

### HIGH-RELIABILITY PRODUCTS

#### Features

- Low dynamic impedance
- Hermetically sealed
- 5 Watt applications
- Low reverse leakage currents
- Small package

#### Specification

- Quick reference data

$V_R = 6.8V - 300V$   
 $I_Z (MAX) = 15.6mA - 700mA$   
 $Z_Z = 1\Omega - 950\Omega$   
 $I_R = 2\mu A - 150\mu A$

#### Description

These products are qualified to MIL-PRF-19500/356.  
 They can be supplied as JAN, JANTX, JANTXV and JANS grades.

#### Outline Drawing



| DIM            | Dimensions |       |             |      | Note |
|----------------|------------|-------|-------------|------|------|
|                | Inches     |       | Millimeters |      |      |
|                | MIN        | MAX   | MIN         | MAX  |      |
| A              | 0.085      | 0.140 | 2.16        | 3.56 | -    |
| B              | 1.00       | 1.30  | 25.4        | 33.0 | -    |
| C              | 0.140      | 0.185 | 3.56        | 4.70 | -    |
| D <sup>1</sup> | -          | 0.030 | -           | 0.8  | 1    |
| E              | 0.036      | 0.042 | 0.91        | 1.07 | -    |

Notes:

(1): Lead diameter uncontrolled over this region.

