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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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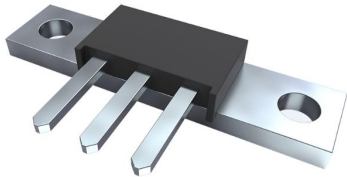
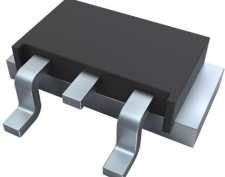
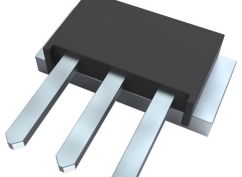
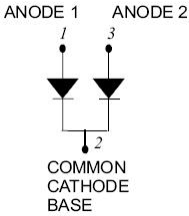
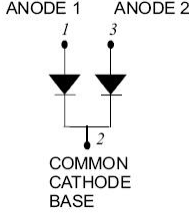
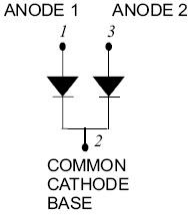
## 87CNQ020 SCHOTTKY RECTIFIER

### Applications

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

### Features

- 150°C T<sub>J</sub> operation
- Center tap module
- Very Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, high current package
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request

87CNQ020	87CNQ020SL	87CNQ020SM
		
		
<b>PRM2</b>	<b>PRM2-SL</b>	<b>PRM2-SM</b>

### 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>	-	20	V
Average Rectified Forward Current	I <sub>F (AV)</sub>	50% duty cycle @T <sub>C</sub> =135°C, rectangular wave form	40(Per Leg) 80(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I <sub>FSM</sub>	8.3 ms, half Sine pulse	1320	A
Non-Repetitive Avalanche Energy(peg leg)	E <sub>AS</sub>	T <sub>J</sub> =25°C, I <sub>AS</sub> =8A, L=1.12mH	36	mJ
Repetitive Avalanche Current(peg leg)	I <sub>AR</sub>	Current decaying linearly to zero in 1 μsec Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub> typical	8	A

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per leg) *	V <sub>F1</sub>	@ 40A, Pulse, T <sub>J</sub> = 25 °C	0.40	0.45	V
		@ 80A, Pulse, T <sub>J</sub> = 25 °C	0.45	0.51	
	V <sub>F2</sub>	@ 40A, Pulse, T <sub>J</sub> = 125 °C	0.31	0.32	V
		@ 80A, Pulse, T <sub>J</sub> = 125 °C	0.38	0.39	
Reverse Current (Per leg) *	I <sub>R1</sub>	@V <sub>R</sub> = rated VR T <sub>J</sub> = 25 °C	0.7	5.5	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated VR T <sub>J</sub> = 125 °C	500	550	mA
Junction Capacitance (Per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	3300	6500	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

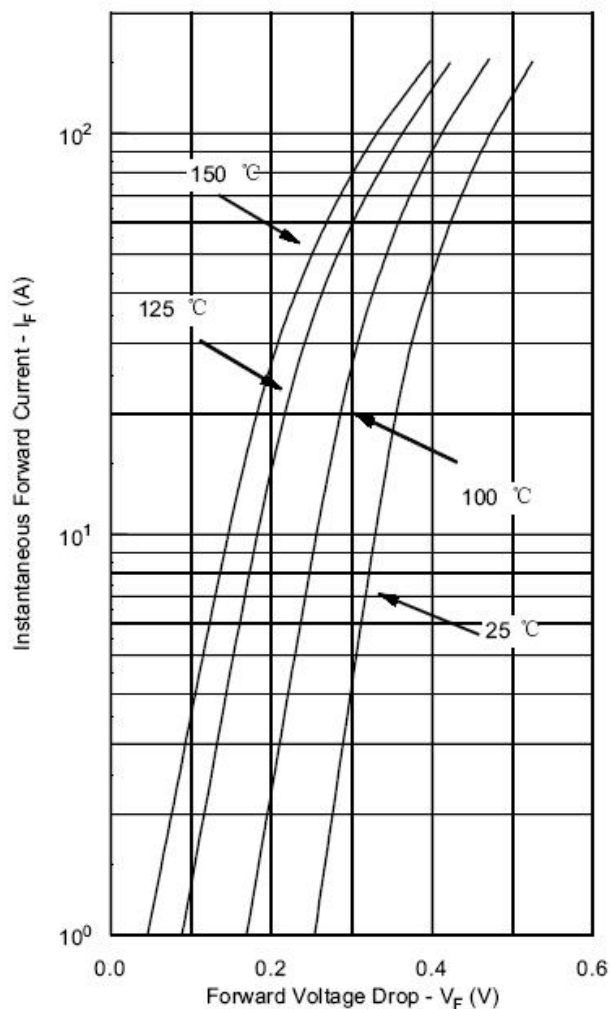
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

