

POWER DISCRETES
Description

Quick reference data

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

$V_{RWM} = 5.2 - 152V$

$V_c\ (max) = 11 - 273V$

$I_{(BR)}\ 1N6138 - 1N6173 = 5mA - 175mA$

Features

- ◆ Low dynamic impedance
- ◆ Hermetically sealed non-cavity construction
- ◆ 1500 watt peak pulse power
- ◆ 7.5W 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 $V_{(BR)} @ I_{(BR)}$ | Test Current $I_{(BR)}$ | Working Pk. Reverse Voltage V_{RWM} | Maximum Reverse Current I_{R1} | Maximum Clamping Voltage $V_c @ I_p$ | Maximum Pk. Pulse Current I_p $T_p = 1mS$ | Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$ | Maximum Reverse Current $I_{R2} @ 150^\circ C$ |
|-------------|--|----------------------------|--|-------------------------------------|---|---|--|---|
| | Volts | mA | Volts | μA | Volts | Amps | %/ $^\circ C$ | μA |
| 1N6138 | 6.12 | 175 | 5.2 | 500 | 11.0 | 136.4 | 0.05 | 12,000 |
| 1N6139 | 6.75 | 175 | 5.7 | 300 | 11.8 | 127.1 | 0.06 | 3,000 |
| 1N6139A | 7.13 | 175 | 5.7 | 300 | 11.2 | 133.9 | 0.06 | 3,000 |
| 1N6140 | 7.38 | 150 | 6.2 | 100 | 12.7 | 118.1 | 0.06 | 2,000 |
| 1N6140A | 7.79 | 150 | 6.2 | 100 | 12.1 | 124.0 | 0.06 | 2,000 |
| 1N6141 | 8.19 | 150 | 6.9 | 100 | 14.0 | 107.1 | 0.06 | 1,200 |
| 1N6141A | 8.65 | 150 | 6.9 | 100 | 13.4 | 111.9 | 0.06 | 1,200 |
| 1N6142 | 9.0 | 125 | 7.6 | 100 | 15.2 | 98.7 | 0.07 | 800 |
| 1N6142A | 9.5 | 125 | 7.6 | 100 | 14.5 | 103.4 | 0.07 | 800 |
| 1N6143 | 9.9 | 125 | 8.4 | 20 | 16.3 | 92.0 | 0.07 | 800 |
| 1N6143A | 10.45 | 125 | 8.4 | 20 | 15.6 | 96.2 | 0.07 | 800 |
| 1N6144 | 10.8 | 100 | 9.1 | 20 | 17.7 | 84.7 | 0.07 | 600 |
| 1N6144A | 11.4 | 100 | 9.1 | 20 | 16.9 | 88.8 | 0.07 | 600 |
| 1N6145 | 11.7 | 100 | 9.9 | 20 | 19.0 | 78.9 | 0.08 | 600 |
| 1N6145A | 12.35 | 100 | 9.9 | 20 | 18.2 | 82.4 | 0.08 | 600 |
| 1N6146 | 13.5 | 75 | 11.4 | 20 | 21.9 | 68.5 | 0.08 | 400 |
| 1N6146A | 14.25 | 75 | 11.4 | 20 | 21.0 | 71.4 | 0.08 | 400 |
| 1N6147 | 14.4 | 75 | 12.2 | 20 | 23.4 | 64.1 | 0.08 | 400 |
| 1N6147A | 15.2 | 75 | 12.2 | 20 | 22.3 | 67.3 | 0.08 | 400 |

