



**SOLID STATE INC.**

46 FARRAND STREET  
BLOOMFIELD, NEW JERSEY 07003

www.solidstateinc.com

**1N6309  
thru  
1N6355**

**500 mW Glass  
Zener Diodes**

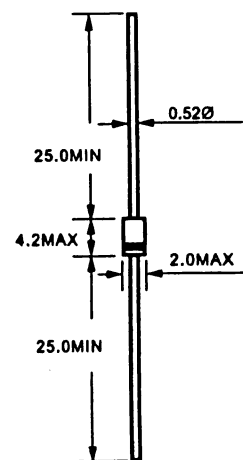
## MAXIMUM RATINGS

Operating Temperature: -65°C to +200°C

Storage Temperature: -65°C to +200°C

## ELECTRICAL CHARACTERISTICS

| TYPE   | VZ2<br>NOM.<br>±5% @<br>IZ2 | VZ1<br>MIN.<br>@ IZ1<br>250 µA | IZ2<br>TEST<br>CURRENT | ZZ<br>@<br>IZ2 | ZZK<br>@<br>250 µA | IZM | VZ(reg)<br>Δ VZ | IZSM<br>SURGE | VR    | IR1<br>@<br>25°C | IR2<br>@<br>TA =<br>150°C | ND<br>@ 250 µA<br>1-3 kHz | αVZ                                 | C<br>@<br>0V |
|--------|-----------------------------|--------------------------------|------------------------|----------------|--------------------|-----|-----------------|---------------|-------|------------------|---------------------------|---------------------------|-------------------------------------|--------------|
|        | VOLTS                       | VOLTS                          | mA                     | OHMS           | OHMS               | mA  | VOLTS           | AMPS          | VOLTS | µA               | µA                        | µV/√Hz                    | %/°C                                | pF           |
| 1N6309 | 2.4                         | 1.1                            | 20                     | 30             | 1200               | 177 | 1.6             | 2.5           | 1.0   | 100              | 200                       | 1.0                       | -0.85                               | 2000         |
| 1N6310 | 2.7                         | 1.2                            | 20                     | 30             | 1300               | 157 | 1.6             | 2.2           | 1.0   | 60               | 150                       | 1.0                       | -0.80                               | 1900         |
| 1N6311 | 3.0                         | 1.3                            | 20                     | 29             | 1400               | 141 | 1.6             | 2.0           | 1.0   | 30               | 100                       | 1.0                       | -0.75                               | 1800         |
| 1N6312 | 3.3                         | 1.5                            | 20                     | 24             | 1400               | 128 | 1.6             | 1.8           | 1.0   | 5.0              | 20                        | 1.0                       | -0.65                               | 1650         |
| 1N6313 | 3.6                         | 1.8                            | 20                     | 22             | 1400               | 109 | 1.6             | 1.65          | 1.0   | 3.0              | 12                        | 1.0                       | -0.55<br>+0.020                     | 1600         |
| 1N6314 | 3.9                         | 2.0                            | 20                     | 20             | 1700               | 118 | 1.6             | 1.5           | 1.0   | 2.0              | 12                        | 1.0                       | -0.43<br>+0.025<br>-0.030<br>+0.030 | 1400         |
| 1N6315 | 4.3                         | 2.4                            | 20                     | 18             | 1400               | 99  | 0.9             | 1.4           | 1.0   | 2.0              | 12                        | 1.0                       | -0.28<br>+0.032                     | 1350         |
| 1N6316 | 4.7                         | 2.8                            | 20                     | 16             | 1500               | 90  | 0.5             | 1.27          | 1.5   | 5.0              | 12                        | 1.0                       | -0.28<br>+0.032                     | 1300         |
| 1N6317 | 5.1                         | 3.3                            | 20                     | 14             | 1300               | 83  | 0.4             | 1.17          | 2.0   | 5.0              | 12                        | 1.0                       | -0.45<br>+0.050                     | 1200         |
| 1N6318 | 5.6                         | 4.3                            | 20                     | 8.0            | 1200               | 76  | 0.4             | 1.10          | 2.5   | 5.0              | 10                        | 2.0                       | -0.55<br>+0.020                     | 1150         |
| 1N6319 | 6.2                         | 5.2                            | 20                     | 3.0            | 800                | 68  | 0.3             | 0.97          | 3.5   | 5.0              | 10                        | 5.0                       | 0.60                                | 1050         |
| 1N6320 | 6.8                         | 6.0                            | 20                     | 3.0            | 400                | 63  | 0.35            | 1.23          | 4.0   | 2.0              | 10                        | 5.0                       | 0.62                                | 1000         |
| 1N6321 | 7.5                         | 6.6                            | 20                     | 4.0            | 400                | 57  | 0.4             | 1.16          | 5.0   | 2.0              | 10                        | 5.0                       | 0.68                                | 900          |
