

### POWER DISCRETES

#### Description

Quick reference data

$$V_R = 6.8 - 220V$$

$$I_z(\text{MAX}) = 21.6\text{mA} - 700\text{mA}$$

$$Z_z = 1\Omega - 550\Omega$$

$$I_R = 2\mu\text{A} - 150\mu\text{A}$$

#### Features

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

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

#### Electrical Specifications

Electrical specifications @  $T_A = 25^\circ\text{C}$  unless otherwise specified.

| Device Types | $V_z$ Nom | $V_z$ Min | $V_z$ Max | $I_z$ Test Current<br>$T_A = +25^\circ\text{C}$ | $Z_z$ Imped. | $Z_K$ Knee Imped. | $I_z$ Max DC Current | $V_z$ (reg) Voltage Reg. | $I_{zsm}$ @<br>$T_A = +25^\circ\text{C}$ | $V_R$ Reverse Voltage | $I_R$ Reverse Current DC | $\alpha$ VZ Temp. Coeff. | $I_R$ Reverse Current DC<br>$T_A = +150^\circ\text{C}$ | $I_{zk}$ Test Current |
|--------------|-----------|-----------|-----------|---|--------------|-------------------|----------------------|--------------------------|--|-----------------------|--------------------------|--------------------------|--|-----------------------|
|              | V         | V         | V         | mA  | $\Omega$     | $\Omega$          | mA                   | V                        | A  | V                     | $\mu\text{A}$            | %/°C                     | $\mu\text{A}$  | mA                    |
| 1N4954       | 6.8       | 6.46      | 7.14      | 175   | 1            | 1000              | 700                  | .7                       | 29.3                                     | 5.2                   | 150                      | .05                      | 750  | 1.0                   |
| 1N4955       | 7.5       | 7.13      | 7.87      | 175   | 1.5          | 800               | 630                  | .7                       | 26.4                                     | 5.7                   | 100                      | .06                      | 500  | 1.0                   |
| 1N4956       | 8.2       | 7.79      | 8.61      | 150   | 1.5          | 600               | 580                  | .7                       | 24                                       | 6.2                   | 50                       | .06                      | 300  | 1.0                   |
| 1N4957       | 9.1       | 8.65      | 9.55      | 150   | 2            | 400               | 520                  | .7                       | 22                                       | 6.9                   | 25                       | .06                      | 200  | 1.0                   |
| 1N4958       | 10.0      | 9.50      | 10.50     | 125   | 2            | 125               | 475                  | .8                       | 20                                       | 7.6                   | 25                       | .07                      | 200  | 1.0                   |
| 1N4959       | 11.0      | 10.45     | 11.55     | 125   | 2.5          | 130               | 430                  | .8                       | 19                                       | 8.4                   | 10                       | .07                      | 150  | 1.0                   |
| 1N4960       | 12.0      | 11.40     | 12.60     | 100   | 2.5          | 140               | 395                  | .8                       | 18                                       | 9.1                   | 10                       | .07                      | 150  | 1.0                   |
| 1N4961       | 13.0      | 12.35     | 13.65     | 100   | 3            | 145               | 365                  | .9                       | 16                                       | 9.9                   | 10                       | .08                      | 150  | 1.0                   |
| 1N4962       | 15        | 14.25     | 15.75     | 75  | 3.5          | 150               | 315                  | 1.0                      | 12                                       | 11.4                  | 5.0                      | .08                      | 100  | 1.0                   |
| 1N4963       | 16        | 15.20     | 16.80     | 75  | 3.5          | 155               | 294                  | 1.1                      | 10                                       | 12.2                  | 5.0                      | .08                      | 100  | 1.0                   |
| 1N4964       | 18        | 17.10     | 18.90     | 65  | 4.0          | 160               | 264                  | 1.2                      | 9.0                                      | 13.7                  | 5.0                      | .085                     | 100  | 1.0                   |
| 1N4965       | 20        | 19.00     | 21.00     | 65  | 4.5          | 165               | 237                  | 1.5                      | 8.0                                      | 15.2                  | 2.0                      | .085                     | 100  | 1.0                   |
| 1N4966       | 22        | 20.90     | 23.10     | 50  | 5.0          | 170               | 216                  | 1.8                      | 7.0                                      | 16.7                  | 2.0                      | .085                     | 100  | 1.0                   |
| 1N4967       | 24        | 22.8      | 25.2      | 50  | 5            | 175               | 198                  | 2.0                      | 6.5                                      | 18.2                  | 2.0                      | .09                      | 100  | 1.0                   |
| 1N4968       | 27        | 25.7      | 28.3      | 50  | 6            | 180               | 176                  | 2.0                      | 6.0                                      | 20.6                  | 2.0                      | .09                      | 100  | 1.0                   |
| 1N4969       | 30        | 28.5      | 31.5      | 40  | 8            | 190               | 158                  | 2.5                      | 5.5                                      | 22.8                  | 2.0                      | .09                      | 100  | 1.0                   |
| 1N4970       | 33        | 31.4      | 34.6      | 40  | 10           | 200               | 144                  | 2.8                      | 5.0                                      | 25.1                  | 2.0                      | .095                     | 100  | 1.0                   |

**POWER DISCRETES**
**Electrical Specifications (Cont.)**

 Electrical specifications @  $T_A = 25^\circ\text{C}$  unless otherwise specified.