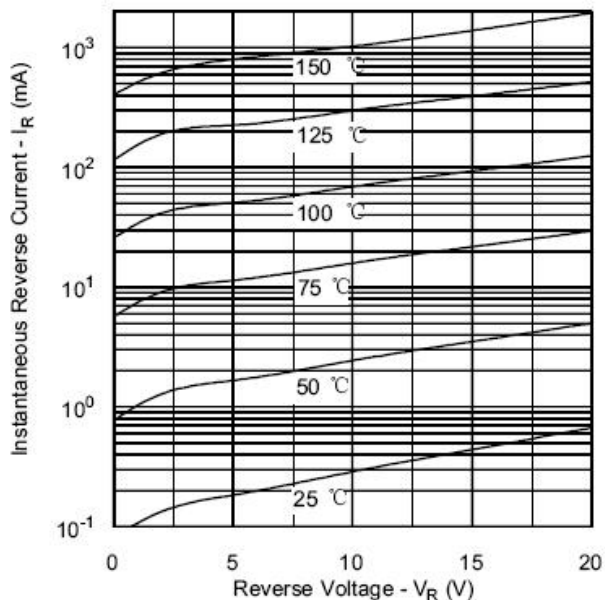
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +150	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case (per leg)	R <sub>θJC</sub>	DC operation	0.85	°C/W
Typical Thermal Resistance Junction to Case (per package)	R <sub>θJC</sub>	DC operation	0.42	°C/W
Typical Thermal Resistance, case to Heat Sink	R <sub>θcs</sub>	Mounting surface, smooth and greased	0.30	°C/W
Mounting Torque	TM	-	40(min)	Kg-cm
			58(max)	
Approximate Weight	wt	-	7.8	g
Case Style	PRM2 PRM2-SL PRM2-SM			

**Ratings and Characteristics Curves**

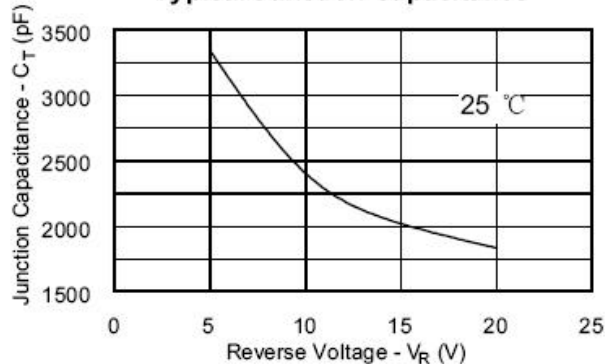
**Typical Forward Characteristics**



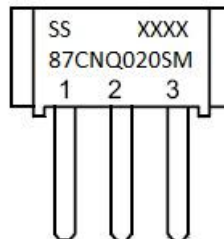
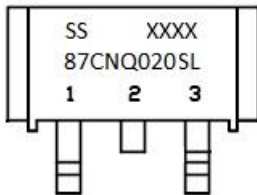
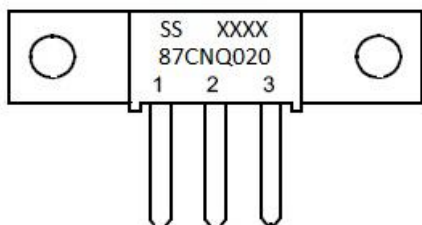
**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Marking Diagram**



Where XXXX is YYWW

1st row SS YYWWL  
2nd row 87CNQ020/SL/SM  
3rd row 1 2 3 (pin)  
SS = SS  
YY = Year  
WW = Week

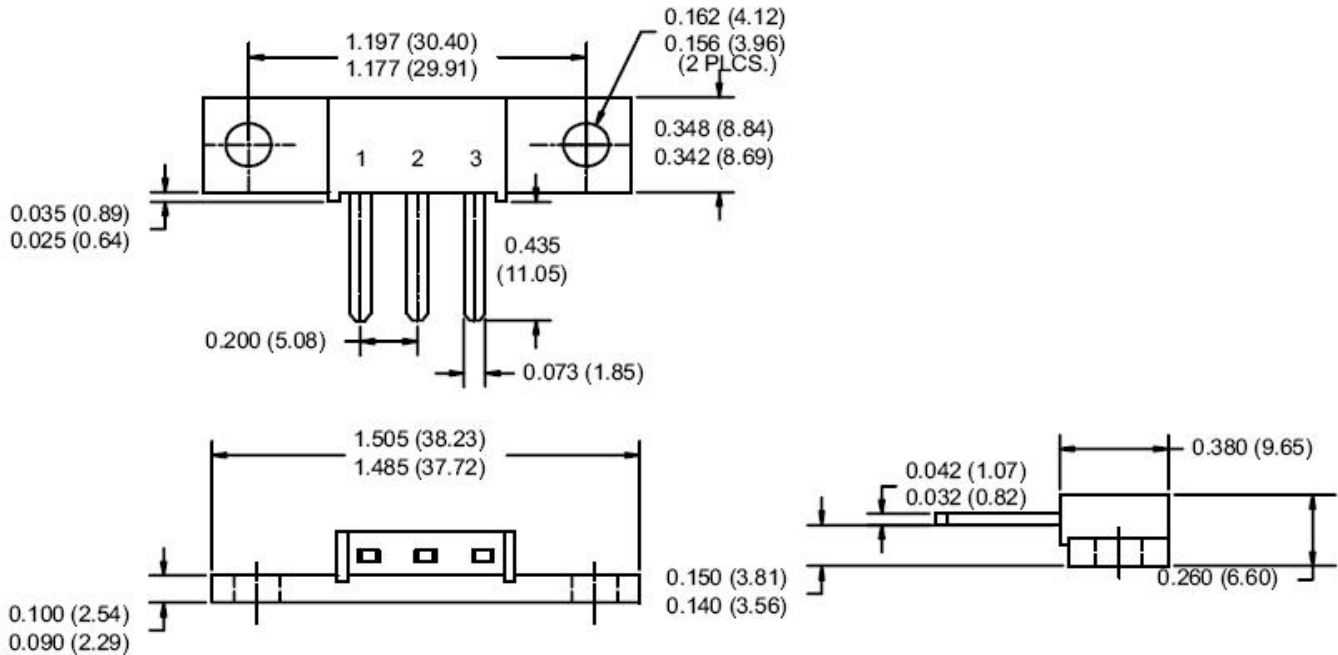
**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information**

