



## A1A:15.XX

### VOLTAGE RATINGS

| Part Number | $V_{RRM}, V_R$ (V)<br>Max. rep. peak reverse voltage |                                  | $V_{RSM}, V_R$ (V) Max. non-rep. peak reverse voltage |
|-------------|--|----------------------------------|---|
|             | $T_J = 0$ to $180^\circ\text{C}$                     | $T_J = -40$ to $0^\circ\text{C}$ | $T_J = 25$ to $180^\circ\text{C}$                     |
| A1A:15.02   | 200  | 200                              | 300   |
| A1A:15.04   | 400  | 400                              | 500   |
| A1A:15.06   | 600  | 600                              | 700   |
| A1A:15.08   | 800  | 800                              | 900   |
| A1A:15.10   | 1000   | 1000                             | 1100  |
| A1A:15.12   | 1200   | 1200                             | 1300  |
| A1A:15.14   | 1400   | 1400                             | 1500  |
| A1A:15.16   | 1600   | 1600                             | 1700  |

This datasheet applies to:

**Metric thread: A1A:15.XX,  
A1B:15.XX**

**Inch thread: A2A:15.XX,  
A2B:15.XX**

### MAXIMUM ALLOWABLE RATINGS

| PARAMETER                                    | VALUE      | UNITS                            | NOTES   |
|--|------------|----------------------------------|---|
| $T_J$ Junction Temperature                   | -40 to 180 | $^\circ\text{C}$                 | -   |
| $T_{stg}$ Storage Temperature                | -40 to 180 | $^\circ\text{C}$                 | -   |
| $I_{F(AV)}$ Max. Av. current<br>@ Max. $T_C$ | 15         | A                                | 180° half sine wave   |
|  | 125        | $^\circ\text{C}$                 |   |
| $I_{F(RMS)}$ Nom. RMS current                | 27         | A                                | -   |
| $I_{FSM}$ Max. Peak non-rep. surge current   | 0.23       | K kA                             | 50 Hz half cycle sine wave  |
|  | 0.25       |                                  | 60 Hz half cycle sine wave  |
|  | 0.28       |                                  | 50 Hz half cycle sine wave  |
|  | 0.30       |                                  | 60 Hz half cycle sine wave  |
| $I^2t$ Max. $I^2t$ capability                | 0.24       | kA <sup>2</sup> s                | t = 10ms  |
|  | 0.26       |                                  | t = 8.3 ms  |
|  | 0.34       |                                  | t = 10ms  |
|  | 0.37       |                                  | t = 8.3 ms  |
| $I^2t^{1/2}$ Max. $I^2t^{1/2}$ capability    | 2.4        | kA <sup>2</sup> s <sup>1/2</sup> | Initial $T_J = 180^\circ\text{C}$ , no voltage applied after surge.<br>$I^2t$ for time $t_x = I^2t^{1/2} * t_x^{1/2}$ . (0.1 < $t_x$ < 10ms). |
| F Mounting Force                             | 2(~15)     | N.m(Lbf.in)                      | -   |



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## CHARACTERISTICS

| PARAMETER  | MIN.            | TYP.    | MAX.  | UNITS  | TEST CONDITIONS  |
|--|-----------------|---------|-------|--------|--|
| V <sub>FM</sub> Peak forward voltage                   | ---             | ---     | 1.30  | V      | Initial T <sub>J</sub> = 25°C, sinusoidal wave, I <sub>peak</sub> = 47 A.                                  |
| V <sub>F(TO)1</sub> Low-level threshold                | ---             | ---     | 0.85  | V      | T <sub>J</sub> = 180°C   |
| V <sub>F(TO)2</sub> High-level threshold               | ---             | ---     | 1.00  |        | Av. power = V <sub>F(TO)</sub> * I <sub>F(AV)</sub> + r <sub>F</sub> * [I <sub>F(RMS)</sub> ] <sup>2</sup> |
| r <sub>F1</sub> Low-level resistance                   | ---             | ---     | 10.00 | m      | Use low values for I <sub>FM</sub> < I <sub>F(AV)</sub>  |
| r <sub>F2</sub> High-level resistance                  | ---             | ---     | 5.00  |        |  |
| I <sub>RM</sub> Peak reverse current                   | ---             | ---     | 1.50  | mA     | T <sub>J</sub> = 180°C. Max. Rated V <sub>RRM</sub>  |
| R <sub>thJC</sub> Thermal resistance, junction-to-case | ---             | ---     | 3.70  | °C/W   | DC operation   |
|  | ---             | ---     | 4.50  | °C/W   | 180° sine wave   |
|  | ---             | ---     | 4.90  | °C/W   | 120° rectangular wave  |
| R <sub>thCS</sub> Thermal resistance, case-to-sink     | ---             | ---     | 1.00  | °C/W   | Mtg. Surface smooth, flat and greased. Single side.  |
| wt Weight  | ---             | 7(0.25) | ---   | g(oz.) | ---  |
| Case Style   | DO-203AA (DO-4) |         |       | JEDEC  | ---  |