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|-------------|--|----------------------------|--|-------------------------------------|---|--|--|---|
| | Volts | mA | Volts | μA | Volts | Amps | $\%/^\circ\text{C}$ | μA |
| 1N6148 | 16.2 | 65 | 13.7 | 10 | 26.3 | 57.0 | 0.085 | 400 |
| 1N6148A | 17.1 | 65 | 13.7 | 10 | 25.1 | 59.8 | 0.085 | 400 |
| 1N6149 | 18.0 | 65 | 15.2 | 5 | 29.0 | 51.7 | 0.085 | 400 |
| 1N6149A | 19.0 | 65 | 15.2 | 5 | 27.7 | 54.2 | 0.085 | 400 |
| 1N6150 | 19.8 | 50 | 16.7 | 5 | 31.9 | 47.0 | 0.085 | 400 |
| 1N6150A | 20.9 | 50 | 16.7 | 5 | 30.5 | 49.2 | 0.085 | 400 |
| 1N6151 | 21.6 | 50 | 18.2 | 5 | 34.8 | 43.1 | 0.09 | 400 |
| 1N6151A | 22.8 | 50 | 18.2 | 5 | 33.3 | 45.0 | 0.09 | 400 |
| 1N6152 | 24.3 | 50 | 20.6 | 5 | 39.2 | 38.3 | 0.09 | 400 |
| 1N6152A | 25.7 | 50 | 20.6 | 5 | 37.4 | 40.1 | 0.09 | 400 |
| 1N6153 | 27.0 | 40 | 22.8 | 5 | 43.6 | 34.4 | 0.09 | 400 |
| 1N6153A | 28.5 | 40 | 22.8 | 5 | 41.6 | 36.0 | 0.09 | 400 |
| 1N6154 | 29.7 | 40 | 25.1 | 5 | 47.9 | 31.3 | 0.095 | 400 |
| 1N6154A | 31.4 | 40 | 25.1 | 5 | 45.7 | 32.8 | 0.095 | 400 |
| 1N6155 | 32.4 | 30 | 27.4 | 5 | 52.3 | 28.7 | 0.095 | 400 |
| 1N6155A | 34.2 | 30 | 27.4 | 5 | 49.9 | 30.1 | 0.095 | 400 |
| 1N6156 | 35.1 | 30 | 29.7 | 5 | 56.2 | 26.7 | 0.095 | 400 |
| 1N6156A | 37.1 | 30 | 29.7 | 5 | 53.6 | 28.0 | 0.095 | 400 |
| 1N6157 | 38.7 | 30 | 32.7 | 5 | 62.0 | 24.2 | 0.095 | 400 |
| 1N6157A | 40.9 | 30 | 32.7 | 5 | 59.1 | 25.4 | 0.095 | 400 |
| 1N6158 | 42.3 | 25 | 35.8 | 5 | 67.7 | 22.2 | 0.095 | 400 |
| 1N6158A | 44.7 | 25 | 35.8 | 5 | 64.6 | 23.2 | 0.095 | 400 |
| 1N6159 | 45.9 | 25 | 38.8 | 5 | 73.5 | 20.4 | 0.095 | 400 |
| 1N6159A | 48.5 | 25 | 38.8 | 5 | 70.1 | 21.4 | 0.095 | 400 |
| 1N6160 | 50.4 | 20 | 42.6 | 5 | 80.7 | 18.6 | 0.095 | 400 |
| 1N6160A | 53.2 | 20 | 42.6 | 5 | 77.0 | 19.5 | 0.095 | 400 |

