



Micro Commercial Components  
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## H2 Series THRU H36 Series

500 mW  
Zener Diode  
1.9 to 37.2 Volts

### Features

- Moisture Sensitivity: Level 1 per J-STD-020C
- Low Leakage
- Low Zener Impedance
- High Reliability
- Marking : Cathode band and type number
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)

### Maximum Ratings

| Symbol    | Rating                    | Rating      | Unit               |
|-----------|---------------------------|-------------|--------------------|
| $P_D$     | Power dissipation         | 500         | W                  |
| $T_J$     | Junction Temperature      | -55 to +175 | $^{\circ}\text{C}$ |
| $T_{STG}$ | Storage Temperature Range | -55 to +175 | $^{\circ}\text{C}$ |

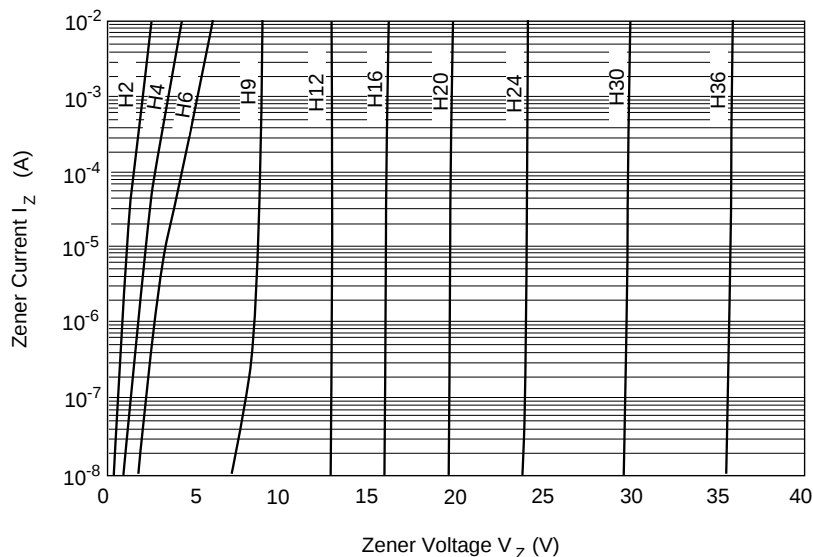
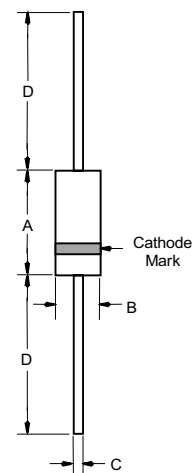


Fig.1 Zener current Vs. Zener voltage

### DO-35



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | ---    | .166 | ---   | 4.2  |      |
| B          | ---    | .079 | ---   | 2.00 |      |
| C          | ---    | .020 | ---   | .52  |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

Note: 1. Lead in Glass Exemption Applied, see EU Directive Annex 5.