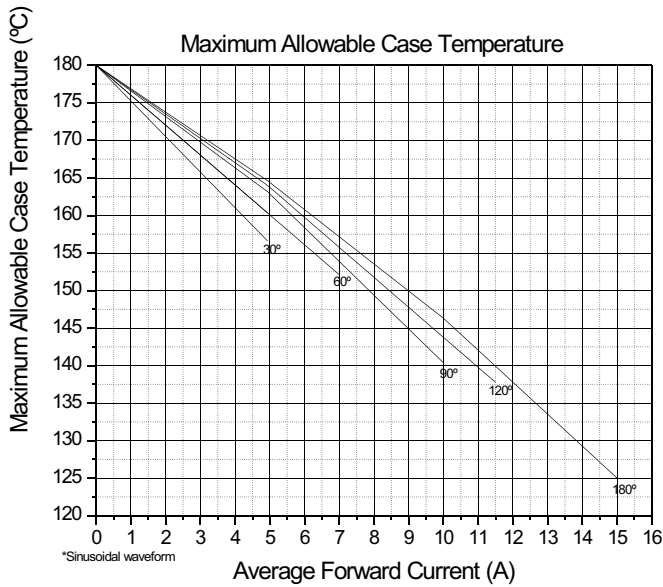


Fig. 1 - Current Ratings Characteristics

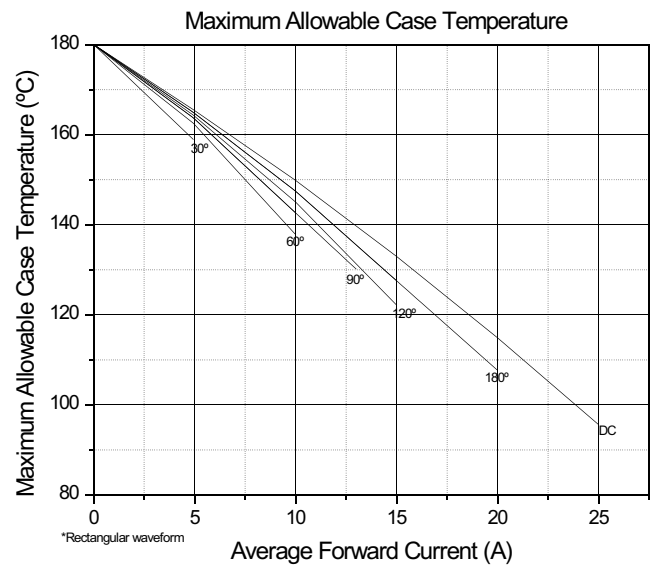


Fig. 2 - Current Ratings Characteristics



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Fig. 3 - On-State Power Loss Characteristics

