

DIGITRON SEMICONDUCTORS

1N3288(A)-1N3297(A)

HIGH POWER RECTIFIER

MAXIMUM RATINGS

| Part number | | Maximum peak repetitive reverse voltage | Maximum non-repetitive peak reverse voltage | Maximum direct reverse voltage | Maximum peak reverse current |
|-------------|---------|---|---|------------------------------------|------------------------------|
| | | V_{RRM} | V_{RSM} | V_R | I_{RRM} |
| | | $T_C = -40^\circ \text{ to } +200^\circ \text{C}$ | $T_C = 25^\circ \text{ to } 200^\circ \text{C}$ | $T_C = -40^\circ \text{ to } +200$ | $T_C = 130^\circ \text{C}$ |
| | | V | V | V | mA |
| 1N3288 | 1N3288A | 100 | 200 | 100 | 24 |
| 1N3289 | 1N3289A | 200 | 300 | 200 | 24 |
| 1N3290 | 1N3290A | 300 | 400 | 300 | 24 |
| 1N3291 | 1N3291A | 400 | 525 | 400 | 24 |
| 1N3292 | 1N3292B | 500 | 650 | 500 | 21 |
| 1N3293 | 1N3293A | 600 | 800 | 600 | 17 |
| 1N3294 | 1N3294A | 800 | 1050 | 800 | 13 |
| 1N3295 | 1N3295A | 1000 | 1300 | 1000 | 11 |
| 1N3296 | 1N3296A | 1200 | 1600 | 1200 | 9 |

ELECTRICAL CHARACTERISTICS

| Characteristics | Symbol | Non-A suffix | A suffix | Test Conditions | |
|---|---------------|--------------------------|--------------------------|--|--|
| Average forward current | $I_{F(AV)}$ | 100A | | 180° sinusoidal conduction, $T_C = 130^\circ \text{C}$ | |
| Maximum surge current | I_{FSM} | 1500A | 2200A | Half cycle, 50Hz sine wave | Following any rated load condition and with rated V_{RRM} applied |
| | | 1600A | 2300A | Half cycle, 60Hz sine wave | |
| | | 1800A | 2600A | Half cycle, 50Hz sine wave | Following any rated load condition and with V_{RRM} applied following surge = 0. |
| | | 1900A | 2700A | Half cycle, 60Hz sine wave | |
| Maximum I^2t for fusing | I^2t | 11500 A ² s | 24000 A ² s | t = 10ms | With rated V_{RRM} applied following surge, initial $T_J = 200^\circ \text{C}$ |
| | | 10500 A ² s | 22000 A ² s | t = 8.3ms | |
| Maximum I^2t for individual device fusing | | 16500 A ² s | 34000 A ² s | t = 10ms | With $V_{RRM} = 0$ following surge, initial $T_J = 200^\circ \text{C}$ |
| | | 15000 A ² s | 31000 A ² s | t = 8.3ms | |
| Maximum $I^2\sqrt{t}$ for individual device fusing ⁽⁴⁾ | $I^2\sqrt{t}$ | 165000 A ² √s | 340000 A ² √s | t = 0.1 to 10ms, $V_{RRM} = 0$ following surge | |
| Maximum peak forward voltage | V_{FM} | 1.5V | | $I_{FAV} = 100A, T_C = 130^\circ \text{C}$ | |

THERMAL CHARACTERISTICS

| Characteristics | Symbol | Test Conditions |
|--|-----------------|--------------------------|
| Operating junction and storage temperature range | T_J, T_{stg} | -40° to 200°C |
| Operating junction and storage temperature range | T_J, T_{stg} | 1N3292B = -65° to +200°C |
| Maximum thermal resistance | $R_{\theta JC}$ | 0.4°C/W junction to case |
| Maximum thermal resistance | $R_{\theta CS}$ | 0.1°C/W case to sink |

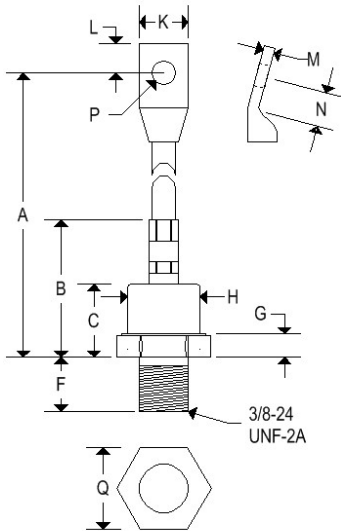
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MECHANICAL CHARACTERISTICS

| | |
|-------------------------|--------------------------------|
| Case | DO-8(R) |
| Marking | Alpha numeric |
| Normal polarity | Cathode is stud |
| Reverse polarity | Anode is stud (add "R" suffix) |