Figure 1: Outline Dimensions

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

| Device Types | V <sub>Z</sub> Nom | V <sub>Z</sub> Min | V <sub>Z</sub> Max | I <sub>Z</sub> Test Current<br>T <sub>A</sub> =+25°C | Z <sub>Z</sub> Imped. | Z <sub>K</sub> Knee Imped. | I <sub>Z</sub> Max DC Current | V <sub>Z</sub> (reg) Voltage Reg. | I <sub>ZSM</sub> @ T <sub>A</sub> =+25°C | V <sub>R</sub> Reverse Voltage | I <sub>R</sub> Reverse Current DC | αV <sub>Z</sub> Temp Coeff. | I <sub>R</sub> Reverse Current DC T <sub>A</sub> =+150°C | I <sub>ZK</sub> Test current |
|--------------|--------------------|--------------------|--------------------|--|-----------------------|----------------------------|-------------------------------|-----------------------------------|--|--------------------------------|-----------------------------------|-----------------------------|--|------------------------------|
|              | V                  | V                  | V                  | mA   | Ω                     | Ω                          | mA                            | V                                 | A  | V                              | μA                                | %/°C                        | μA   | mA                           |
| 1N4954       | 6.8                | 6.46               | 7.14               | 175  | 1                     | 1000                       | 700                           | 0.7                               | 29.3                                     | 5.2                            | 150                               | 0.05                        | 750  | 1                            |
| 1N4955       | 7.5                | 7.13               | 7.87               | 175  | 1.5                   | 800                        | 630                           | 0.7                               | 26.4                                     | 5.7                            | 100                               | 0.06                        | 500  | 1                            |
| 1N4956       | 8.2                | 7.79               | 8.61               | 150  | 1.5                   | 600                        | 580                           | 0.7                               | 24                                       | 6.2                            | 50                                | 0.06                        | 300  | 1                            |
| 1N4957       | 9.1                | 8.65               | 9.55               | 150  | 2                     | 400                        | 520                           | 0.7                               | 22                                       | 6.9                            | 25                                | 0.06                        | 200  | 1                            |
| 1N4958       | 10                 | 9.5                | 10.5               | 125  | 2                     | 125                        | 475                           | 0.8                               | 20                                       | 7.6                            | 25                                | 0.07                        | 200  | 1                            |
| 1N4959       | 11                 | 10.45              | 11.55              | 125  | 2.5                   | 130                        | 430                           | 0.8                               | 19                                       | 8.4                            | 10                                | 0.07                        | 150  | 1                            |
| 1N4960       | 12                 | 11.4               | 12.6               | 100  | 2.5                   | 140                        | 395                           | 0.8                               | 18                                       | 9.1                            | 10                                | 0.07                        | 150  | 1                            |
| 1N4961       | 13                 | 12.35              | 13.65              | 100  | 3                     | 145                        | 365                           | 0.9                               | 16                                       | 9.9                            | 10                                | 0.08                        | 150  | 1                            |
| 1N4962       | 15                 | 14.25              | 15.75              | 75   | 3.5                   | 150                        | 315                           | 1                                 | 12                                       | 11.4                           | 5                                 | 0.08                        | 100  | 1                            |
| 1N4963       | 16                 | 15.2               | 16.8               | 75   | 3.5                   | 155                        | 294                           | 1.1                               | 10                                       | 12.2                           | 5                                 | 0.08                        | 100  | 1                            |
| 1N4964       | 18                 | 17.1               | 18.9               | 65   | 4                     | 160                        | 264                           | 1.2                               | 9  | 13.7                           | 5                                 | 0.085                       | 100  | 1                            |
| 1N4965       | 20                 | 19                 | 21                 | 65   | 4.5                   | 165                        | 237                           | 1.5                               | 8  | 15.2                           | 2                                 | 0.085                       | 100  | 1                            |
| 1N4966       | 22                 | 20.9               | 23.1               | 50   | 5                     | 170                        | 216                           | 1.8                               | 7  | 16.7                           | 2                                 | 0.085                       | 100  | 1                            |
| 1N4967       | 24                 | 22.8               | 25.2               | 50   | 5                     | 175                        | 198                           | 2                                 | 6.5                                      | 18.2                           | 2                                 | 0.09                        | 100  | 1                            |
| 1N4968       | 27                 | 25.7               | 28.3               | 50   | 6                     | 180                        | 176                           | 2                                 | 6  | 20.6                           | 2                                 | 0.09                        | 100  | 1                            |
| 1N4969       | 30                 | 28.5               | 31.5               | 40   | 8                     | 190                        | 158                           | 2.5                               | 5.5                                      | 22.8                           | 2                                 | 0.09                        | 100  | 1                            |
| 1N4970       | 33                 | 31.4               | 34.6               | 40   | 10                    | 200                        | 144                           | 2.8                               | 5  | 25.1                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4971       | 36                 | 34.2               | 37.8               | 30   | 11                    | 220                        | 132                           | 3                                 | 4.5                                      | 27.4                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4972       | 39                 | 37.1               | 40.9               | 30   | 14                    | 230                        | 122                           | 3                                 | 4  | 29.7                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4973       | 43                 | 40.9               | 45.1               | 30   | 20                    | 240                        | 110                           | 3.3                               | 3.5                                      | 32.7                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4974       | 47                 | 44.7               | 49.3               | 25   | 25                    | 250                        | 100                           | 3.5                               | 3.2                                      | 35.8                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4975       | 51                 | 48.5               | 53.5               | 25   | 27                    | 270                        | 92                            | 4                                 | 3  | 38.8                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4976       | 56                 | 53.2               | 58.8               | 20   | 35                    | 320                        | 84                            | 4.4                               | 2.8                                      | 42.6                           | 2                                 | 0.095                       | 100  | 1                            |
| 1N4977       | 62                 | 58.9               | 65.1               | 20   | 42                    | 400                        | 76                            | 5                                 | 2.5                                      | 47.1                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4978       | 68                 | 64.6               | 71.4               | 20   | 50                    | 500                        | 70                            | 5.5                               | 2.2                                      | 51.7                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4979       | 75                 | 71.3               | 78.7               | 20   | 55                    | 620                        | 63                            | 6                                 | 2  | 56                             | 2                                 | 0.1                         | 100  | 1                            |
| 1N4980       | 82                 | 77.9               | 86.1               | 15   | 80                    | 720                        | 58                            | 6.6                               | 1.8                                      | 62.2                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4981       | 91                 | 86.5               | 95.5               | 15   | 90                    | 760                        | 52.5                          | 7.5                               | 1.6                                      | 69.2                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4982       | 100                | 95                 | 105                | 12   | 110                   | 800                        | 47.5                          | 8                                 | 1.4                                      | 76                             | 2                                 | 0.1                         | 100  | 1                            |
| 1N4983       | 110                | 104.5              | 115.5              | 12   | 125                   | 1000                       | 43                            | 9                                 | 1.2                                      | 83.6                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4984       | 120                | 114                | 126                | 10   | 170                   | 1150                       | 39.5                          | 10                                | 1  | 91.2                           | 2                                 | 0.1                         | 100  | 1                            |
| 1N4985       | 130                | 123.5              | 136.5              | 10   | 190                   | 1250                       | 36.6                          | 11                                | 0.8                                      | 98.8                           | 2                                 | 0.105                       | 100  | 1                            |
| 1N4986       | 150                | 142.5              | 157.5              | 8  | 330                   | 1500                       | 31.6                          | 13                                | 0.75                                     | 114                            | 2                                 | 0.105                       | 100  | 1                            |
| 1N4987       | 160                | 152                | 168                | 8  | 350                   | 1650                       | 29.4                          | 14                                | 0.7                                      | 121.6                          | 2                                 | 0.105                       | 100  | 1                            |
| 1N4988       | 180                | 171                | 189                | 5  | 450                   | 1750                       | 26.4                          | 16                                | 0.6                                      | 136.8                          | 2                                 | 0.11                        | 100  | 1                            |
| 1N4989       | 200                | 190                | 210                | 5  | 500                   | 1850                       | 23.6                          | 18                                | 0.5                                      | 152                            | 2                                 | 0.11                        | 100  | 1                            |

