

# Wespack Rectifier Diode

## Types W4295NK200 and W4295NK220

### Absolute Maximum Ratings

|           | VOLTAGE RATINGS                               | MAXIMUM LIMITS | UNITS |
|-----------|-----------------------------------------------|----------------|-------|
| $V_{RRM}$ | Repetitive peak reverse voltage, (note 1)     | 2000-2200      | V     |
| $V_{RSM}$ | Non-repetitive peak reverse voltage, (note 1) | 2100-2300      | V     |

|               | OTHER RATINGS                                                           | MAXIMUM LIMITS    | UNITS       |
|---------------|-------------------------------------------------------------------------|-------------------|-------------|
| $I_{F(AV)M}$  | Maximum average forward current, $T_{sink}=55^{\circ}C$ , (note 2)      | 4295              | A           |
| $I_{F(AV)M}$  | Maximum average forward current, $T_{sink}=85^{\circ}C$ , (note 2)      | 3566              | A           |
| $I_{F(AV)M}$  | Maximum average forward current, $T_{sink}=85^{\circ}C$ , (note 3)      | 2351              | A           |
| $I_{F(AV)M}$  | Maximum average forward current, $T_{sink}=85^{\circ}C$ , (note 4)      | 2086              | A           |
| $I_{F(RMS)M}$ | Nominal RMS forward current, $T_{sink}=25^{\circ}C$ , (note 2)          | 7765              | A           |
| $I_{F(d.c.)}$ | D.C. forward current, $T_{sink}=25^{\circ}C$ , (note 5)                 | 6764              | A           |
| $I_{FSM}$     | Peak non-repetitive surge $t_p=10ms$ , $V_{rm}=60\%V_{RRM}$ , (note 6)  | 28                | kA          |
| $I_{FSM2}$    | Peak non-repetitive surge $t_p=10ms$ , $V_{rm}\leq 10V$ , (note 6)      | 31                | kA          |
| $I^2t$        | $I^2t$ capacity for fusing $t_p=10ms$ , $V_{rm}=60\%V_{RRM}$ , (note 6) | $3.92\times 10^6$ | $A^2s$      |
| $I^2t$        | $I^2t$ capacity for fusing $t_p=10ms$ , $V_{rm}\leq 10V$ , (note 6)     | $4.81\times 10^6$ | $A^2s$      |
| $T_{j\ op}$   | Operating temperature range                                             | -55 to +175       | $^{\circ}C$ |
| $T_{stg}$     | Storage temperature range                                               | -55 to +200       | $^{\circ}C$ |

#### 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 (Anode), single phase; 50Hz,  $180^{\circ}$  half-sinewave.
- 4) Single side cooled (Cathode), single phase; 50Hz,  $180^{\circ}$  half-sinewave.
- 5) Double side cooled.
- 6) Half-sinewave,  $175^{\circ}C$   $T_j$  initial.