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|-------------|---|-------------------------|---------------------------------------|----------------------------------|--|--|--|--|
| | Volts | mA | Volts | μA | Volts | Amps | $\%/\text{C}$ | μA |
| 1N6161 | 55.8 | 20 | 47.1 | 5 | 89.3 | 16.8 | 0.1 | 400 |
| 1N6161A | 58.9 | 20 | 47.1 | 5 | 85.3 | 17.6 | 0.1 | 400 |
| 1N6162 | 61.2 | 20 | 51.7 | 5 | 98.0 | 15.3 | 0.1 | 400 |
| 1N6162A | 64.6 | 20 | 51.7 | 5 | 97.1 | 15.4 | 0.1 | 400 |
| 1N6163 | 67.5 | 20 | 56.0 | 5 | 108.1 | 13.9 | 0.1 | 400 |
| 1N6163A | 71.3 | 20 | 56.0 | 5 | 103.1 | 14.5 | 0.1 | 400 |
| 1N6164 | 73.8 | 15 | 62.2 | 5 | 118.2 | 12.7 | 0.1 | 400 |
| 1N6164A | 77.9 | 15 | 62.2 | 5 | 112.8 | 13.3 | 0.1 | 400 |
| 1N6165 | 81.9 | 15 | 69.2 | 5 | 131.1 | 11.4 | 0.1 | 400 |
| 1N6165A | 86.5 | 15 | 69.2 | 5 | 125.1 | 12.0 | 0.1 | 400 |
| 1N6166 | 90.0 | 12 | 76.0 | 5 | 144.1 | 10.4 | 0.1 | 400 |
| 1N6166A | 95.0 | 12 | 76.0 | 5 | 137.6 | 10.9 | 0.1 | 400 |
| 1N6167 | 99.0 | 12 | 83.6 | 5 | 158.5 | 9.5 | 0.1 | 400 |
| 1N6167A | 104.5 | 12 | 83.6 | 5 | 151.3 | 9.9 | 0.1 | 400 |
| 1N6168 | 108.0 | 10 | 91.2 | 5 | 172.9 | 8.7 | 0.1 | 400 |
| 1N6168A | 114.0 | 10 | 91.2 | 5 | 165.1 | 9.1 | 0.1 | 400 |
| 1N6169 | 117.0 | 10 | 98.8 | 5 | 187.3 | 8.0 | 0.105 | 400 |
| 1N6169A | 123.5 | 10 | 98.8 | 5 | 178.8 | 8.4 | 0.105 | 400 |
| 1N6170 | 135.0 | 8 | 114.0 | 5 | 216.2 | 6.9 | 0.105 | 400 |
| 1N6170A | 142.5 | 8 | 114.0 | 5 | 206.3 | 7.3 | 0.105 | 400 |
| 1N6171 | 144 | 8 | 121.6 | 5 | 228.8 | 6.6 | 0.105 | 400 |
| 1N6171A | 152 | 8 | 121.6 | 5 | 218.4 | 6.9 | 0.105 | 400 |
| 1N6172 | 162 | 5 | 136.8 | 5 | 257.4 | 5.8 | 0.11 | 400 |
| 1N6172A | 171 | 5 | 136.8 | 5 | 245.7 | 6.1 | 0.11 | 400 |
| 1N6173 | 180 | 5 | 152.0 | 5 | 286.0 | 5.2 | 0.11 | 400 |
| 1N6173A | 190 | 5 | 152.0 | 5 | 273.0 | 5.5 | 0.11 | 400 |

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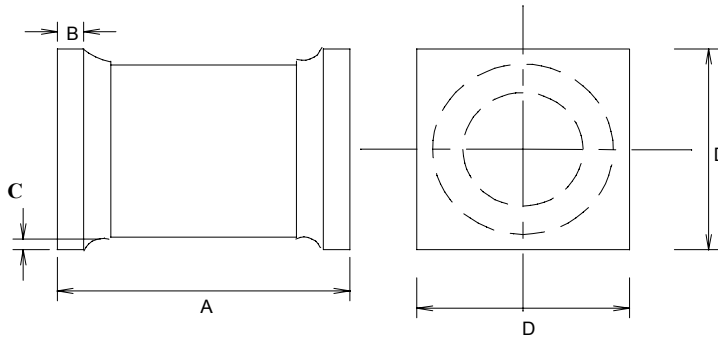
Ordering Information

| Part Number | Description |
|--|----------------------------------|
| 1N6138US thru 1N6173US 1N6139AUS thru 1N6173AUS | Surface Mount(US) ⁽¹⁾ |

Note:

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

Outline Drawing



| | Dimensions | |
|---|--|-------|
| | 1N6138US - 1N6173US 1N6139AUS - 1N6173AUS | |
| | Inches | |
| | MIN | MAX |
| A | 0.205 | 0.245 |
| B | 0.019 | 0.028 |
| C | 0.003 | - |
| D | 0.183 | 0.202 |

Contact Information

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