| Device Types | V <sub>Z</sub> Nom | V <sub>Z</sub> Min | V <sub>Z</sub> Max | I <sub>Z</sub> Test Current<br>T <sub>A</sub> =+25°C | Z <sub>Z</sub> Imped. | Z <sub>K</sub> Knee Imped. | I <sub>Z</sub> Max DC Current | V <sub>Z</sub> (reg) Voltage Reg. | I <sub>ZSM</sub> @ T <sub>A</sub> =+25°C | V <sub>R</sub> Reverse Voltage | I <sub>R</sub> Reverse Current DC | αV <sub>Z</sub> Temp Coeff. | I <sub>R</sub> Reverse Current DC T <sub>A</sub> =+150°C | I <sub>ZK</sub> Test current |
|--------------|--------------------|--------------------|--------------------|--|-----------------------|----------------------------|-------------------------------|-----------------------------------|--|--------------------------------|-----------------------------------|-----------------------------|--|------------------------------|
|              | V                  | V                  | V                  | mA   | Ω                     | Ω                          | mA                            | V                                 | A  | V                              | μA                                | %/°C                        | μA   | mA                           |
| 1N4990       | 220                | 209                | 231                | 5  | 550                   | 2000                       | 21.6                          | 19                                | 0.5                                      | 167                            | 2                                 | 0.115                       | 100  | 1                            |
| 1N4991       | 240                | 228                | 252                | 5  | 650                   | 2050                       | 19.8                          | 22                                | 0.4                                      | 182                            | 2                                 | 0.115                       | 100  | 1                            |
| 1N4992       | 270                | 257                | 283                | 5  | 800                   | 2100                       | 17.5                          | 25                                | 0.35                                     | 206                            | 2                                 | 0.12                        | 100  | 1                            |
| 1N4993       | 300                | 285                | 315                | 4  | 950                   | 2150                       | 15.6                          | 28                                | 0.3                                      | 228                            | 2                                 | 0.12                        | 100  | 1                            |

Notes:

(1): Operating Temperature: -55°C to 175°C

(2): Storage Temperature: -65°C to 175°C

## Ordering Information

| Part Number        | Description                                     |
|--------------------|---|
| 1N4954 THRU 1N4993 | Axial leaded hermetically sealed <sup>(1)</sup> |

Notes:

(1): Available in bulk or tape and reel packaging. Please consult factory for quantities.



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