Z1 |
| BZX84C5V1HE3 | 4.80 | 5.10 | 5.40 | 5 | 60 | 1 | 480 | 2 | 2.0 | -2.7 | 1.2 | Z2 |
| BZX84C5V6HE3 | 5.20 | 5.60 | 6.00 | 5 | 40 | 1 | 400 | 1 | 2.0 | -2 | 2.5 | Z3 |
| BZX84C6V2HE3 | 5.80 | 6.20 | 6.60 | 5 | 10 | 1 | 150 | 3 | 4.0 | 0.4 | 3.7 | Z4 |
| BZX84C6V8HE3 | 6.40 | 6.80 | 7.20 | 5 | 15 | 1 | 80 | 2 | 4.0 | 1.2 | 4.5 | Z5 |
| BZX84C7V5HE3 | 7.00 | 7.50 | 7.90 | 5 | 15 | 1 | 80 | 1 | 5.0 | 2.5 | 5.3 | Z6 |
| BZX84C8V2HE3 | 7.70 | 8.20 | 8.70 | 5 | 15 | 1 | 80 | 0.7 | 5.0 | 3.2 | 6.2 | Z7 |
| BZX84C9V1HE3 | 8.50 | 9.10 | 9.60 | 5 | 15 | 1 | 100 | 0.5 | 6.0 | 3.8 | 7.0 | Z8 |
| BZX84C10HE3 | 9.40 | 10.00 | 10.60 | 5 | 20 | 1 | 150 | 0.2 | 7.0 | 4.5 | 8.0 | Z9 |
| BZX84C11HE3 | 10.40 | 11.00 | 11.60 | 5 | 20 | 1 | 150 | 0.1 | 8.0 | 5.4 | 9.0 | Y1 |
| BZX84C12HE3 | 11.40 | 12.00 | 12.70 | 5 | 25 | 1 | 150 | 0.1 | 8.0 | 6.0 | 10 | Y2 |
| BZX84C13HE3 | 12.40 | 13.00 | 14.10 | 5 | 30 | 1 | 170 | 0.1 | 8.0 | 7.0 | 11 | Y3 |
| BZX84C15HE3 | 13.80 | 15.00 | 15.60 | 5 | 30 | 1 | 200 | 0.1 | 10.5 | 9.2 | 13 | Y4 |
| BZX84C16HE3 | 15.30 | 16.00 | 17.10 | 5 | 40 | 1 | 200 | 0.1 | 11.2 | 10.4 | 14 | Y5 |
| BZX84C18HE3 | 16.80 | 18.00 | 19.10 | 5 | 45 | 1 | 225 | 0.1 | 12.6 | 12.4 | 16 | Y6 |
| BZX84C20HE3 | 18.80 | 20.00 | 21.20 | 5 | 55 | 1 | 225 | 0.1 | 14.0 | 14.4 | 18 | Y7 |
| BZX84C22HE3 | 20.80 | 22.00 | 23.30 | 5 | 55 | 1 | 250 | 0.1 | 15.4 | 16.4 | 20 | Y8 |
| BZX84C24HE3 | 22.80 | 24.00 | 25.60 | 5 | 70 | 1 | 250 | 0.1 | 16.8 | 18.4 | 22 | Y9 |
| BZX84C27HE3 | 25.10 | 27.00 | 28.90 | 2 | 80 | 1 | 300 | 0.1 | 18.9 | 21.4 | 25.3 | Y10 |
| BZX84C30HE3 | 28.00 | 30.00 | 32.00 | 2 | 80 | 1 | 300 | 0.1 | 21.0 | 24.4 | 29.4 | Y11 |
| BZX84C33HE3 | 31.00 | 33.00 | 35.00 | 2 | 80 | 1 | 325 | 0.1 | 23.1 | 27.4 | 33.4 | Y12 |
| BZX84C36HE3 | 34.00 | 36.00 | 38.00 | 2 | 90 | 1 | 350 | 0.1 | 25.2 | 30.4 | 37.4 | Y13 |
| BZX84C39HE3 | 37.00 | 39.00 | 41.00 | 2 | 130 | 1 | 350 | 0.1 | 27.3 | 33.4 | 41.2 | Y14 |
| BZX84C43HE3 | 40.85 | 43.00 | 45.15 | 5 | 150 | 1 | 375 | 0.1 | 30.10 | 37.6 | 50.6 | Y15 |
| BZX84C47HE3 | 44.65 | 47.00 | 49.35 | 5 | 170 | 1 | 375 | 0.1 | 32.90 | 42 | 55.8 | Y16 |

Note :

- Standard zener voltage tolerance is +/- 5% with a 'C' suffix from BZX84C2V4HE3~BZX84C47HE3
- Zener Voltage (V_Z) Measurement. Guarantess the Zener Voltage When Measured at 90 Seconds While Maintaining the Lead Temperature (T_L) at 25°C from the Diode Body.
- 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}.

