



# Rectifier Diode

## Types W8400ED320 and W8400ED350

Development part number Wx586ED320-350

### Absolute Maximum Ratings

|           | VOLTAGE RATINGS                               | MAXIMUM LIMITS | UNITS |
|-----------|---|----------------|-------|
| $V_{RRM}$ | Repetitive peak reverse voltage, (note 1)     | 3200-3500      | V     |
| $V_{RSM}$ | Non-repetitive peak reverse voltage, (note 1) | 3300-3600      | V     |

|               | OTHER RATINGS   | MAXIMUM LIMITS | UNITS             |
|---------------|---|----------------|-------------------|
| $I_{F(AV)M}$  | Maximum average forward current, $T_{sink}=55^{\circ}C$ , (note 2)      | 8400           | A                 |
| $I_{F(AV)M}$  | Maximum average forward current. $T_{sink}=100^{\circ}C$ , (note 2)     | 5870           | A                 |
| $I_{F(AV)M}$  | Maximum average forward current. $T_{sink}=100^{\circ}C$ , (note 3)     | 3650           | A                 |
| $I_{F(RMS)M}$ | Nominal RMS forward current, $T_{sink}=25^{\circ}C$ , (note 2)          | 15400          | A                 |
| $I_{F(d.c.)}$ | D.C. forward current, $T_{sink}=25^{\circ}C$ , (note 4)                 | 13640          | A                 |
| $I_{FSM}$     | Peak non-repetitive surge $t_p=10ms$ , $V_{rm}=60\%V_{RRM}$ , (note 5)  | 83             | kA                |
| $I_{FSM2}$    | Peak non-repetitive surge $t_p=10ms$ , $V_{rm}\leq 10V$ , (note 5)      | 91.3           | kA                |
| $I^2t$        | $I^2t$ capacity for fusing $t_p=10ms$ , $V_{rm}=60\%V_{RRM}$ , (note 5) | 34.4           | kA <sup>2</sup> s |
| $I^2t$        | $I^2t$ capacity for fusing $t_p=10ms$ , $V_{rm}\leq 10V$ , (note 5)     | 41.7           | kA <sup>2</sup> s |
| $T_{j op}$    | Operating temperature range   | -40 to +160    | $^{\circ}C$       |
| $T_{stg}$     | Storage temperature range   | -55 to +160    | $^{\circ}C$       |

### Notes:-

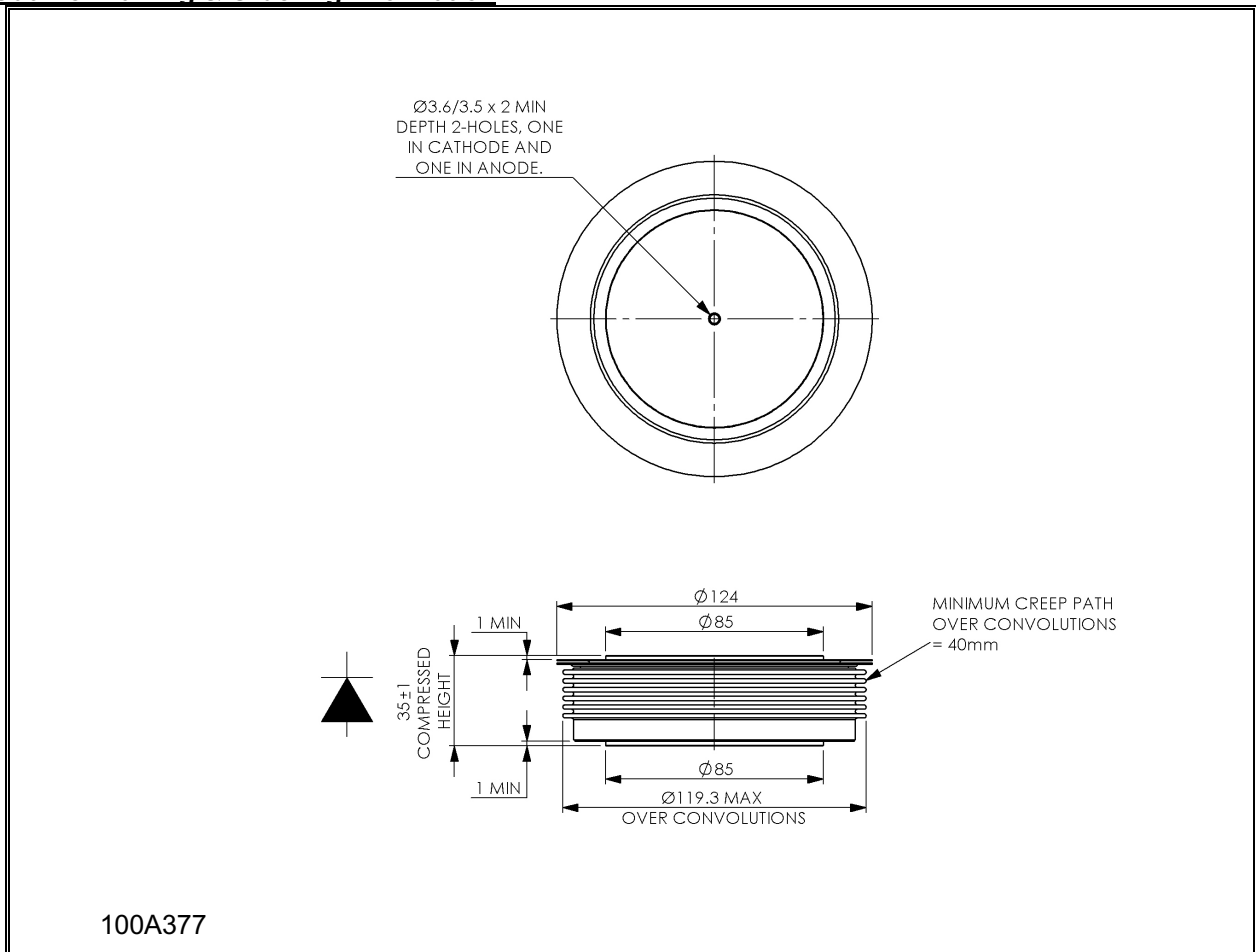
- 1) De-rating factor of 0.13% per  $^{\circ}C$  is applicable for  $T_j$  below  $25^{\circ}C$ .
- 2) Double side cooled, single phase; 50Hz,  $180^{\circ}$  half-sinewave.
- 3) Single side cooled, single phase; 50Hz,  $180^{\circ}$  half-sinewave.
- 4) Double side cooled.
- 5) Half-sinewave,  $160^{\circ}C$   $T_j$  initial.