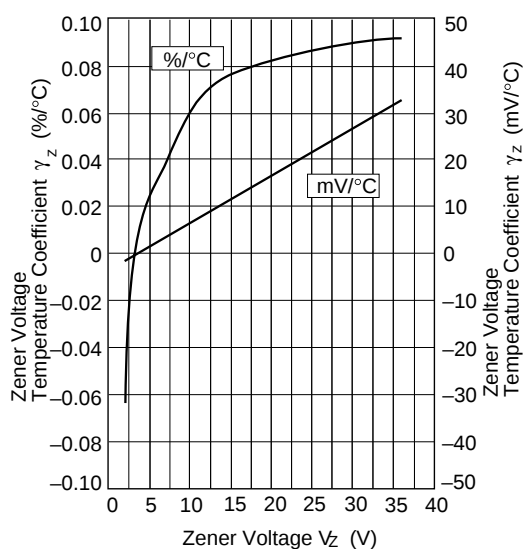


Fig.2 Temperature Coefficient Vs. Zener voltage

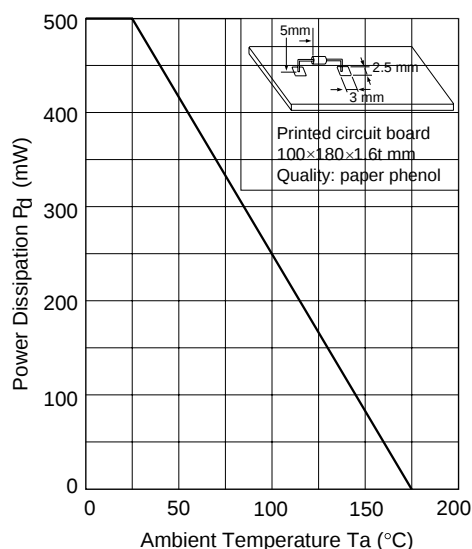


Fig.3 Power Dissipation Vs. Ambient Temperature

ELECTRICAL CHARACTERISTICS @25 $^{\circ}\text{C}$ 

| MCC<br>PART NUMBER |       | ZENER VOLTAGE<br>$V_z$ @ $I_{zT}$<br>VOLTS |     | TEST CURRENT<br>$I_{zT}$ | Dynamic Resistance<br>$r_d$ (Max) $I_z$ |     | REVERSE CURRENT<br>$I_R$ (Max) @ $V_R$ |       |
|--------------------|-------|--------------------------------------------|-----|--------------------------|-----------------------------------------|-----|----------------------------------------|-------|
| Type               | Grade | Min                                        | Max | mA                       | OHMS                                    | mA  | $\mu\text{A}$                          | VOLTS |
| H2                 | A3    | 1.8                                        | 2.0 | 5.0                      | 100                                     | 5.0 | 25                                     | 0.5   |
|                    | B1    | 1.9                                        | 2.1 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | B2    | 2.0                                        | 2.2 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | B3    | 2.1                                        | 2.3 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | C1    | 2.2                                        | 2.4 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | C2    | 2.3                                        | 2.5 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | C3    | 2.4                                        | 2.6 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
| H3                 | A1    | 2.5                                        | 2.7 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | A2    | 2.6                                        | 2.8 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | A3    | 2.7                                        | 2.9 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | B1    | 2.8                                        | 3.0 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | B2    | 2.9                                        | 3.1 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | B3    | 3.0                                        | 3.2 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | C1    | 3.1                                        | 3.3 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
| H4                 | C2    | 3.2                                        | 3.4 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | C3    | 3.3                                        | 3.5 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 0.5   |
|                    | A1    | 3.4                                        | 3.6 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | A2    | 3.5                                        | 3.7 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | A3    | 3.6                                        | 3.8 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | B1    | 3.7                                        | 3.9 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | B2    | 3.8                                        | 4.0 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | B3    | 3.9                                        | 4.1 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | C1    | 4.0                                        | 4.2 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | C2    | 4.1                                        | 4.3 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |
|                    | C3    | 4.2                                        | 4.4 | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.0   |