| Device Types | $V_Z$ Nom | $V_Z$ Min | $V_Z$ Max | $I_Z$ Test Current<br>$T_A = +25^\circ\text{C}$ | $Z_Z$ Imped. | $Z_K$ Knee Imped. | $I_Z$ Max DC Current | $V_Z$ (reg) Voltage Reg. | $I_{ZSM}$ @<br>$T_A = +25^\circ\text{C}$ | $V_R$ Reverse Voltage | $I_R$ Reverse Current DC | $\alpha$ VZ Temp. Coeff. | $I_R$ Reverse Current DC<br>$T_A = +150^\circ\text{C}$ | $I_{ZK}$ Test Current |
|--------------|-----------|-----------|-----------|---|--------------|-------------------|----------------------|--------------------------|--|-----------------------|--------------------------|--------------------------|--|-----------------------|
|              | V         | V         | V         | mA  | $\Omega$     | $\Omega$          | mA                   | V                        | A  | V                     | $\mu\text{A}$            | $\%/^\circ\text{C}$      | $\mu\text{A}$  | mA                    |
| 1N4971       | 36        | 34.2      | 37.8      | 30  | 11           | 220               | 132                  | 3.0                      | 4.5                                      | 27.4                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4972       | 39        | 37.1      | 40.9      | 30  | 14           | 230               | 122                  | 3.0                      | 4.0                                      | 29.7                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4973       | 43        | 40.9      | 45.1      | 30  | 20           | 240               | 110                  | 3.3                      | 3.5                                      | 32.7                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4974       | 47        | 44.7      | 49.3      | 25  | 25           | 250               | 100                  | 3.5                      | 3.2                                      | 35.8                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4975       | 51        | 48.5      | 53.5      | 25  | 27           | 270               | 92                   | 4.0                      | 3.0                                      | 38.8                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4976       | 56        | 53.2      | 58.8      | 20  | 35           | 320               | 84                   | 4.4                      | 2.8                                      | 42.6                  | 2.0                      | .095                     | 100  | 1.0                   |
| 1N4977       | 62        | 58.9      | 65.1      | 20  | 42           | 400               | 76                   | 5.0                      | 2.5                                      | 47.1                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4978       | 68        | 64.6      | 71.4      | 20  | 50           | 500               | 70                   | 5.5                      | 2.2                                      | 51.7                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4979       | 75        | 71.3      | 78.7      | 20  | 55           | 620               | 63                   | 6.0                      | 2.0                                      | 56                    | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4980       | 82        | 77.9      | 86.1      | 15  | 80           | 720               | 58                   | 6.6                      | 1.8                                      | 62.2                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4981       | 91        | 86.5      | 95.5      | 15  | 90           | 760               | 52.5                 | 7.5                      | 1.6                                      | 69.2                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4982       | 100       | 95.0      | 105       | 12  | 110          | 800               | 47.5                 | 8.0                      | 1.4                                      | 76.0                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4983       | 110       | 104.5     | 115.5     | 12  | 125          | 1000              | 43                   | 9.0                      | 1.2                                      | 83.6                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4984       | 120       | 114.0     | 126.0     | 10  | 170          | 1150              | 39.5                 | 10                       | 1.0                                      | 91.2                  | 2.0                      | .100                     | 100  | 1.0                   |
| 1N4985       | 130       | 123.5     | 136.5     | 10  | 190          | 1250              | 36.6                 | 11                       | .8                                       | 98.8                  | 2.0                      | .105                     | 100  | 1.0                   |
| 1N4986       | 150       | 142.5     | 157.5     | 8   | 330          | 1500              | 31.6                 | 13                       | .75                                      | 114.0                 | 2.0                      | .105                     | 100  | 1.0                   |
| 1N4987       | 160       | 152       | 168       | 8   | 350          | 1650              | 29.4                 | 14                       | .70                                      | 121.6                 | 2.0                      | .105                     | 100  | 1.0                   |
| 1N4988       | 180       | 171       | 189       | 5   | 450          | 1750              | 26.4                 | 16                       | .60                                      | 136.8                 | 2.0                      | .110                     | 100  | 1.0                   |
| 1N4989       | 200       | 190       | 210       | 5   | 500          | 1850              | 23.6                 | 18                       | .50                                      | 152.0                 | 2.0                      | .110                     | 100  | 1.0                   |
| 1N4990       | 220       | 209       | 231       | 5   | 550          | 2000              | 21.6                 | 19                       | .50                                      | 167.0                 | 2.0                      | 0.115                    | 100  | 1.0                   |

**Notes:**

- (1) Operating Temperature:  $-55^\circ\text{C}$  to  $175^\circ\text{C}$ .
- (2) Storage Temperature:  $-65^\circ\text{C}$  to  $175^\circ\text{C}$ .

**POWER DISCRETES**

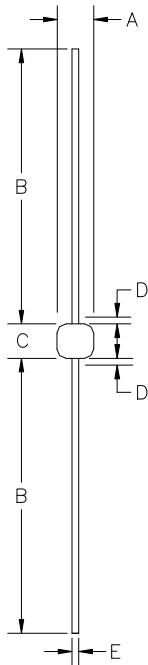
**Ordering Information**

| Part Number              | Description                                     |
|--------------------------|---|
| 1N4954<br>THRU<br>1N4990 | Axial leaded hermetically sealed <sup>(1)</sup> |

Note:

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

**Outline Drawing**



| DIM <sup>N</sup> | Dimensions |      |             |      | Note |
|------------------|------------|------|-------------|------|------|
|                  | Inches     |      | Millimeters |      |      |
|                  | MIN        | MAX  | MIN         | MAX  |      |
| A                | .085       | .140 | 2.16        | 3.56 | -    |
| B                | 1.00       | 1.30 | 25.4        | 33.0 | -    |
| C                | .140       | .185 | 3.56        | 4.70 | -    |
| D                | -          | .030 | -           | 0.8  | 1    |
| E                | .036       | .042 | 0.91        | 1.07 | -    |

Note:

(1) Lead diameter uncontrolled over this region.

**Contact Information**

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