| 1N6322 | 8.2                         | 7.5                            | 20                     | 5.0            | 400                | 52  | 0.4             | 1.07          | 6.0   | 1.0              | 10                        | 20                        | 0.75                                | 800          |
| 1N6323 | 9.1                         | 8.4                            | 20                     | 6.0            | 500                | 47  | 0.5             | 0.97          | 7.0   | 1.0              | 10                        | 40                        | 0.76                                | 700          |
| 1N6324 | 10                          | 9.1                            | 20                     | 6.0            | 500                | 43  | 0.5             | 0.89          | 8.0   | 1.0              | 10                        | 80                        | 0.79                                | 600          |
| 1N6325 | 11                          | 10                             | 20                     | 7.0            | 550                | 39  | 0.5             | 0.83          | 8.5   | 1.0              | 10                        | 100                       | 0.82                                | 500          |
| 1N6326 | 12                          | 11                             | 20                     | 7.0            | 550                | 35  | 0.55            | 0.77          | 9.0   | 1.0              | 10                        | 100                       | 0.83                                | 450          |
| 1N6327 | 13                          | 11.9                           | 9.5                    | 8.0            | 550                | 33  | 0.55            | 0.71          | 9.9   | 0.5              | 10                        | 100                       | 0.79                                | 400          |
| 1N6328 | 15                          | 13.8                           | 8.5                    | 10             | 600                | 28  | 0.70            | 0.62          | 11    | 0.5              | 10                        | 100                       | 0.82                                | 350          |
| 1N6329 | 16                          | 14.7                           | 7.8                    | 12             | 600                | 27  | 0.75            | 0.58          | 12    | 0.5              | 10                        | 100                       | 0.81                                | 325          |
| 1N6330 | 18                          | 16.6                           | 7.0                    | 14             | 600                | 24  | 0.85            | 0.52          | 14    | 0.5              | 10                        | 100                       | 0.85                                | 300          |
| 1N6331 | 20                          | 18.5                           | 6.2                    | 18             | 500                | 21  | 0.95            | 0.47          | 15    | 0.5              | 10                        | 100                       | 0.86                                | 275          |
| 1N6332 | 22                          | 20.4                           | 5.6                    | 20             | 500                | 19  | 1.05            | 0.43          | 17    | 0.5              | 10                        | 100                       | 0.87                                | 260          |
| 1N6333 | 24                          | 22.3                           | 5.2                    | 24             | 500                | 18  | 1.15            | 0.39          | 18    | 0.5              | 10                        | 100                       | 0.88                                | 240          |
| 1N6334 | 27                          | 25.2                           | 4.6                    | 27             | 500                | 16  | 1.30            | 0.35          | 21    | 0.5              | 10                        | 100                       | 0.90                                | 220          |
| 1N6335 | 30                          | 28                             | 4.2                    | 32             | 500                | 14  | 1.45            | 0.31          | 23    | 0.5              | 10                        | 100                       | 0.91                                | 200          |
| 1N6336 | 33                          | 30.9                           | 3.8                    | 40             | 600                | 13  | 1.60            | 0.28          | 25    | 0.5              | 10                        | 100                       | 0.92                                | 185          |
| 1N6337 | 36                          | 33.7                           | 3.4                    | 50             | 600                | 12  | 1.75            | 0.26          | 27    | 0.5              | 10                        | 100                       | 0.93                                | 175          |
| 1N6338 | 39                          | 36.6                           | 3.2                    | 55             | 700                | 11  | 1.90            | 0.24          | 30    | 0.5              | 10                        | 100                       | 0.94                                | 170          |