## H2 Series thru H36 Series

### ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART NUMBER |       | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$<br>VOLTS |      | TEST CURRENT<br>$I_{ZT}$ | Dynamic Resistance<br>$r_d$ (Max) $I_Z$ |     | REVERSE CURRENT<br>$I_R$ (Max) @ $V_R$ |       |
|--------------------|-------|------------------------------------------|------|--------------------------|-----------------------------------------|-----|----------------------------------------|-------|
| Type               | Grade | Min                                      | Max  | mA                       | OHMS                                    | mA  | μA                                     | VOLTS |
| H5                 | A1    | 4.3                                      | 4.5  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | A2    | 4.4                                      | 4.6  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | A3    | 4.5                                      | 4.7  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | B1    | 4.6                                      | 4.8  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | B2    | 4.7                                      | 4.9  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | B3    | 4.8                                      | 5.0  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | C1    | 4.9                                      | 5.1  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | C2    | 5.0                                      | 5.2  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
|                    | C3    | 5.1                                      | 5.3  | 5.0                      | 100                                     | 5.0 | 5.0                                    | 1.5   |
| H6                 | A1    | 5.2                                      | 5.5  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | A2    | 5.3                                      | 5.6  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | A3    | 5.4                                      | 5.7  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | B1    | 5.5                                      | 5.8  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | B2    | 5.6                                      | 5.9  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | B3    | 5.7                                      | 6.0  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | C1    | 5.8                                      | 6.1  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | C2    | 6.0                                      | 6.3  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
|                    | C3    | 6.1                                      | 6.4  | 5.0                      | 40                                      | 5.0 | 5.0                                    | 2.0   |
| H7                 | A1    | 6.3                                      | 6.6  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | A2    | 6.4                                      | 6.7  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | A3    | 6.6                                      | 6.9  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | B1    | 6.7                                      | 7.0  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | B2    | 6.9                                      | 7.2  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | B3    | 7.0                                      | 7.3  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | C1    | 7.2                                      | 7.6  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | C2    | 7.3                                      | 7.7  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
|                    | C3    | 7.5                                      | 7.9  | 5.0                      | 15                                      | 5.0 | 1.0                                    | 3.5   |
| H9                 | A1    | 7.7                                      | 8.1  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | A2    | 7.9                                      | 8.3  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | A3    | 8.1                                      | 8.5  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | B1    | 8.3                                      | 8.7  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | B2    | 8.5                                      | 8.9  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | B3    | 8.7                                      | 9.1  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | C1    | 8.9                                      | 9.3  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | C2    | 9.1                                      | 9.5  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
|                    | C3    | 9.3                                      | 9.7  | 5.0                      | 20                                      | 5.0 | 1.0                                    | 5.0   |
| H11                | A1    | 9.5                                      | 9.9  | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | A2    | 9.7                                      | 10.1 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | A3    | 9.9                                      | 10.3 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | B1    | 10.2                                     | 10.6 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | B2    | 10.4                                     | 10.8 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | B3    | 10.7                                     | 11.1 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | C1    | 10.9                                     | 11.3 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | C2    | 11.1                                     | 11.6 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
|                    | C3    | 11.4                                     | 11.9 | 5.0                      | 25                                      | 5.0 | 1.0                                    | 7.5   |
| H12                | A1    | 11.6                                     | 12.1 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | A2    | 11.9                                     | 12.4 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | A3    | 12.2                                     | 12.7 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | B1    | 12.4                                     | 12.9 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | B2    | 12.6                                     | 13.1 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | B3    | 12.9                                     | 13.4 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | C1    | 13.2                                     | 13.7 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | C2    | 13.5                                     | 14.0 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
|                    | C3    | 13.8                                     | 14.3 | 5.0                      | 35                                      | 5.0 | 1.0                                    | 9.5   |
| H15                | 1     | 14.1                                     | 14.7 | 5.0                      | 40                                      | 5.0 | 1.0                                    | 11    |
|                    | 2     | 14.5                                     | 15.1 | 5.0                      | 40                                      | 5.0 | 1.0                                    | 11    |
|                    | 3     | 14.9                                     | 15.5 | 5.0                      | 40                                      | 5.0 | 1.0                                    | 11    |
| H16                | 1     | 15.3                                     | 15.9 | 5.0                      | 45                                      | 5.0 | 1.0                                    | 12    |
|                    | 2     | 15.7                                     | 16.5 | 5.0                      | 45                                      | 5.0 | 1.0                                    | 12    |
|                    | 3     | 16.3                                     | 17.1 | 5.0                      | 45                                      | 5.0 | 1.0                                    | 12    |
| H18                | 1     | 16.9                                     | 17.7 | 5.0                      | 55                                      | 5.0 | 1.0                                    | 13    |
|                    | 2     | 17.5                                     | 18.3 | 5.0                      | 55                                      | 5.0 | 1.0                                    | 13    |
|                    | 3     | 18.1                                     | 19.0 | 5.0                      | 55                                      | 5.0 | 1.0                                    | 13    |
| H20                | 1     | 18.8                                     | 19.7 | 2.0                      | 60                                      | 2.0 | 1.0                                    | 15    |
|                    | 2     | 19.5                                     | 20.4 | 2.0                      | 60                                      | 2.0 | 1.0                                    | 15    |
|                    | 3     | 20.2                                     | 21.1 | 2.0                      | 60                                      | 2.0 | 1.0                                    | 15    |

