

# GSZ02M\*\*\*N1F Series

## Zener Diodes

### Product Description

Zener diode with 200mW power dissipation.

### Features

- Wide Zener Voltage Range Selection, 2.0V to 75V
- Vz Tolerance Selection of  $\pm 2\%$
- DFN1006-2L Package
- Band Indicates Cathode
- RoHS Compliant and Halogen Free

### Packages & Pin Assignments

| DFN1006-2L                                                                                                        | Equivalent Circuit                                                                  |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  <p>*Band Indicates Cathode</p> |  |

### Ordering and Marking Information

| Ordering Information                                                                |                                                          |                                                                               |                 |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|-----------------|
| Part Number                                                                         | Package                                                  | Part Marking                                                                  | Quantity / Reel |
| GSZ02M□□□N1F                                                                        | DFN1006-2L                                               | □□                                                                            | 10,000 PCS      |
| - <b>Product Code:</b><br>GSZ is Zener Diode                                        | - <b>Series Code:</b><br>02 w/ DFN1006-2L is MM8Z Series | - <b>Vz Tolerance:</b><br>M is 2%                                             |                 |
| - <b>Voltage Code:</b><br>□□□, such as 2V0 is 2.0V and 75V is 75V etc.              | - <b>Package Code:</b><br>N1 is DFN1006-2L               | - <b>Green Level:</b><br>F is RoHS Compliant and Halogen Free                 |                 |
| Marking Information                                                                 |                                                          |                                                                               |                 |
|  |                                                          | - □□<br>Device Marking please refer to the Electrical Characteristics Section |                 |

## Absolute Maximum Ratings (T<sub>A</sub>=25°C Unless Otherwise Specified)

| Symbol           | Parameter                                        | Value       | Unit |
|------------------|--------------------------------------------------|-------------|------|
| P <sub>D</sub>   | Power Dissipation                                | 200         | mW   |
| T <sub>J</sub>   | Maximum Junction Temperature Range               | +150        | °C   |
| T <sub>STG</sub> | Storage Temperature Range                        | -55 to +150 | °C   |
| V <sub>F</sub>   | Maximum Forward Voltage @ I <sub>F</sub> = 10 mA | 1           | V    |

