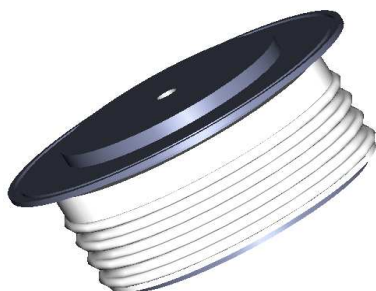


# GPDN4087

## AVALANCHE RECTIFIER DIODE



**VOLTAGE UP TO**                    **3200 - 3800 V**  
**AVERAGE CURRENT**                    **870 A**  
**SURGE CURRENT**                    **8 kA**

### BLOCKING CHARACTERISTICS

Characteristic		Conditions	Value
V <sub>RRM</sub>	Repetitive peak reverse voltage		3200 - 3800 V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		V
I <sub>RRM</sub>	Repetitive peak reverse current, max.	V <sub>RRM</sub> , single phase, half wave, T <sub>jmax</sub>	50 mA
P <sub>RSM</sub>	Peak reverse power, max	T <sub>jmax</sub> , t <sub>p</sub> = 20μs	50 kW

### FORWARD CHARACTERISTICS

I <sub>F(AV)</sub>	Average forward current	Sine wave, 180° conduction, T <sub>h</sub> = 55°C	870 A
I <sub>F(RMS)</sub>	R.M.S. forward current	Sine wave, 180° conduction, T <sub>h</sub> = 55°C	1367 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>	8 kA
I <sup>2</sup> t	I <sup>2</sup> t for fusing coordination		320 kA <sup>2</sup> s
V <sub>F(TO)</sub>	Threshold voltage	T <sub>j</sub> = T <sub>jmax</sub>	1.01 V
r <sub>F</sub>	Forward slope resistance	T <sub>j</sub> = T <sub>jmax</sub>	0.720 mΩ
V <sub>FM</sub>	Peak forward voltage, max	Forward current I <sub>F</sub> = 1000 A, T <sub>j</sub> = T <sub>jmax</sub>	1.73 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 = -5 A/μs	μC
I <sub>rr</sub>	Reverse recovery current		A

### THERMAL AND MECHANICAL CHARACTERISTICS

R <sub>th(j-c)</sub>	Thermal resistance (junction to case)	Double side cooled	0.040 °C/W
R <sub>th(c-h)</sub>	Thermal resistance (case to heatsink)	Double side cooled	0.007 °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%		11 kN
	Mass		300 g