

# GPDR4460

RECTIFIER DIODE



**VOLTAGE UP TO** 4000 V  
**AVERAGE CURRENT** 4600 A  
**SURGE CURRENT** 46 kA

## BLOCKING CHARACTERISTICS

Characteristic	Conditions	Value
VRRM	Repetitive peak reverse voltage	4000 V
VRSM	Non-repetitive peak reverse voltage	4000 V
IRRM	Repetitive peak reverse current, max.	VRRM, single phase, half wave, T <sub>j</sub> = 175 °C
		100 mA

## FORWARD CHARACTERISTICS

I <sub>F(AV)</sub>	Average forward current	Sine wave, 180° conduction, Th = 55°C	4600 A
I <sub>F(RMS)</sub>	R.M.S. forward current	Sine wave, 180° conduction, Th = 55°C	7226 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>	46 kA
I <sup>2</sup> t	I <sup>2</sup> t for fusing coordination		10580 kA <sup>2</sup> s
V <sub>F(TO)</sub>	Threshold voltage	T <sub>j</sub> = T <sub>jmax</sub>	0.885 V
r <sub>F</sub>	Forward slope resistance	T <sub>j</sub> = T <sub>jmax</sub>	0.135 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>	1.4 V

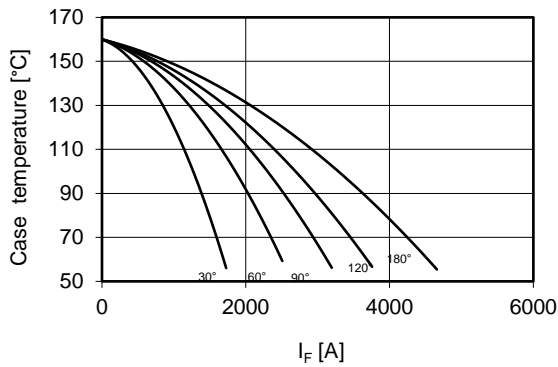
## SWITCHING CHARACTERISTICS

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

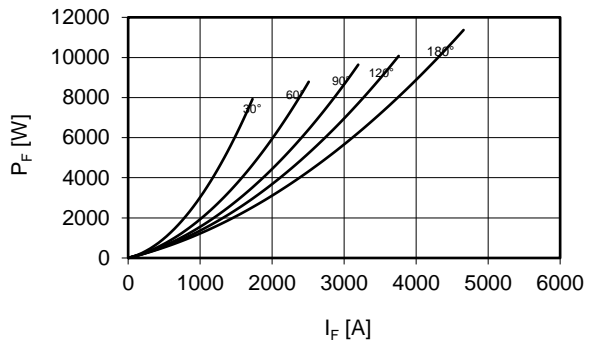
## THERMAL AND MECHANICAL CHARACTERISTICS

R <sub>th(j-c)</sub>	Thermal resistance (junction to case)	Double side cooled	0.008 °C/W
R <sub>th(c-h)</sub>	Thermal resistance (case to heatsink)	Double side cooled	0.001 °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%		40 kN
	Mass		950 g

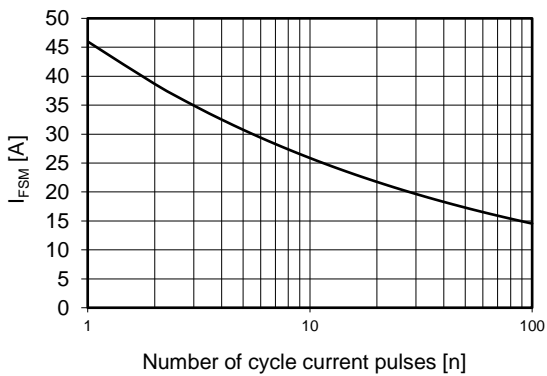
Current rating - sine wave



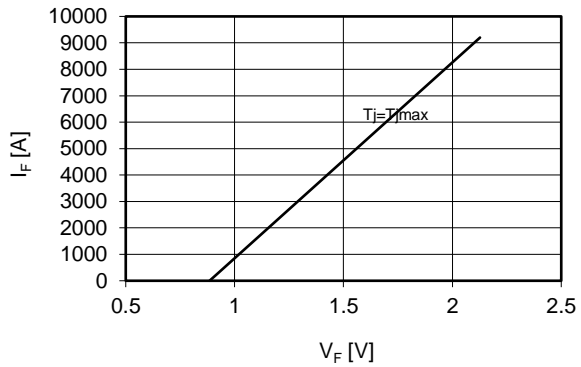
Power loss - sine wave



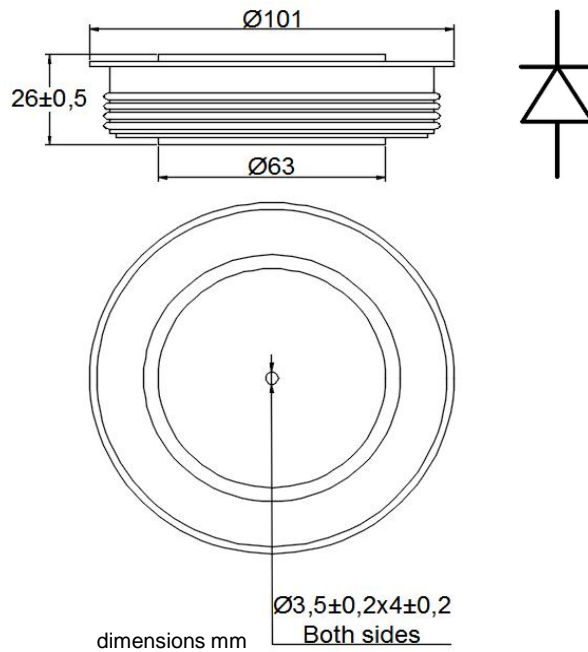
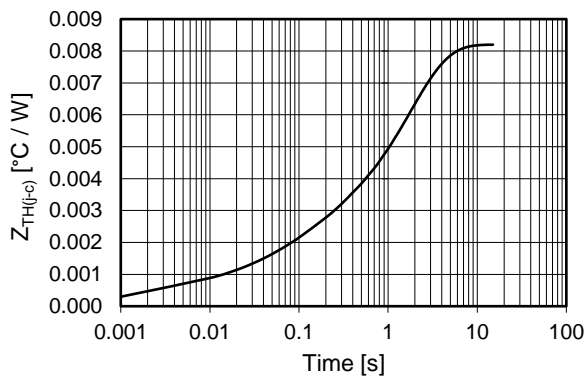
Maximum surge current d.s. cooled



Forward voltage drop



Thermal Impedance (j-c)



Ordering information GPDR4460-VV

VV: blocking voltage / 100 (e.g. 40 for 4000V)

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