## Electrical Characteristics (T<sub>A</sub>=25°C Unless Otherwise Specified)

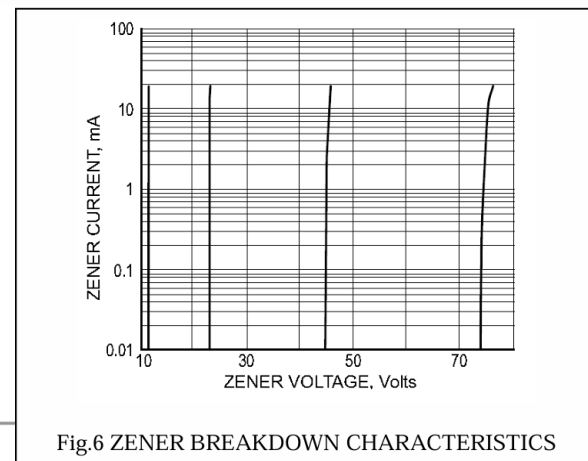
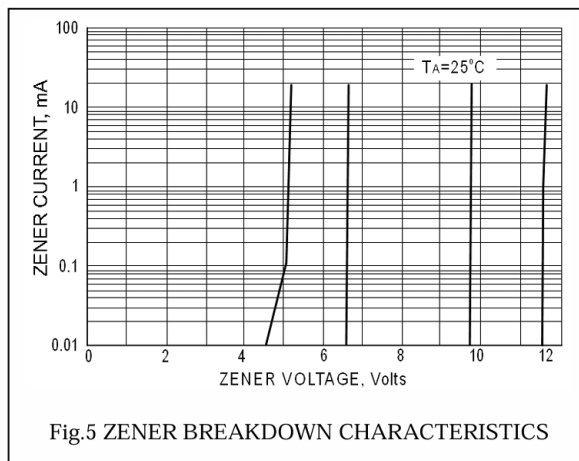
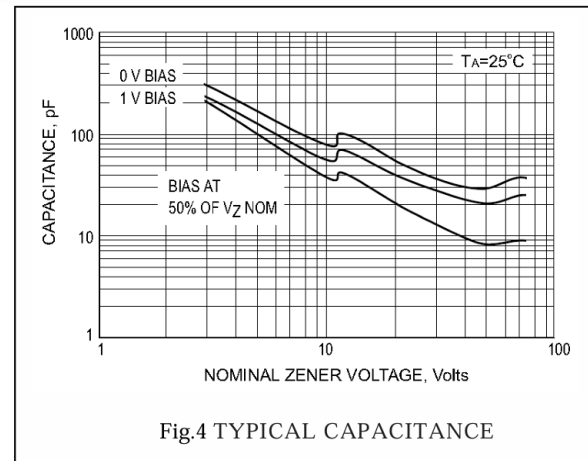
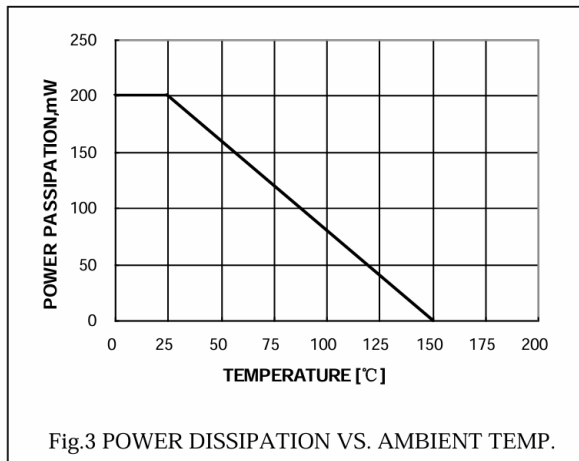
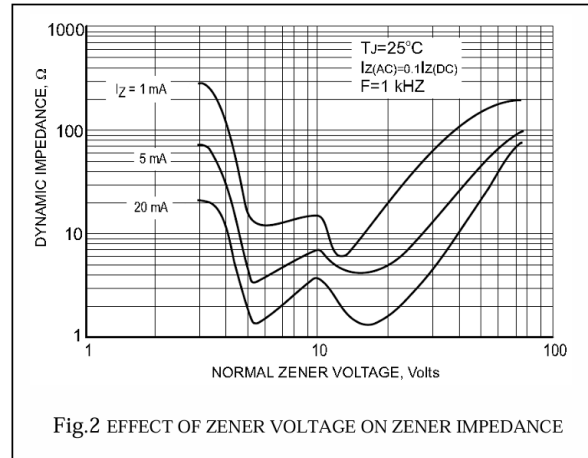
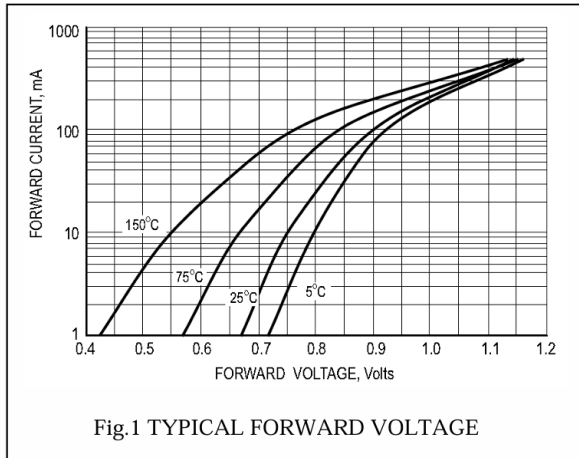
| Part Number  | Marking | V <sub>Z</sub> (V) @ I <sub>ZT</sub> |     |       | Z <sub>ZT</sub> max @ |                 | Z <sub>ZK</sub> max @ |                 | I <sub>R</sub> max @ |                |
|--------------|---------|--------------------------------------|-----|-------|-----------------------|-----------------|-----------------------|-----------------|----------------------|----------------|
|              |         |                                      |     |       | Z <sub>ZT</sub>       | I <sub>ZT</sub> | Z <sub>ZK</sub>       | I <sub>ZK</sub> | I <sub>R</sub>       | V <sub>R</sub> |
|              |         | Min                                  | Nom | Max   | Ω                     | mA              | Ω                     | mA              | uA                   | V              |
| GSZ02M2V0N1F | ±8      | 1.95                                 | 2.0 | 2.05  | 100                   | 5               | 564                   | 1               | 120                  | 0.5            |
| GSZ02M2V2N1F | 18      | 2.14                                 | 2.2 | 2.26  | 100                   | 5               | 564                   | 1               | 120                  | 0.7            |
| GSZ02M2V4N1F | 08      | 2.35                                 | 2.4 | 2.45  | 100                   | 5               | 564                   | 1               | 45                   | 1              |
| GSZ02M2V7N1F | 18      | 2.65                                 | 2.7 | 2.75  | 100                   | 5               | 564                   | 1               | 18                   | 1              |
| GSZ02M3V0N1F | 28      | 2.94                                 | 3.0 | 3.06  | 100                   | 5               | 564                   | 1               | 9                    | 1              |
| GSZ02M3V3N1F | 38      | 3.23                                 | 3.3 | 3.37  | 95                    | 5               | 564                   | 1               | 4.5                  | 1              |
| GSZ02M3V6N1F | 48      | 3.53                                 | 3.6 | 3.67  | 90                    | 5               | 564                   | 1               | 4.5                  | 1              |
| GSZ02M3V9N1F | 58      | 3.82                                 | 3.9 | 3.98  | 90                    | 5               | 564                   | 1               | 2.7                  | 1              |
| GSZ02M4V3N1F | 68      | 4.21                                 | 4.3 | 4.39  | 90                    | 5               | 564                   | 1               | 2.7                  | 1              |
| GSZ02M4V7N1F | 78      | 4.61                                 | 4.7 | 4.79  | 80                    | 5               | 470                   | 1               | 2.7                  | 2              |
| GSZ02M5V1N1F | +8      | 5.00                                 | 5.1 | 5.20  | 60                    | 5               | 451                   | 1               | 1.8                  | 2              |
| GSZ02M5V6N1F | 98      | 5.49                                 | 5.6 | 5.71  | 40                    | 5               | 376                   | 1               | 0.9                  | 2              |
| GSZ02M6V2N1F | A8      | 6.08                                 | 6.2 | 6.32  | 10                    | 5               | 141                   | 1               | 2.7                  | 4              |
| GSZ02M6V8N1F | B8      | 6.66                                 | 6.8 | 6.94  | 15                    | 5               | 75                    | 1               | 1.8                  | 4              |
| GSZ02M7V5N1F | C8      | 7.35                                 | 7.5 | 7.65  | 15                    | 5               | 75                    | 1               | 0.9                  | 5              |
| GSZ02M8V2N1F | D8      | 8.04                                 | 8.2 | 8.36  | 15                    | 5               | 75                    | 1               | 0.63                 | 5              |
| GSZ02M9V1N1F | E8      | 8.92                                 | 9.1 | 9.28  | 15                    | 5               | 94                    | 1               | 0.45                 | 6              |
| GSZ02M10VN1F | F8      | 9.80                                 | 10  | 10.20 | 20                    | 5               | 141                   | 1               | 0.18                 | 7              |
| GSZ02M11VN1F | G8      | 10.78                                | 11  | 11.22 | 20                    | 5               | 141                   | 1               | 0.09                 | 8              |
| GSZ02M12VN1F | H8      | 11.76                                | 12  | 12.24 | 25                    | 5               | 141                   | 1               | 0.09                 | 8              |
| GSZ02M13VN1F | J8      | 12.74                                | 13  | 13.26 | 30                    | 5               | 160                   | 1               | 0.09                 | 8              |
| GSZ02M15VN1F | K8      | 14.70                                | 15  | 15.30 | 30                    | 5               | 188                   | 1               | 0.045                | 10.5           |
| GSZ02M16VN1F | L8      | 15.68                                | 16  | 16.32 | 40                    | 5               | 188                   | 1               | 0.045                | 11.2           |
| GSZ02M18VN1F | M8      | 17.64                                | 18  | 18.36 | 45                    | 5               | 212                   | 1               | 0.045                | 12.6           |
| GSZ02M20VN1F | N8      | 19.60                                | 20  | 20.40 | 55                    | 5               | 212                   | 1               | 0.045                | 14.0           |
| GSZ02M22VN1F | P8      | 21.56                                | 22  | 22.44 | 55                    | 5               | 235                   | 1               | 0.045                | 15.4           |
| GSZ02M24VN1F | R8      | 23.52                                | 24  | 24.48 | 70                    | 5               | 235                   | 1               | 0.045                | 16.8           |

