

**POWER DISCRETES**
**Description**

Quick reference data

$V_{BR\ MIN} = 6.12 - 180V$

$V_{RWM} = 5.2 - 152V$

$V_c(max) = 11 - 273V$

$I_{(BR)}\ 1N6102 - 1N6137 = 5mA - 175mA$

**Features**

- ◆ Low dynamic impedance
- ◆ Hermetically sealed non-cavity construction
- ◆ 500 watt peak pulse power
- ◆ 1.5W continuous

These products are qualified to MIL-PRF-19500/516 and are preferred parts as listed in MIL-HDBK-5961. They can be supplied fully released as JANTX and JANTXV versions.

**Electrical Specifications**

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

| Device Type | Minimum Breakdown Voltage<br>$V_{(BR)} @ I_{(BR)}$ | Test Current<br>$I_{(BR)}$ | Working Pk. Reverse Voltage<br>$V_{RWM}$ | Maximum Reverse Current<br>$I_{R1}$ | Maximum Clamping Voltage<br>$V_c @ I_p$ | Maximum Pk. Pulse Current<br>$I_p$<br>$T_p = 1mS$ | Temp. Coeff. of<br>$V_{(BR)}$<br>$\alpha_{(VZ)}$ | Maximum Reverse Current<br>$I_{R2} @ 150^\circ C$ |
|-------------|----------------------------------------------------|----------------------------|------------------------------------------|-------------------------------------|-----------------------------------------|---------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
|             | Volts                                              | mA                         | Volts                                    | $\mu A$                             | Volts                                   | Amps                                              | %/ $^\circ C$                                    | $\mu A$                                           |
| 1N6102      | 6.12                                               | 175                        | 5.2                                      | 100                                 | 11.0                                    | 45.4                                              | 0.05                                             | 4,000                                             |
| 1N6103      | 6.75                                               | 175                        | 5.7                                      | 50                                  | 11.8                                    | 42.4                                              | 0.06                                             | 750                                               |
| 1N6103A     | 7.13                                               | 175                        | 5.7                                      | 50                                  | 11.2                                    | 44.6                                              | 0.06                                             | 750                                               |
| 1N6104      | 7.38                                               | 150                        | 6.2                                      | 20                                  | 12.7                                    | 39.4                                              | 0.06                                             | 500                                               |
| 1N6104A     | 7.79                                               | 150                        | 6.2                                      | 20                                  | 12.1                                    | 41.3                                              | 0.06                                             | 500                                               |
| 1N6105      | 8.19                                               | 150                        | 6.9                                      | 20                                  | 14.0                                    | 35.7                                              | 0.06                                             | 300                                               |
| 1N6105A     | 8.65                                               | 150                        | 6.9                                      | 20                                  | 13.4                                    | 37.3                                              | 0.06                                             | 300                                               |
| 1N6106      | 9.0                                                | 125                        | 7.6                                      | 20                                  | 15.2                                    | 32.9                                              | 0.07                                             | 200                                               |
| 1N6106A     | 9.50                                               | 125                        | 7.6                                      | 20                                  | 14.5                                    | 34.5                                              | 0.07                                             | 200                                               |
| 1N6107      | 9.9                                                | 125                        | 8.4                                      | 20                                  | 16.3                                    | 30.7                                              | 0.07                                             | 200                                               |
| 1N6107A     | 10.45                                              | 125                        | 8.4                                      | 20                                  | 15.6                                    | 32.0                                              | 0.07                                             | 200                                               |
| 1N6108      | 10.8                                               | 100                        | 9.1                                      | 20                                  | 17.7                                    | 28.2                                              | 0.07                                             | 150                                               |
| 1N6108A     | 11.4                                               | 100                        | 9.1                                      | 20                                  | 16.9                                    | 29.6                                              | 0.07                                             | 150                                               |
| 1N6109      | 11.7                                               | 100                        | 9.9                                      | 20                                  | 19.0                                    | 26.3                                              | 0.08                                             | 150                                               |
| 1N6109A     | 12.35                                              | 100                        | 9.9                                      | 20                                  | 18.2                                    | 27.5                                              | 0.08                                             | 150                                               |
| 1N6110      | 13.5                                               | 75                         | 11.4                                     | 20                                  | 21.9                                    | 22.8                                              | 0.08                                             | 100                                               |
| 1N6110A     | 14.25                                              | 75                         | 11.4                                     | 20                                  | 21.0                                    | 23.8                                              | 0.08                                             | 100                                               |
| 1N6111      | 14.4                                               | 75                         | 12.2                                     | 20                                  | 23.4                                    | 21.4                                              | 0.08                                             | 100                                               |
| 1N6111A     | 15.2                                               | 75                         | 12.2                                     | 20                                  | 22.3                                    | 22.4                                              | 0.08                                             | 100                                               |