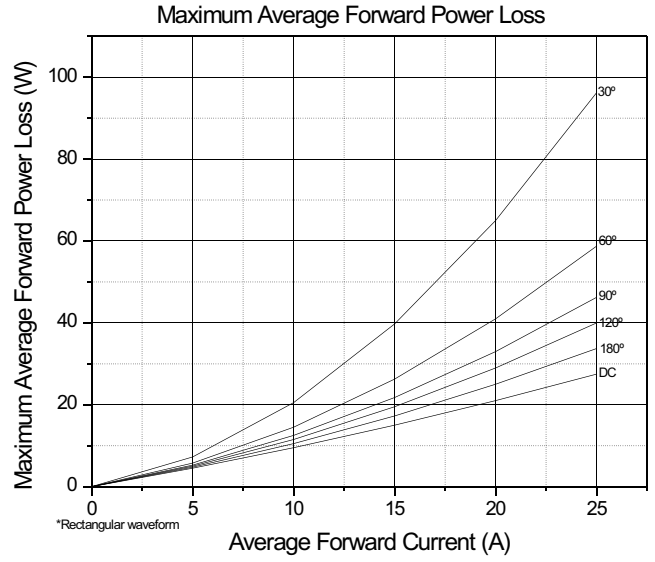


Fig. 4 - On-State Power Loss Characteristics

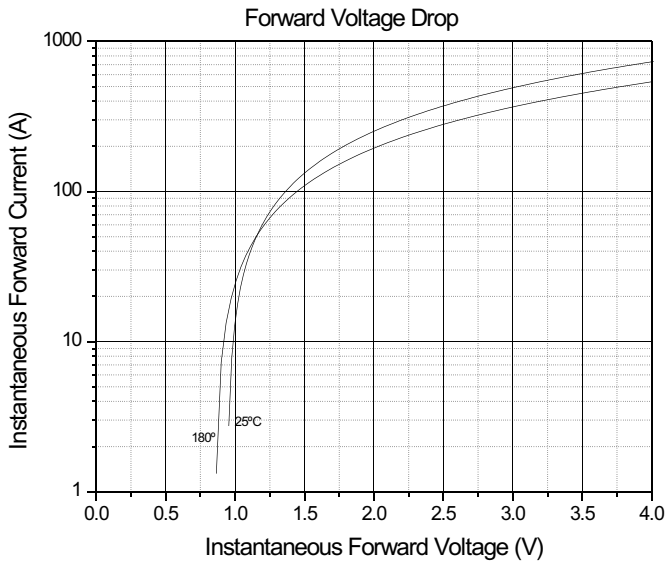


Fig. 5 - Forward Voltage Drop Characteristics

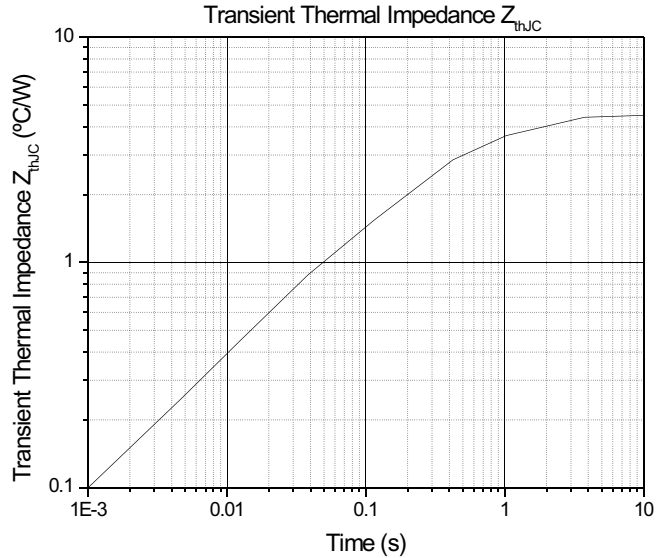
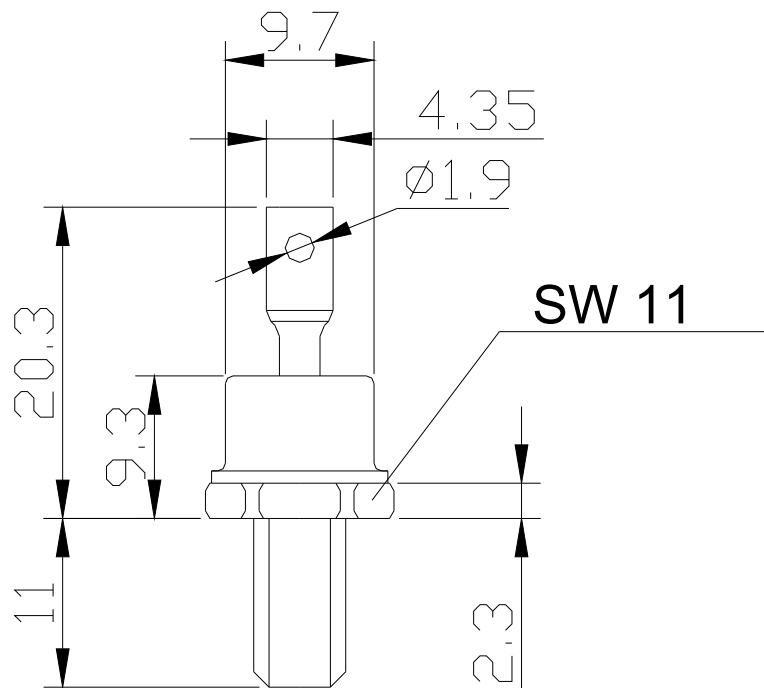


Fig. 6 - Transient Thermal Impedance Characteristics



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**DO-203AA (DO-4)**



**M6 x 1**  
**10/32 UNF 2A**

**Fig. 7 - Outline Characteristics**