|              |    |       |    |       |     |   |     |     |       |      |
|--------------|----|-------|----|-------|-----|---|-----|-----|-------|------|
| GSZ02M27VN1F | S8 | 26.46 | 27 | 27.54 | 80  | 2 | 282 | 0.5 | 0.045 | 18.9 |
| GSZ02M30VN1F | T8 | 29.40 | 30 | 30.60 | 80  | 2 | 282 | 0.5 | 0.045 | 21.0 |
| GSZ02M33VN1F | U8 | 32.34 | 33 | 33.66 | 80  | 2 | 306 | 0.5 | 0.045 | 23.0 |
| GSZ02M36VN1F | V8 | 35.28 | 36 | 36.72 | 90  | 2 | 329 | 0.5 | 0.045 | 25.2 |
| GSZ02M39VN1F | X8 | 38.22 | 39 | 39.78 | 130 | 2 | 329 | 0.5 | 0.045 | 27.3 |
| GSZ02M43VN1F | Y8 | 42.14 | 43 | 43.86 | 150 | 2 | 353 | 0.5 | 0.045 | 30.1 |
| GSZ02M47VN1F | Z8 | 46.06 | 47 | 47.94 | 170 | 2 | 353 | 0.5 | 0.045 | 33.0 |
| GSZ02M51VN1F | -9 | 49.98 | 51 | 52.02 | 180 | 2 | 376 | 0.5 | 0.045 | 35.7 |
| GSZ02M56VN1F | =8 | 54.88 | 56 | 57.12 | 200 | 2 | 400 | 0.5 | 0.045 | 39.2 |
| GSZ02M62VN1F | ≅8 | 60.76 | 62 | 63.24 | 215 | 2 | 423 | 0.5 | 0.045 | 43.4 |
| GSZ02M68VN1F | >8 | 66.64 | 68 | 69.36 | 240 | 2 | 447 | 0.5 | 0.045 | 47.6 |
| GSZ02M75VN1F | <8 | 73.50 | 75 | 76.50 | 255 | 2 | 470 | 0.5 | 0.045 | 52.5 |

