

# GPDP4156

## RECTIFIER DIODE

<b>VOLTAGE UP TO</b>	<b>5000 V</b>
<b>AVERAGE CURRENT</b>	<b>1590 A</b>
<b>SURGE CURRENT</b>	<b>18.5 kA</b>

### BLOCKING CHARACTERISTICS

Characteristic		Conditions	Value
V <sub>RRM</sub>	Repetitive peak reverse voltage		5000 V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		5100 V
I <sub>RRM</sub>	Repetitive peak reverse current, max.	V <sub>RRM</sub> , single phase, half wave, T <sub>jmax</sub>	80 mA

### FORWARD CHARACTERISTICS

I <sub>F(AV)</sub>	Average forward current	Sine wave, 180° conduction, Th = 55°C	1590 A
I <sub>F(RMS)</sub>	R.M.S. forward current	Sine wave, 180° conduction, Th = 55°C	2498 A
I <sub>FSM</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>	18.5 kA
I <sup>2</sup> t	I <sup>2</sup> t for fusing coordination		1711 kA <sup>2</sup> s
V <sub>F(TO)</sub>	Threshold voltage	T <sub>j</sub> = T <sub>jmax</sub>	1.1 V
r <sub>F</sub>	Forward slope resistance	T <sub>j</sub> = T <sub>jmax</sub>	0.4 mΩ
V <sub>FM</sub>	Peak forward voltage, max	Forward current I <sub>F</sub> = 4000 A, T <sub>j</sub> = T <sub>jmax</sub>	2.70 V

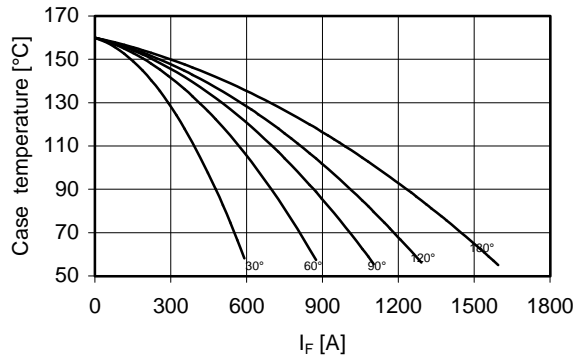
### SWITCHING CHARACTERISTICS

Q <sub>rr</sub>	Reverse recovery charge, typ	T <sub>j</sub> = T <sub>jmax</sub> , I <sub>F</sub> = 2000 A, di/dt = -5 A/μs	μC
I <sub>rr</sub>	Reverse recovery current	V <sub>R</sub> = 100 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 = A/μs	V

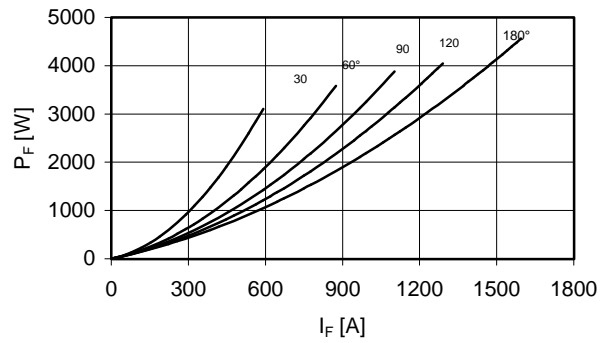
### THERMAL AND MECHANICAL CHARACTERISTICS

R <sub>th(j-c)</sub>	Thermal resistance (junction to case)	Double side cooled	0.020 °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		160 °C
T <sub>stg</sub>	Storage temperature		-40 / 160 °C
F	Clamping force ± 10%		22 kN
	Mass		500 g

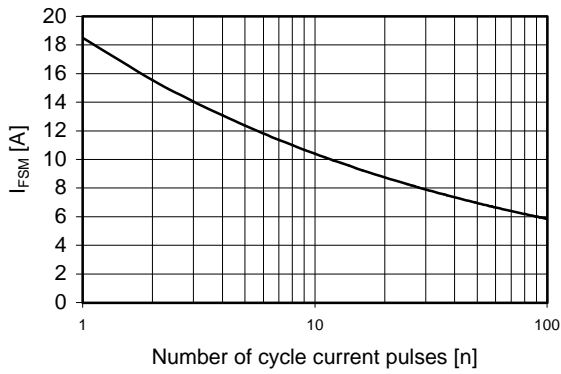
Current rating - sine wave



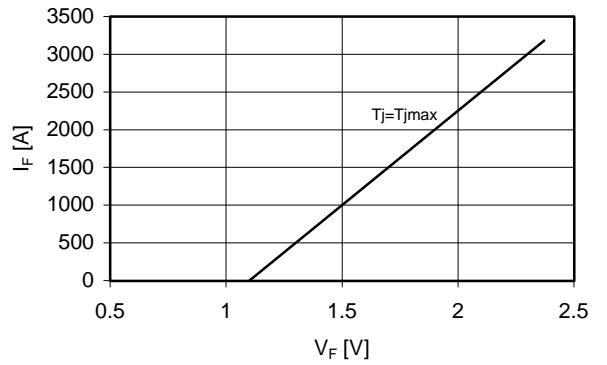
Power loss - sine wave



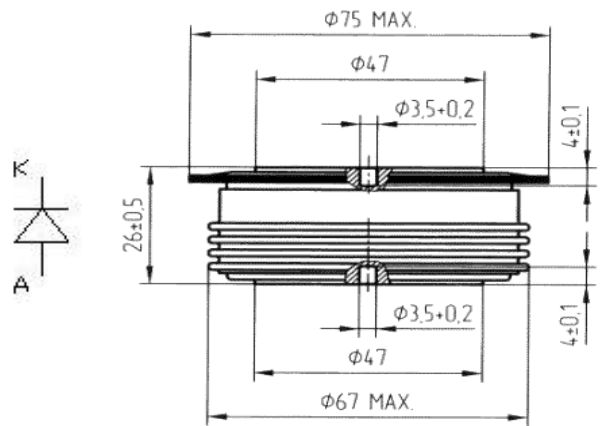
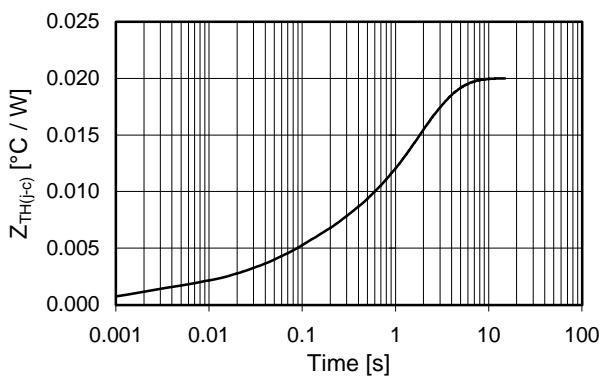
Maximum surge current  
d.s. cooled



Forward voltage drop



Thermal Impedance (j-c)



dimensions mm

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