| 1N6339 | 43                          | 40.4                           | 3.0                    | 65             | 800                | 9.9 | 2.10            | 0.22          | 33    | 0.5              | 10                        | 80                        | 0.95                                | 165          |
| 1N6340 | 47                          | 44.2                           | 2.7                    | 75             | 900                | 9.0 | 2.25            | 0.20          | 36    | 0.5              | 10                        | 80                        | 0.95                                | 155          |
| 1N6341 | 51                          | 48                             | 2.5                    | 85             | 1000               | 8.3 | 2.50            | 0.18          | 39    | 0.5              | 10                        | 80                        | 0.96                                | 145          |
| 1N6342 | 56                          | 52.7                           | 2.2                    | 100            | 1200               | 7.6 | 2.70            | 0.17          | 43    | 0.5              | 10                        | 80                        | 0.97                                | 135          |
| 1N6343 | 62                          | 58.4                           | 2.0                    | 125            | 1300               | 6.8 | 2.90            | 0.15          | 47    | 0.5              | 10                        | 80                        | 0.97                                | 130          |
| 1N6344 | 68                          | 64.1                           | 1.8                    | 155            | 1500               | 6.3 | 3.20            | 0.13          | 52    | 0.5              | 10                        | 80                        | 0.98                                | 120          |
| 1N6345 | 75                          | 70.8                           | 1.7                    | 180            | 1600               | 5.7 | 3.40            | 0.125         | 56    | 0.5              | 10                        | 80                        | 0.98                                | 110          |
| 1N6346 | 82                          | 77.4                           | 1.5                    | 220            | 1800               | 5.2 | 3.80            | 0.115         | 62    | 0.5              | 10                        | 80                        | 0.99                                | 105          |
| 1N6347 | 91                          | 86                             | 1.4                    | 270            | 2100               | 4.7 | 4.20            | 0.10          | 69    | 0.05             | 10                        | 80                        | 0.99                                | 100          |
| 1N6348 | 100                         | 94.5                           | 1.3                    | 340            | 2400               | 4.3 | 4.40            | 0.095         | 76    | 0.05             | 10                        | 80                        | 1.10                                | 95           |
| 1N6349 | 110                         | 104                            | 1.1                    | 500            | 2800               | 3.9 | 4.80            | 0.085         | 84    | 0.05             | 10                        | 80                        | 1.10                                | 90           |
| 1N6350 | 120                         | 113                            | 1.0                    | 600            | 3200               | 3.5 | 5.20            | 0.080         | 91    | 0.05             | 10                        | 80                        | 1.10                                | 70           |
| 1N6351 | 130                         | 122                            | 0.95                   | 850            | 4100               | 3.3 | 5.60            | 0.070         | 99    | 0.05             | 10                        | 80                        | 1.10                                | 70           |
| 1N6352 | 150                         | 141                            | 0.85                   | 1000           | 4500               | 2.8 | 7.00            | 0.065         | 114   | 0.05             | 10                        | 80                        | 1.10                                | 65           |
| 1N6353 | 160                         | 151                            | 0.80                   | 1200           | 5000               | 2.7 | 7.50            | 0.060         | 122   | 0.05             | 10                        | 80                        | 1.10                                | 65           |
| 1N6354 | 180                         | 170                            | 0.68                   | 1500           | 5600               | 2.4 | 9.00            | 0.050         | 137   | 0.05             | 10                        | 80                        | 1.10                                | 60           |
| 1N6355 | 200                         | 189                            | 0.65                   | 1200           | 6500               | 2.1 | 12.0            | 0.045         | 152   | 0.05             | 10                        | 80                        | 1.10                                | 55           |