**NOTE:**

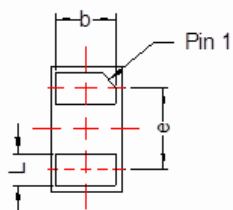
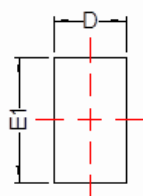
1. The Zener Voltage ( $V_Z$ ) is tested under pulse condition of 10mS.
2. The device numbers listed have a standard tolerance on the nominal Zener voltage of  $\pm 2\%$ .
3. The Zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc Zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

## Typical Characteristics



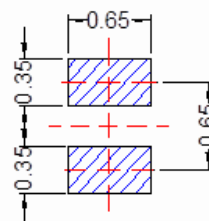
# DFN1006-2L

## Package Dimension

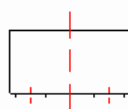
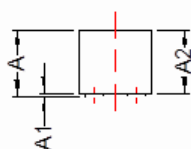


BACKSIDE VIEW

## Recommended Land Pattern



(Unit:mm)



| Dimensions |             |      |           |       |
|------------|-------------|------|-----------|-------|
| Symbol     | Millimeters |      | Inches    |       |
|            | Min         | Max  | Min       | Max   |
| A          | 0.45        | 0.60 | 0.018     | 0.024 |
| A1         | 0.00        | 0.05 | 0.000     | 0.002 |
| A2         | 0.40        | 0.60 | 0.016     | 0.024 |
| b          | 0.45        | 0.55 | 0.018     | 0.022 |
| D          | 0.55        | 0.65 | 0.022     | 0.026 |
| E1         | 0.95        | 1.05 | 0.037     | 0.041 |
| e          | 0.65 BSC    |      | 0.026 BSC |       |
| L          | 0.2         | 0.3  | 0.008     | 0.012 |

### NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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