**POWER DISCRETES**
**Electrical Specifications**

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

| Device Type | Minimum Breakdown Voltage<br>$V_{(BR)} @ I_{(BR)}$ | Test Current<br>$I_{(BR)}$ | Working Pk. Reverse Voltage<br>$V_{RWM}$ | Maximum Reverse Current<br>$I_{R1}$ | Maximum Clamping Voltage<br>$V_C @ I_P$ | Maximum Pk. Pulse Current<br>$I_P$<br>$T_P = 1\text{mS}$ | Temp. Coeff. of<br>$V_{(BR)}$<br>$\alpha_{(VZ)}$ | Maximum Reverse Current<br>$I_{R2} @ 150^\circ\text{C}$ |
|-------------|----------------------------------------------------|----------------------------|------------------------------------------|-------------------------------------|-----------------------------------------|----------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------|
|             | Volts                                              | mA                         | Volts                                    | $\mu\text{A}$                       | Volts                                   | Amps                                                     | $\%/^\circ\text{C}$                              | $\mu\text{A}$                                           |
| 1N6112      | 16.2                                               | 65                         | 13.7                                     | 1                                   | 26.3                                    | 19.0                                                     | 0.085                                            | 100                                                     |
| 1N6112A     | 17.1                                               | 65                         | 13.7                                     | 1                                   | 25.1                                    | 19.9                                                     | 0.085                                            | 100                                                     |
| 1N6113      | 18.0                                               | 65                         | 15.2                                     | 1                                   | 29.0                                    | 17.2                                                     | 0.085                                            | 100                                                     |
| 1N6113A     | 19.0                                               | 65                         | 15.2                                     | 1                                   | 27.7                                    | 18.0                                                     | 0.085                                            | 100                                                     |
| 1N6114      | 19.8                                               | 50                         | 16.7                                     | 1                                   | 31.9                                    | 15.7                                                     | 0.085                                            | 100                                                     |
| 1N6114A     | 20.9                                               | 50                         | 16.7                                     | 1                                   | 30.5                                    | 16.4                                                     | 0.085                                            | 100                                                     |
| 1N6115      | 21.6                                               | 50                         | 18.2                                     | 1                                   | 34.8                                    | 14.4                                                     | 0.09                                             | 100                                                     |
| 1N6115A     | 22.8                                               | 50                         | 18.2                                     | 1                                   | 33.3                                    | 15.0                                                     | 0.09                                             | 100                                                     |
| 1N6116      | 24.3                                               | 50                         | 20.6                                     | 1                                   | 39.2                                    | 12.8                                                     | 0.09                                             | 100                                                     |
| 1N6116A     | 25.7                                               | 50                         | 20.6                                     | 1                                   | 37.4                                    | 13.4                                                     | 0.09                                             | 100                                                     |
| 1N6117      | 27.0                                               | 40                         | 22.8                                     | 1                                   | 43.6                                    | 11.5                                                     | 0.09                                             | 100                                                     |
| 1N6117A     | 28.5                                               | 40                         | 22.8                                     | 1                                   | 41.6                                    | 12.0                                                     | 0.09                                             | 100                                                     |
| 1N6118      | 29.7                                               | 40                         | 25.1                                     | 1                                   | 47.9                                    | 10.4                                                     | 0.095                                            | 100                                                     |
| 1N6118A     | 31.4                                               | 40                         | 25.1                                     | 1                                   | 45.7                                    | 10.9                                                     | 0.095                                            | 100                                                     |
| 1N6119      | 32.4                                               | 30                         | 27.4                                     | 1                                   | 52.3                                    | 9.6                                                      | 0.095                                            | 100                                                     |
| 1N6119A     | 34.2                                               | 30                         | 27.4                                     | 1                                   | 49.9                                    | 10.0                                                     | 0.095                                            | 100                                                     |
| 1N6120      | 35.1                                               | 30                         | 29.7                                     | 1                                   | 56.2                                    | 8.9                                                      | 0.095                                            | 100                                                     |
| 1N6120A     | 37.1                                               | 30                         | 29.7                                     | 1                                   | 53.6                                    | 9.3                                                      | 0.095                                            | 100                                                     |
| 1N6121      | 38.7                                               | 30                         | 32.7                                     | 1                                   | 62.0                                    | 8.1                                                      | 0.095                                            | 100                                                     |
| 1N6121A     | 40.9                                               | 30                         | 32.7                                     | 1                                   | 59.1                                    | 8.5                                                      | 0.095                                            | 100                                                     |
| 1N6122      | 42.3                                               | 25                         | 35.8                                     | 1                                   | 67.7                                    | 7.4                                                      | 0.095                                            | 100                                                     |
| 1N6122A     | 44.7                                               | 25                         | 35.8                                     | 1                                   | 64.6                                    | 7.7                                                      | 0.095                                            | 100                                                     |
| 1N6123      | 45.9                                               | 25                         | 38.8                                     | 1                                   | 73.5                                    | 6.8                                                      | 0.095                                            | 100                                                     |
| 1N6123A     | 48.5                                               | 25                         | 38.8                                     | 1                                   | 70.1                                    | 7.1                                                      | 0.095                                            | 100                                                     |
| 1N6124      | 50.4                                               | 20                         | 42.6                                     | 1                                   | 80.7                                    | 6.2                                                      | 0.095                                            | 100                                                     |
| 1N6124A     | 53.2                                               | 20                         | 42.6                                     | 1                                   | 77.0                                    | 6.5                                                      | 0.095                                            | 100                                                     |