## MECHANICAL CHARACTERISTICS

CASE: Hermetically sealed hard glass.

LEAD MATERIAL: Copper clad steel.

MARKING: Body painted, alpha numeric.

POLARITY: Cathode band.

DO-35

# 1N6309 thru 1N6355

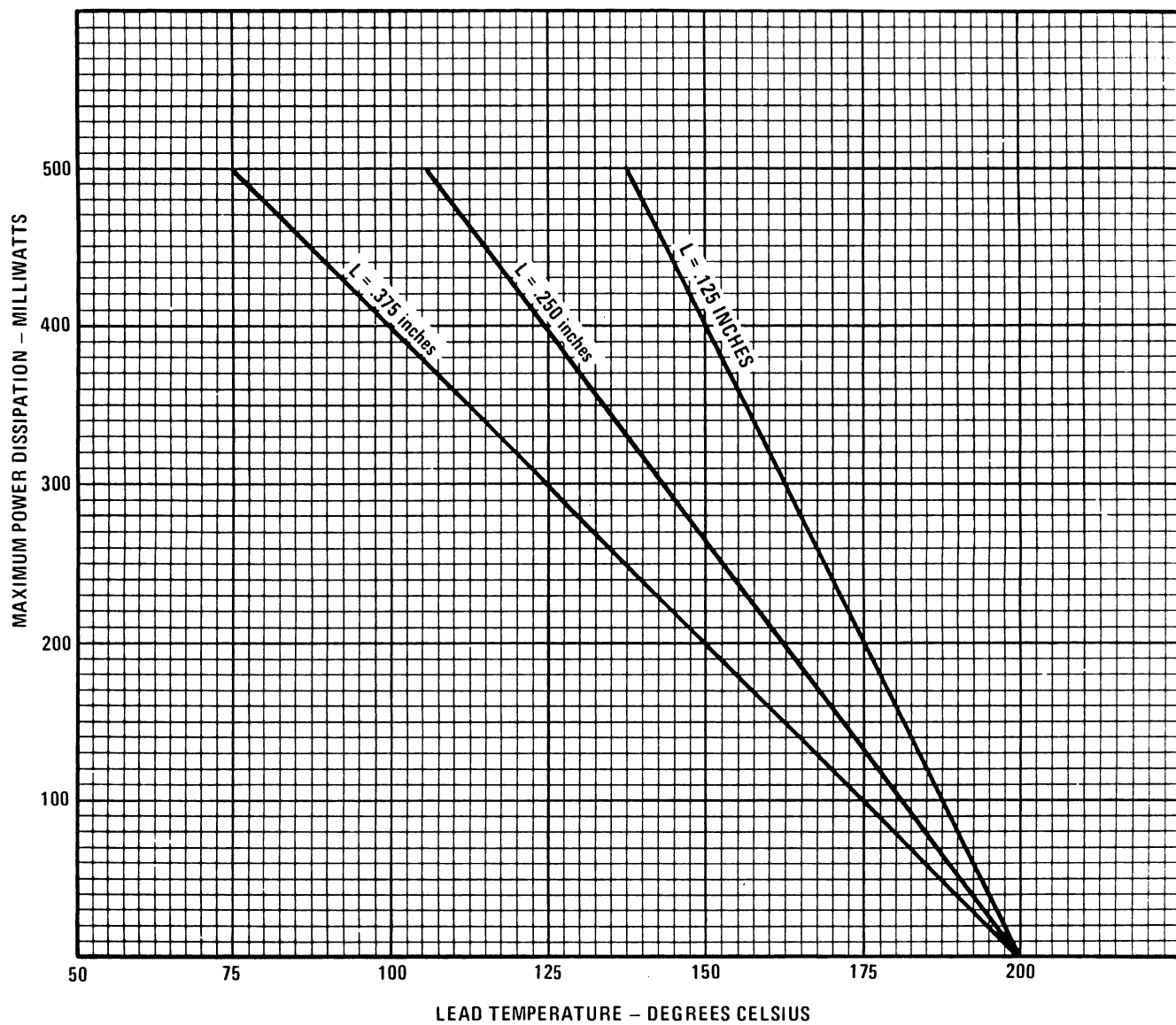


FIGURE 2. MAXIMUM POWER VS. LEAD TEMPERATURE