

Technical Data Data Sheet N1176, Rev. A



# 186NQ200/R-1 SCHOTTKY RECTIFIER



#### Features

- 150 °C TJ operation
- Unique high power, Half-Pak module
- Replaces three parallel DO-5' S
- Easier to mount and lower profile than DO-5' S
- High purity, high temperature epoxy encapsulation for enhanced
- mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Baseplate: Nickel plated; Terminals: Nickel plated
- This is a Pb Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	200	V
Average Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =110°C, rectangular wave form	180	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3 ms, half Sine pulse	3000	А

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### **Electrical Characteristics:**

Characteristics	Symbol	Condition	Тур.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 180A, Pulse, T <sub>J</sub> = 25 °C	0.88	1.12	V
	V <sub>F2</sub>	@ 180A, Pulse, T <sub>J</sub> = 125 °C	0.75	0.79	V
Reverse Current*	I <sub>R1</sub>	$@V_R = rated V_R T_J = 25 °C$	0.001	4.5	mA
	I <sub>R2</sub>	$@V_R = rated V_R T_J = 125 \circ C$	4	65	mA
Junction Capacitance	Ст	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	2300	2700	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

\* Pulse width < 300  $\mu s, \ duty \ cycle < 2\%$ 

### **Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	TJ	-	-55 to +175		°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +175		°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	0.30		°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{ hetacs}$	Mounting surface, smooth and greased	0.15		°C/W
Mounting Torque	Тм	Non-lubricated threads	Mounting Torque Terminal	23(min) 29(max) 35(min)	Kg-cm
Approximate Weight	wt	-	Torque 46(max) 25.6		g
Case Style	PRM1-1				

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**Typical Reverse Characteristics** 

#### **Ratings and Characteristics Curves**



#### **Typical Forward Characteristics**

# **Ordering Information**

Device	Package	Shipping
186NQ200-1	PRM1-1(Pb-Free)	27pcs/ box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## **Marking Diagram**



Where XXXX is YYWW

1st row SS YYWW 2nd row 186NQ200-1 SS = SS YY = Year WW = Week

Cautions: Molding resin Epoxy resin UL:94V-0

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# Mechanical Dimensions PRM1-1 (Inches/Millimeters)





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