**Characteristics**

|                   | PARAMETER                                | MIN. | TYP.  | MAX.  | TEST CONDITIONS (Note 1)   | UNITS             |
|-------------------|--|------|-------|-------|--|-------------------|
| V <sub>FM</sub>   | Maximum peak forward voltage             | -    | -     | 1.2   | I <sub>FM</sub> =6200A   | V                 |
| V <sub>T0</sub>   | Threshold voltage                        | -    | -     | 0.817 |  | V                 |
| r <sub>T</sub>    | Slope resistance                         | -    | -     | 0.061 |  | mΩ                |
| I <sub>RRM</sub>  | Peak reverse current                     | -    | -     | 150   | Rated V <sub>RRM</sub>   | mA                |
| Q <sub>rr</sub>   | Recovered charge                         | -    | 13500 | 15000 |  | μC                |
| Q <sub>ra</sub>   | Recovered charge, 50% Chord              | -    | 8550  | -     | I <sub>TM</sub> =2500A, t <sub>p</sub> =2000μs, di/dt=10A/μs, V <sub>r</sub> =100V | μC                |
| I <sub>rm</sub>   | Reverse recovery current                 | -    | 450   | -     |  | A                 |
| t <sub>rr</sub>   | Reverse recovery time, 50% chord         | -    | 38    | -     |  | μs                |
| R <sub>thJK</sub> | Thermal resistance, junction to heatsink | -    | -     | 0.006 | Double side cooled   | K/W               |
|                   |  | -    | -     | 0.012 | Single side cooled   | K/W               |
| I <sub>CNR</sub>  | Case non-rupture current                 | -    | 30    | -     |  | MA <sup>2</sup> s |
| F                 | Mounting force                           | 76   | -     | 93    | Note 2   | kN                |
| W <sub>t</sub>    | Weight                                   |      | 2.2   |       |  | kg                |

Notes:-

- 1) Unless otherwise indicated T<sub>j</sub>=160°C.
- 2) For other clamp forces, please consult factory.

**Outline Drawing & Ordering Information**

**ORDERING INFORMATION**

(Please quote 10 digit code as below)

|                    |                       |  |            |
|--------------------|-----------------------|--|------------|
| <b>W8400</b>       | <b>ED</b>             | <b>◆◆</b>                                  | <b>0</b>   |
| Fixed<br>Type Code | Fixed<br>Outline Code | Voltage code<br>$V_{RRM}/100$<br>32 and 35 | Fixed code |

 Order code: W8400ED320 – 3200V  $V_{RRM}$ , 35mm clamp height capsule.

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