

**TECHNICAL DATA SHEET  
DATASHEET 4220, Rev-**

# ZENER 0.5W VOLTAGE REGULATOR

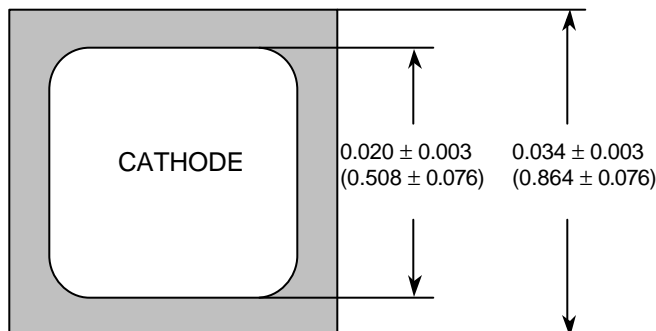
**CONFIGURATION: Zener 0.5W Voltage Regulator**

- All ratings are @  $T_c = 25\text{ }^\circ\text{C}$  unless otherwise specified.
- Operating temperature:  $-55\text{ }^\circ\text{C}$  to  $+175\text{ }^\circ\text{C}$  and storage temperature:  $-65\text{ }^\circ\text{C}$  to  $+175\text{ }^\circ\text{C}$

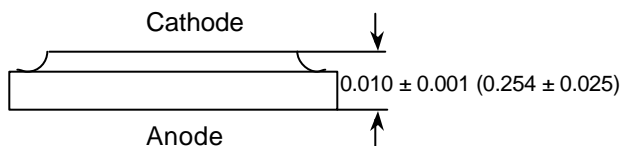
| MAXIMUM RATINGS / ELECTRICAL CHARACTERISTICS         | SYMBOL                | VALUE | UNITS               |
|--|-----------------------|-------|---------------------|
| NOMINAL ZENER VOLTAGE $\pm 5\%$ @ $I_{Z2}$           | $V_{Z2\text{ NOM}}$   | 12.0  | Vdc                 |
| MIN ZENER VOLTAGE @ 250 $\mu\text{A}$                | $V_{Z1\text{ MIN}}$   | 11.0  | Vdc                 |
| TEST CURRENT   | $I_{Z2}$              | 20    | mAmps dc            |
| MAXIMUM IMPEDANCE @ $I_{Z2}$                         | Max $Z_Z$             | 7     | ohm                 |
| REVERSE VOLTAGE                                      | $V_R$                 | 9.0   | Vdc                 |
| MAXIMUM REVERSE CURRENT                              | Max $I_{R1}$          | 1.0   | uAmps dc            |
| MAXIMUM REVERSE CURRENT @ $T_A = +150^\circ\text{C}$ | Max $I_{R2}$          | 10    | uAmps dc            |
| MAXIMUM KNEE IMPEDANCE @ 250 $\mu\text{A}$           | Max $Z_K$             | 550   | ohm                 |
| MAXIMUM VOLTAGE REGULATION                           | Max $V_Z(\text{reg})$ | 0.55  | Vdc                 |
| MAXIMUM TEMPERATURE COEFFICIENT *                    | $\alpha V_Z$          | 0.083 | %/ $^\circ\text{C}$ |
| POWER DISSIPATION *                                  | Power                 | 0.5   | Watts               |

\* Adequate energy absorption should be provided.

**MECHANICAL DIMENSIONS: In Inches (mm)**



Bottom side metalization: Al - 25 kÅ minimum or Ti/Ni/Ag - 30 kÅ minimum.  
 Top side metalization: Al - 25 kÅ minimum or Ti/Ni/Ag - 30 kÅ minimum.  
 Bottom side is anode, top side is cathode.



**TECHNICAL DATA**

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.