## H2 Series thru H36 Series

### ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART NUMBER |       | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$<br>VOLTS |      | TEST CURRENT<br>$I_{ZT}$ | Dynamic Resistance<br>$r_d(\text{Max})$ $I_Z$ |     | REVERSE CURRENT<br>$I_R(\text{Max})$ @ $V_R$ |       |
|--------------------|-------|------------------------------------------|------|--------------------------|-----------------------------------------------|-----|----------------------------------------------|-------|
| Type               | Grade | Min                                      | Max  | mA                       | OHMS                                          | mA  | μA                                           | VOLTS |
| H22                | 1     | 20.9                                     | 21.9 | 2.0                      | 65                                            | 2.0 | 1.0                                          | 17    |
|                    | 2     | 21.6                                     | 22.6 | 2.0                      | 65                                            | 2.0 | 1.0                                          | 17    |
|                    | 3     | 22.3                                     | 23.3 | 2.0                      | 65                                            | 2.0 | 1.0                                          | 17    |
| H24                | 1     | 22.9                                     | 24.0 | 2.0                      | 70                                            | 2.0 | 1.0                                          | 19    |
|                    | 2     | 23.6                                     | 24.7 | 2.0                      | 70                                            | 2.0 | 1.0                                          | 19    |
|                    | 3     | 24.3                                     | 25.5 | 2.0                      | 70                                            | 2.0 | 1.0                                          | 19    |
| H27                | 1     | 25.2                                     | 26.6 | 2.0                      | 80                                            | 2.0 | 1.0                                          | 21.0  |
|                    | 2     | 26.2                                     | 27.6 | 2.0                      | 80                                            | 2.0 | 1.0                                          | 21.0  |
|                    | 3     | 27.2                                     | 28.6 | 2.0                      | 80                                            | 2.0 | 1.0                                          | 21.0  |
| H30                | 1     | 28.2                                     | 29.6 | 2.0                      | 100                                           | 2.0 | 1.0                                          | 23.0  |
|                    | 2     | 29.2                                     | 30.6 | 2.0                      | 100                                           | 2.0 | 1.0                                          | 23.0  |
|                    | 3     | 30.2                                     | 31.6 | 2.0                      | 100                                           | 2.0 | 1.0                                          | 23.0  |
| H33                | 1     | 31.2                                     | 32.6 | 2.0                      | 120                                           | 2.0 | 1.0                                          | 25.0  |
|                    | 2     | 32.2                                     | 33.6 | 2.0                      | 120                                           | 2.0 | 1.0                                          | 25.0  |
|                    | 3     | 33.2                                     | 34.6 | 2.0                      | 120                                           | 2.0 | 1.0                                          | 25.0  |
| H36                | 1     | 34.2                                     | 35.7 | 2.0                      | 140                                           | 2.0 | 1.0                                          | 27.0  |
|                    | 2     | 35.3                                     | 36.8 | 2.0                      | 140                                           | 2.0 | 1.0                                          | 27.0  |
|                    | 3     | 36.4                                     | 38.0 | 2.0                      | 140                                           | 2.0 | 1.0                                          | 27.0  |

## Ordering Information

| Device           | Packing                    |
|------------------|----------------------------|
| (Part Number)-TP | Tape&Reel; 10Kpcs/Reel     |
| (Part Number)-AP | Ammo Packing;5Kpcs/AmmoBox |
| (Part Number)-BP | Bulk;500pcs/Bag            |

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