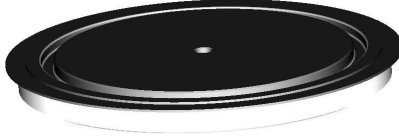


# GPDD012K

## RECTIFIER DIODE



Low profile ceramic package  
Spot welding applications  
Electroplating applications

**VOLTAGE UP TO** **200 V**  
**AVERAGE CURRENT** **12100 A**  
**SURGE CURRENT** **100 kA**

### BLOCKING CHARACTERISTICS

| Characteristic   |                                       | Conditions   | Value |
|------------------|---------------------------------------|--|-------|
| V <sub>RRM</sub> | Repetitive peak reverse voltage       |  | 200 V |
| V <sub>RSM</sub> | Non-repetitive peak reverse voltage   |  | 300 V |
| I <sub>RRM</sub> | Repetitive peak reverse current, max. | V <sub>RRM</sub> , single phase, half wave, T <sub>j</sub> = T <sub>jmax</sub> | 50 mA |

### FORWARD CHARACTERISTICS

|                     |  |  |                         |
|---------------------|--|--|-------------------------|
| I <sub>F(AV)</sub>  | Average forward current                  | Sine wave, 180° conduction, T <sub>c</sub> = 70°C  | 12100 A                 |
| I <sub>F(RMS)</sub> | R.M.S. forward current                   | Sine wave, 180° conduction, T <sub>c</sub> = 70°C  | 19007 A                 |
| I <sub>F(SM)</sub>  | Surge forward current                    | Non rep. half sine wave, 50 Hz, V <sub>R</sub> = 0 V, T <sub>j</sub> = T <sub>jmax</sub> | 100 kA                  |
| I <sup>2</sup> t    | I <sup>2</sup> t for fusing coordination |  | 50000 kA <sup>2</sup> s |
| V <sub>F(TO)</sub>  | Threshold voltage                        | T <sub>j</sub> = T <sub>jmax</sub>   | 0,75 V                  |
| r <sub>F</sub>      | Forward slope resistance                 | T <sub>j</sub> = T <sub>jmax</sub>   | 0,021 mΩ                |
| V <sub>FM</sub>     | Peak forward voltage, max                | Forward current I <sub>F</sub> = 8000 A, T <sub>j</sub> = 25°C                           | 1,01 V                  |

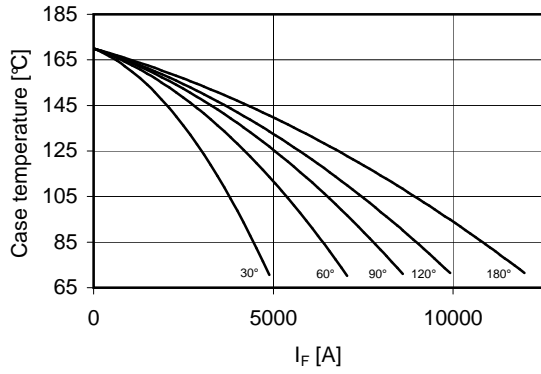
### SWITCHING CHARACTERISTICS

|                 |                              |  |        |
|-----------------|------------------------------|--|--------|
| Q <sub>rr</sub> | Reverse recovery charge, typ | T <sub>j</sub> = T <sub>jmax</sub> , I <sub>F</sub> = 1000 A, di/dt = -30 A/μs | 600 μC |
| I <sub>rr</sub> | Reverse recovery current     | V <sub>R</sub> = 50 V  | A      |
| t <sub>rr</sub> | Reverse recovery time        |  | μs     |
| V <sub>FP</sub> | Forward recovery voltage     | T <sub>j</sub> = T <sub>jmax</sub> , di/dt = 100 A/μs                          | V      |

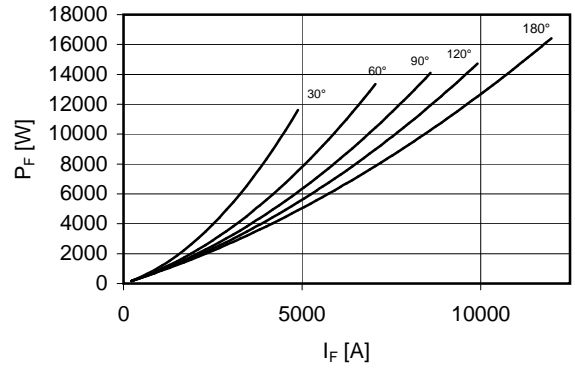
### THERMAL AND MECHANICAL CHARACTERISTICS