Curve Characteristics

Fig. 1 - Power Derating Curve

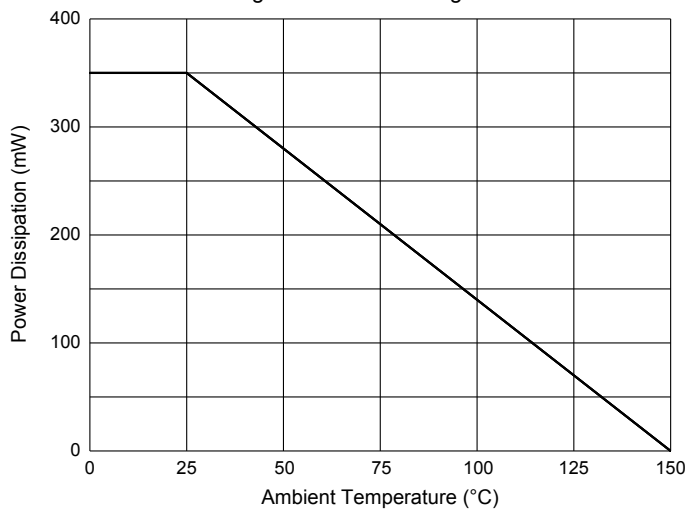


Fig. 2 - Typical Zener Breakdown Characteristics

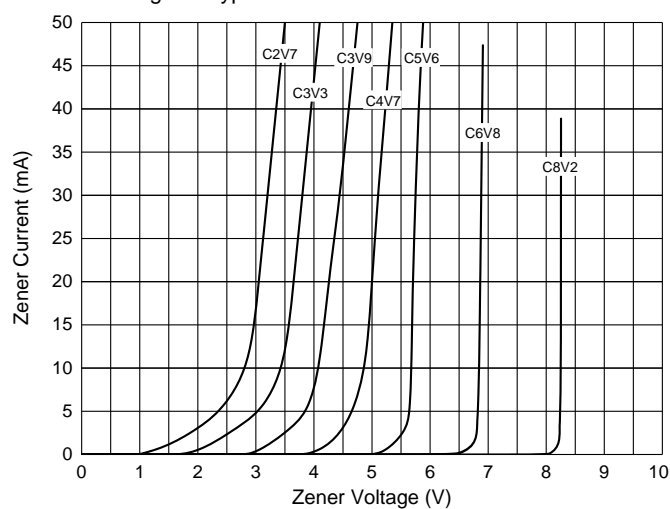
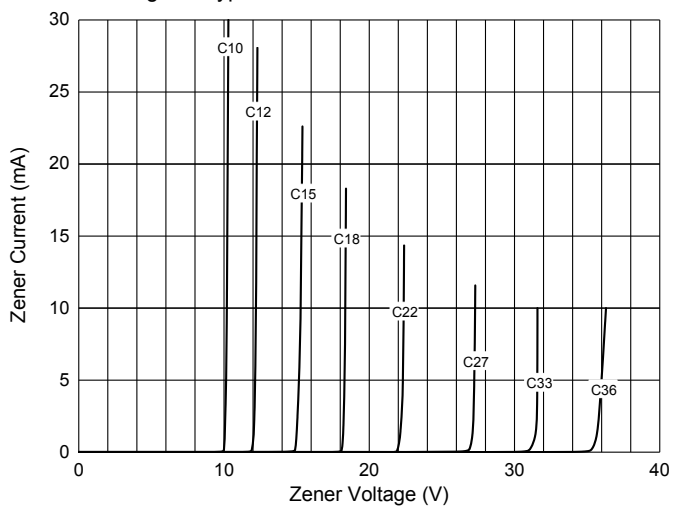


Fig. 3 - Typical Zener Breakdown Characteristics



Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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