New Jersey Semi-Conductor Products, Inc.

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# 1N3208 SERIES

## 15 Amp Stud-mounted Silicon Rectifier Diodes

**Major Ratings and Characteristics**

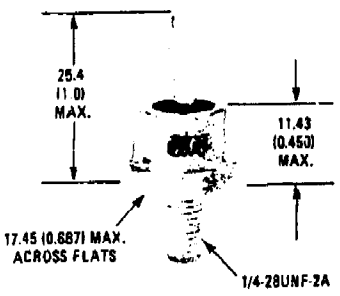
| | | 1N3208 | Units |
|---|---|---|---|
| $I_{F(AV)}$ | | 15* | A |
| @ $T_C$ | | 150* | °C |
| $I_{FSM}$ | @ 50 Hz | 239 | A |
| | @ 60 Hz | 250* | |
| $I^2t$ | @ 50 Hz | 286 | $A^2s$ |
| | @ 60 Hz | 260 | |
| $I^2\sqrt{t}$ | | 3870 | $A^2\sqrt{s}$ |
| $V_{RRM}$ Range | | 50-600 | V |

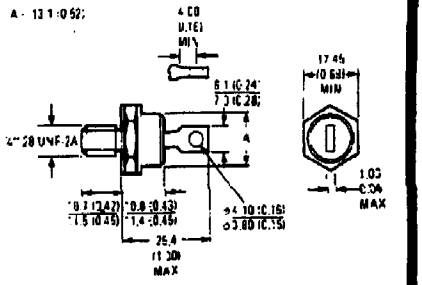
*JEDEC registered values.

**Description/Features**

- Low thermal impedance
- High case temperature
- Excellent reliability
- Maximum design flexibility
- Can be made to meet stringent military, aerospace and other high-reliability requirements.

**CASE STYLE AND DIMENSIONS**



Conforms TO JEDEC Outline DO-203AB (DO-5)
All Dimensions in Millimeters and (Inches)

Quality Semi-Conductors

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## VOLTAGE RATINGS

| Part Number | | $V_{RRM}$ – Max. Repetitive Peak Reverse Voltage (V) | $V_R$ – Max. Direct Reverse Voltage (V) |
|---|---|---|---|
| cathode-to-case | anode-to-case | $T_J$ = -65°C to 175°C | $T_J$ = -65°C to 175°C |
| 1N3208 | 1N3208R | 50* | 50* |
| 1N3209 | 1N3209R | 100* | 100* |
| 1N3210 | 1N3210R | 200* | 200* |
| 1N3211 | 1N3211R | 300* | 300* |
| 1N3212 | 1N3212R | 400* | 400* |
| 1N3213 | 1N3213R | 500* | 500* |
| 1N3214 | 1N3214R | 600* | 600* |

## ELECTRICAL SPECIFICATIONS

| | | | Units | Conditions | |
|---|---|---|---|---|---|
| $I_{F(AV)}$ | Max. average forward current | 15* | A | 180° sinusoidal conduction, max. $T_C$ = 150°C* | |
| $I_{FSM}$ | Max. peak one-cycle non-repetitive surge current | 239 | A | Half cycle 50 Hz sine wave or 8 ms rectangular pulse | Following any rated load condition and with rated $V_{RRM}$ applied |
| | | 250* | | Half cycle 60 Hz sine wave or 5 ms rectangular pulse | |
| | | 284 | | Half cycle 50 Hz sine wave or 8 ms rectangular pulse | Following any rated load condition and with $V_{RRM}$ applied following surge = 0. |
| | | 297 | | Half cycle 60 Hz sine wave or 5 ms rectangular pulse | |
| $I^2t$ | Max. $I^2t$ for fusing | 286 | $A^2s$ | t = 10 ms | With rated $V_{RRM}$ applied following surge, initial $T_J$ = 150°C. |
| | | 260 | | t = 8.3 ms | |
| | Max. $I^2t$ for individual device fusing | 403 | | t = 10 ms | With $V_{RRM}$ = 0 following surge, initial $T_J$ = 150°C |
| | | 368 | | t = 8.3 ms | |
| $I^2\sqrt{t}$ | Max. $I^2\sqrt{t}$ for individual device fusing ① | 3870 | $A^2\sqrt{s}$ | t = 0.1 to 10 ms, $V_{RRM}$ = 0 following surge. | |
| $V_{FM}$ | Max. peak forward voltage | 1.6* | V | $I_{F(AV)}$ = 15A (47.1A peak), $T_C$ = 150°C. | |
| $I_{R(AV)}$ | Max. average reverse current | 10* | mA | Max. rated $I_{F(AV)}$ and $T_C$ = 150°C | |

## THERMAL MECHANICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| $T_J$ | Max. operating junction temperature range | -65 to 175* | °C | |
| $T_{stg}$ | Max. storage temperature range | -65 to 175* | °C | |
| $R_{thJC}$ | Max. internal thermal resistance, junction-to-case | 0.65 | deg C/W | DC operation |
| $R_{thCS}$ | Thermal resistance, case-to-sink | 0.25 | deg C/W | Mounting surface flat, smooth, and greased |
| T | Mounting torque | Min. 2.3 (20)<br>Max. 3.5 (30) | N·m<br>(lbf-in) | Non-lubricated threads |
| wt | Approximate weight | 28.5 (1) | g (oz) | |
| | Case style | DO-203AB(DO-5) | | JEDEC |

* JEDEC registered values.

① $I^2t$ for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$.

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