|                      |                                       |                    |              |
|----------------------|---------------------------------------|--------------------|--------------|
| R <sub>th(j-c)</sub> | Thermal resistance (junction to case) | Double side cooled | 0,006 °C/W   |
| R <sub>th(c-h)</sub> | Thermal resistance (case to heatsink) | Double side cooled | 0,003 °C/W   |
| T <sub>jmax</sub>    | Max operating junction temperature    |                    | 170 °C       |
| T <sub>stg</sub>     | Storage temperature                   |                    | -40 / 170 °C |
| F                    | Clamping force ± 10%                  |                    | 35 kN        |
|                      | Mass                                  |                    | 220 g        |

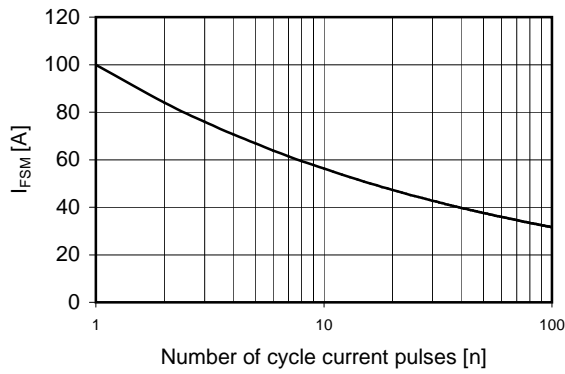
Current rating - sine wave



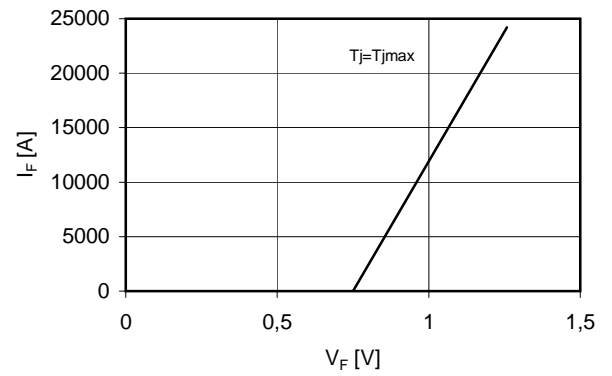
Power loss - sine wave



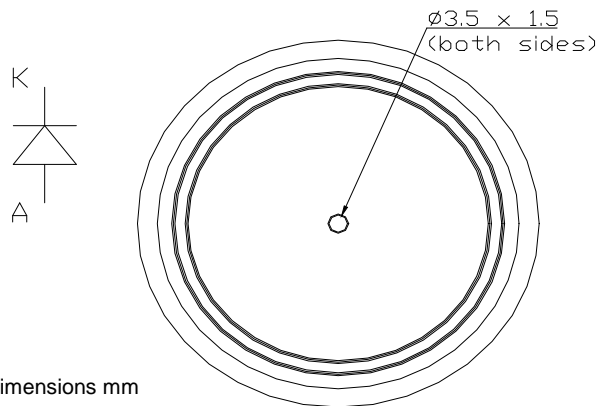
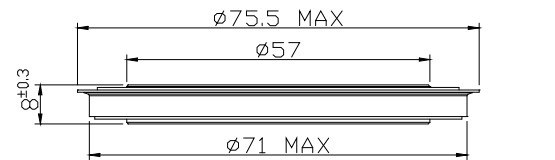
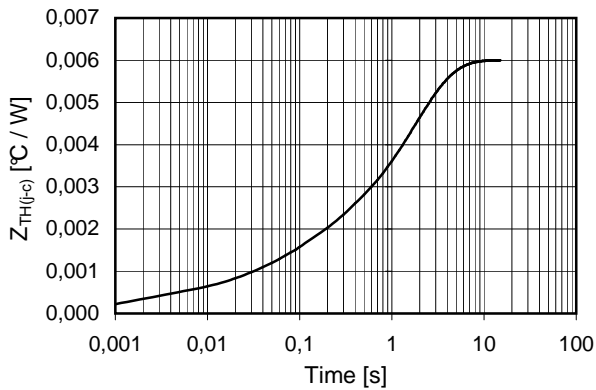
Maximum surge current d.s. cooled



Forward voltage drop



Thermal Impedance (j-c)



In the interest of product improvement Green Power Solutions reserves the right to change any specification given in this data sheet without notice.