| | DO-8(R) | | | |
|---|---------|-------|-------------|--------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| A | 4.375 | 4.625 | 111.13 | 117.47 |
| B | - | 1.625 | - | 41.270 |
| C | 0.875 | 0.960 | 22.230 | 24.380 |
| F | 0.610 | 0.640 | 15.500 | 16.250 |
| G | 0.327 | 0.347 | 8.310 | 8.810 |
| H | 0.900 | 0.910 | 22.860 | 23.110 |
| K | 0.500 | 0.600 | 12.700 | 15.240 |
| L | 0.297 | 0.327 | 7.550 | 8.300 |
| M | 0.070 | 0.100 | 1.780 | 2.540 |
| N | 0.350 | 0.410 | 8.900 | 10.410 |
| P | 0.271 | 0.291 | 6.890 | 7.390 |
| Q | 1.050 | 1.060 | 26.670 | 26.920 |

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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Figure 1
Typical Forward Characteristics

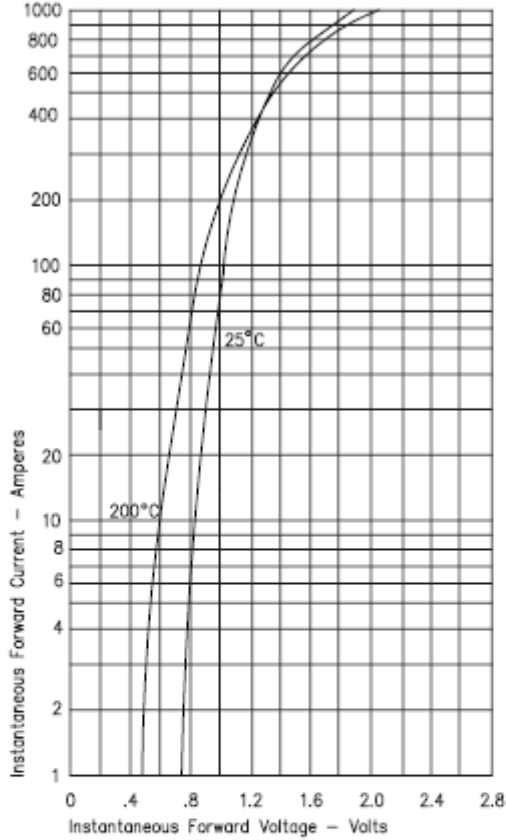


Figure 3
Forward Current Derating

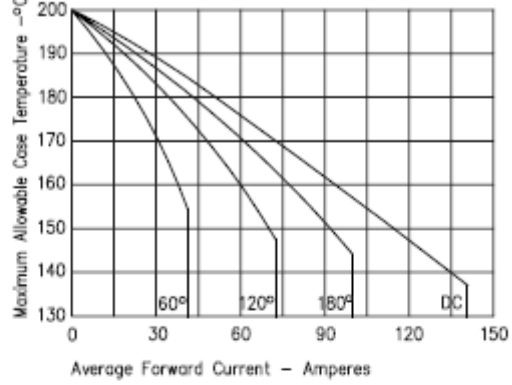


Figure 5
Transient Thermal Impedance

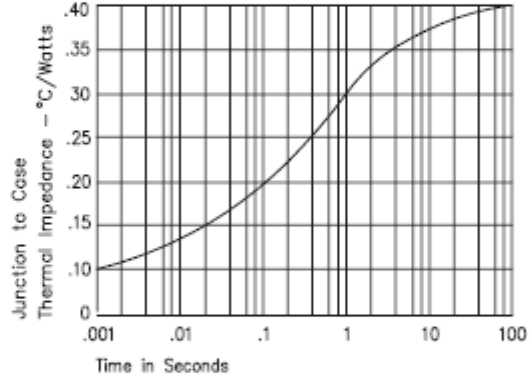


Figure 2
Typical Reverse Characteristics

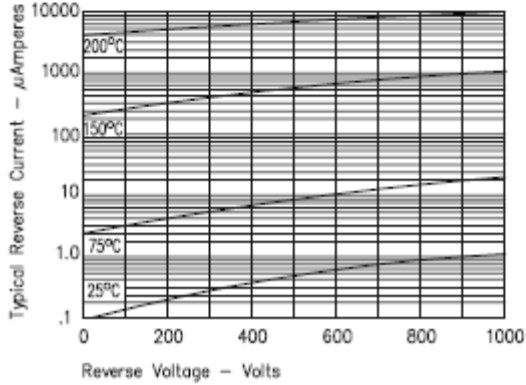


Figure 7
Maximum Nonrepetitive Surge Current