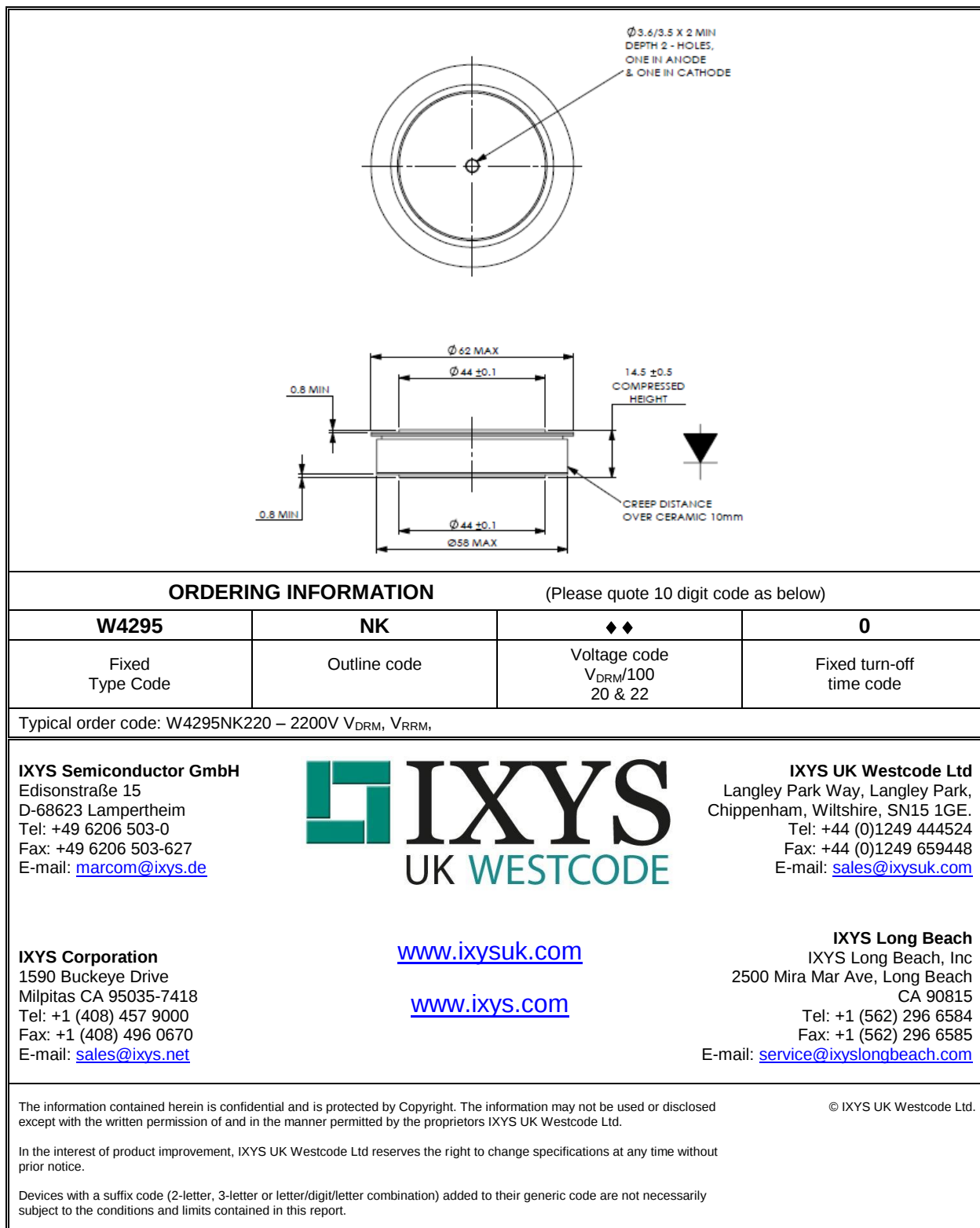
### Characteristics

|                   | PARAMETER                                | MIN. | TYP. | MAX.   | TEST CONDITIONS (Note 1)                                                          | UNITS |
|-------------------|------------------------------------------|------|------|--------|-----------------------------------------------------------------------------------|-------|
| V <sub>FM</sub>   | Maximum peak forward voltage             | -    | -    | 1.47   | I <sub>TM</sub> =6400A                                                            | V     |
| V <sub>FM</sub>   | Maximum peak forward voltage             | -    | -    | 1.76   | I <sub>TM</sub> =9800A                                                            | V     |
| V <sub>T0</sub>   | Threshold voltage                        | -    | -    | 0.826  |                                                                                   | V     |
| r <sub>T</sub>    | Slope resistance                         | -    | -    | 0.104  |                                                                                   | mΩ    |
| I <sub>RRM</sub>  | Peak reverse current                     | -    | -    | 50     | Rated V <sub>RRM</sub>                                                            | mA    |
| I <sub>RRM</sub>  | Peak reverse current                     | -    | -    | 50     | Rated V <sub>RRM</sub> , T <sub>J</sub> =25°C                                     | mA    |
| Q <sub>rr</sub>   | Recovered charge                         | -    | 2400 | -      | I <sub>TM</sub> =1000A, t <sub>p</sub> =1000μs, di/dt=10A/μs, V <sub>r</sub> =50V | μC    |
| Q <sub>ra</sub>   | Recovered charge, 50% Chord              | -    | 1900 | 2350   |                                                                                   | μC    |
| I <sub>rr</sub>   | Reverse recovery current                 | -    | 150  | -      |                                                                                   | A     |
| t <sub>rr</sub>   | Reverse recovery time                    | -    | 25   | -      |                                                                                   | μs    |
| R <sub>thJK</sub> | Thermal resistance, junction to heatsink | -    | -    | 0.0145 | Double side cooled                                                                | K/W   |
|                   |                                          | -    | -    | 0.0268 | Single side cooled (anode)                                                        | K/W   |
|                   |                                          | -    | -    | 0.0317 | Single side cooled (Cathode)                                                      | K/W   |
| F                 | Mounting force                           | 19   | -    | 26     |                                                                                   | kN    |
| W <sub>t</sub>    | Weight                                   | -    | 250  | -      |                                                                                   | g     |

Notes:-

- 1) Unless otherwise indicated T<sub>J</sub>=175°C.
- 2) For other clamp forces, please consult factory.

## Outline Drawing & Ordering Information





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