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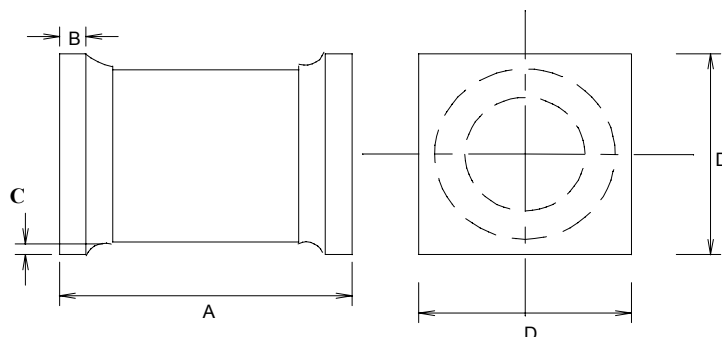
| Device Type | Minimum Breakdown Voltage<br>$V_{(BR)} @ I_{(BR)}$ | Test Current<br>$I_{(BR)}$ | Working Pk. Reverse Voltage<br>$V_{RWM}$ | Maximum Reverse Current<br>$I_{R1}$ | Maximum Clamping Voltage<br>$V_C @ I_P$ | Maximum Pk. Pulse Current<br>$I_P$<br>$T_P = 1\text{mS}$ | Temp. Coeff. of<br>$V_{(BR)} \propto \alpha_{(VZ)}$ | Maximum Reverse Current<br>$I_{R2} @ 150^\circ\text{C}$ |
|-------------|----------------------------------------------------|----------------------------|------------------------------------------|-------------------------------------|-----------------------------------------|----------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
|             | Volts                                              | mA                         | Volts                                    | $\mu\text{A}$                       | Volts                                   | Amps                                                     | $\%/^\circ\text{C}$                                 | $\mu\text{A}$                                           |
| 1N6125      | 55.8                                               | 20                         | 47.1                                     | 1                                   | 89.3                                    | 5.6                                                      | 0.1                                                 | 100                                                     |
| 1N6125A     | 58.9                                               | 20                         | 47.1                                     | 1                                   | 85.3                                    | 5.9                                                      | 0.1                                                 | 100                                                     |
| 1N6126      | 61.2                                               | 20                         | 51.7                                     | 1                                   | 98.0                                    | 5.1                                                      | 0.1                                                 | 100                                                     |
| 1N6126A     | 64.6                                               | 20                         | 51.7                                     | 1                                   | 97.1                                    | 5.1                                                      | 0.1                                                 | 100                                                     |
| 1N6127      | 67.5                                               | 20                         | 56.0                                     | 1                                   | 108.1                                   | 4.6                                                      | 0.1                                                 | 100                                                     |
| 1N6127A     | 71.3                                               | 20                         | 56.0                                     | 1                                   | 103.1                                   | 4.8                                                      | 0.1                                                 | 100                                                     |
| 1N6128      | 73.8                                               | 15                         | 62.2                                     | 1                                   | 118.2                                   | 4.2                                                      | 0.1                                                 | 100                                                     |
| 1N6128A     | 77.9                                               | 15                         | 62.2                                     | 1                                   | 112.8                                   | 4.4                                                      | 0.1                                                 | 100                                                     |
| 1N6129      | 81.9                                               | 15                         | 69.2                                     | 1                                   | 131.1                                   | 3.8                                                      | 0.1                                                 | 100                                                     |
| 1N6129A     | 86.5                                               | 15                         | 69.2                                     | 1                                   | 125.1                                   | 4.0                                                      | 0.1                                                 | 100                                                     |
| 1N6130      | 90.0                                               | 12                         | 76.0                                     | 1                                   | 144.1                                   | 3.5                                                      | 0.1                                                 | 100                                                     |
| 1N6130A     | 95.0                                               | 12                         | 76.0                                     | 1                                   | 137.6                                   | 3.6                                                      | 0.1                                                 | 100                                                     |
| 1N6131      | 99.0                                               | 12                         | 83.6                                     | 1                                   | 158.5                                   | 3.2                                                      | 0.1                                                 | 100                                                     |
