

### 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.



---

### Important Notice

Information relating to this product and the application or design described herein is believed to be reliable, however such information is provided as a guide only and Semtech assumes no liability for any errors in this document, or for the application or design described herein. Semtech reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing order and should verify that such information is current and complete. Semtech warrants performance of its products to the specifications applicable at the time of sale, and all sales are made in accordance with Semtech's standard terms and conditions of sale.

SEMTECH PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS, OR IN NUCLEAR APPLICATIONS IN WHICH THE FAILURE COULD BE REASONABLY EXPECTED TO RESULT IN PERSONAL INJURY, LOSS OF LIFE OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. INCLUSION OF SEMTECH PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE UNDERTAKEN SOLELY AT THE CUSTOMER'S OWN RISK. Should a customer purchase or use Semtech products for any such unauthorized application, the consumer shall indemnify and hold Semtech and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages and attorney fees which could arise.

The Semtech name and logo are registered trademarks of the Semtech Corporation. All other trademarks and trade names mentioned may be marks and names of Semtech or their respective companies. Semtech reserves the right to make changes to, or discontinue any products described in this document without further notice. Semtech makes no warranty, representation guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.

©Semtech 2018

---

### Contact Information

Semtech Corporation  
200 Flynn Road, Camarillo, CA 93012  
Phone: (805) 498-2111, Fax: (805) 498-3804  
[www.semtech.com](http://www.semtech.com)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.