| 1N6131A     | 104.5                                              | 12                         | 83.6                                     | 1                                   | 151.3                                   | 3.3                                                      | 0.1                                                 | 100                                                     |
| 1N6132      | 108.0                                              | 10                         | 91.2                                     | 1                                   | 172.9                                   | 2.9                                                      | 0.1                                                 | 100                                                     |
| 1N6132A     | 114.0                                              | 10                         | 91.2                                     | 1                                   | 165.1                                   | 3.0                                                      | 0.1                                                 | 100                                                     |
| 1N6133      | 117.0                                              | 10                         | 98.8                                     | 1                                   | 187.3                                   | 2.7                                                      | 0.105                                               | 100                                                     |
| 1N6133A     | 123.5                                              | 10                         | 98.8                                     | 1                                   | 178.8                                   | 2.8                                                      | 0.105                                               | 100                                                     |
| 1N6134      | 135.0                                              | 8                          | 114.0                                    | 1                                   | 216.2                                   | 2.3                                                      | 0.105                                               | 100                                                     |
| 1N6134A     | 142.5                                              | 8                          | 114.0                                    | 1                                   | 206.3                                   | 2.4                                                      | 0.105                                               | 100                                                     |
| 1N6135      | 144                                                | 8                          | 121.6                                    | 1                                   | 228.8                                   | 2.2                                                      | 0.105                                               | 100                                                     |
| 1N6135A     | 152                                                | 8                          | 121.6                                    | 1                                   | 218.4                                   | 2.3                                                      | 0.105                                               | 100                                                     |
| 1N6136      | 162                                                | 5                          | 136.8                                    | 1                                   | 257.4                                   | 1.9                                                      | 0.11                                                | 100                                                     |
| 1N6136A     | 171                                                | 5                          | 136.8                                    | 1                                   | 245.7                                   | 2.0                                                      | 0.11                                                | 100                                                     |
| 1N6137      | 180                                                | 5                          | 152.0                                    | 1                                   | 286.0                                   | 1.7                                                      | 0.11                                                | 100                                                     |
| 1N6137A     | 190                                                | 5                          | 152.0                                    | 1                                   | 273.0                                   | 1.8                                                      | 0.11                                                | 100                                                     |

**POWER DISCRETES**
**Ordering Information**

| Part Number                                        | Description                      |
|----------------------------------------------------|----------------------------------|
| 1N6102US thru 1N6137US<br>1N6103AUS thru 1N6137AUS | Surface Mount(US) <sup>(1)</sup> |

Note:

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

**Outline Drawing**


|   | Dimensions                                   |       |
|---|----------------------------------------------|-------|
|   | 1N6102US - 1N6137US<br>1N6103AUS - 1N6137AUS |       |
|   | Inches                                       |       |
|   | MIN                                          | MAX   |
| A | 0.2                                          | 0.225 |
| B | 0.019                                        | 0.028 |
| C | 0.003                                        | -     |
| D | 0.137                                        | 0.148 |

**Contact Information**

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