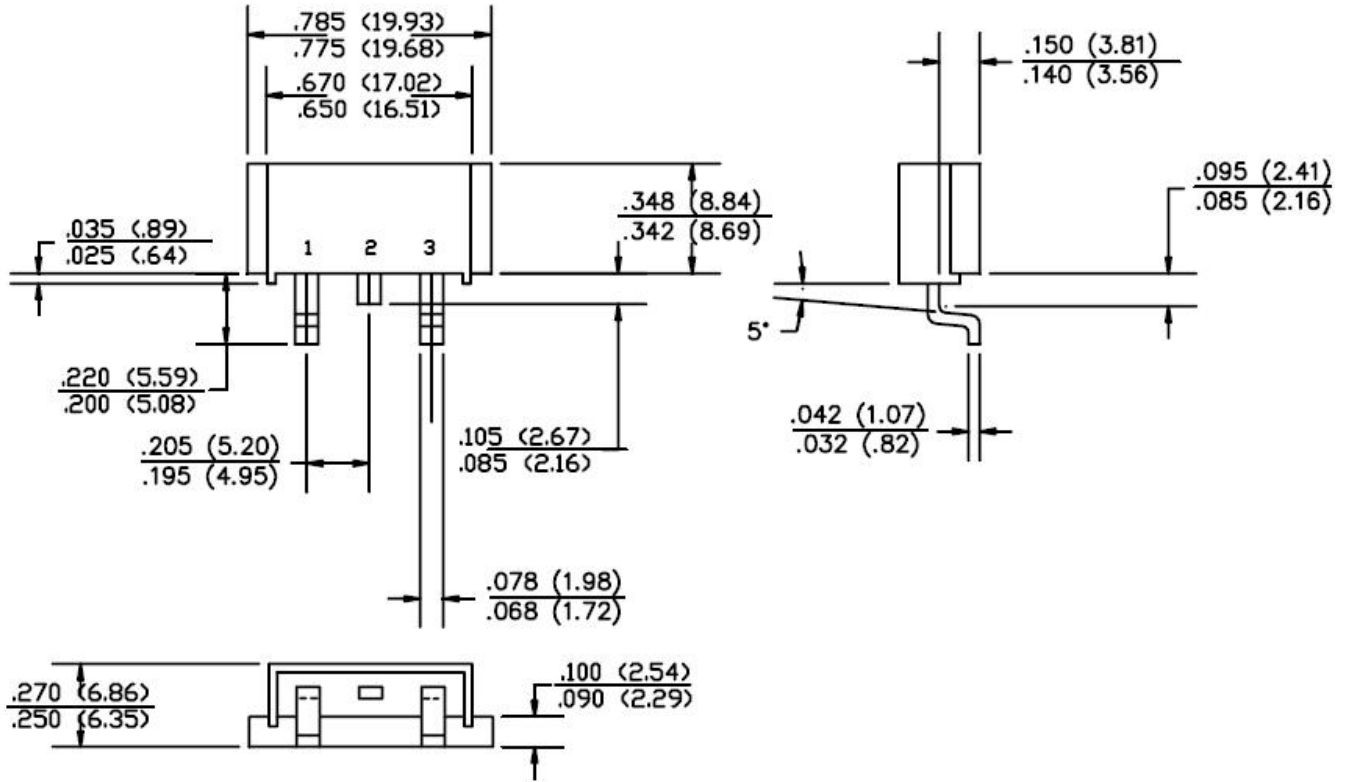
Device	Package	Terminals finish	Shipping
87CNQ020	PRM2	Nickel plated	48pcs / box
87CNQ020S	PRM2	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
87CNQ020SL	PRM2-SL	Pure Sn plated	100pcs / box
87CNQ020SM	PRM2-SM	Nickel plated	48pcs / box
87CNQ020SMS	PRM2-SM	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box

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

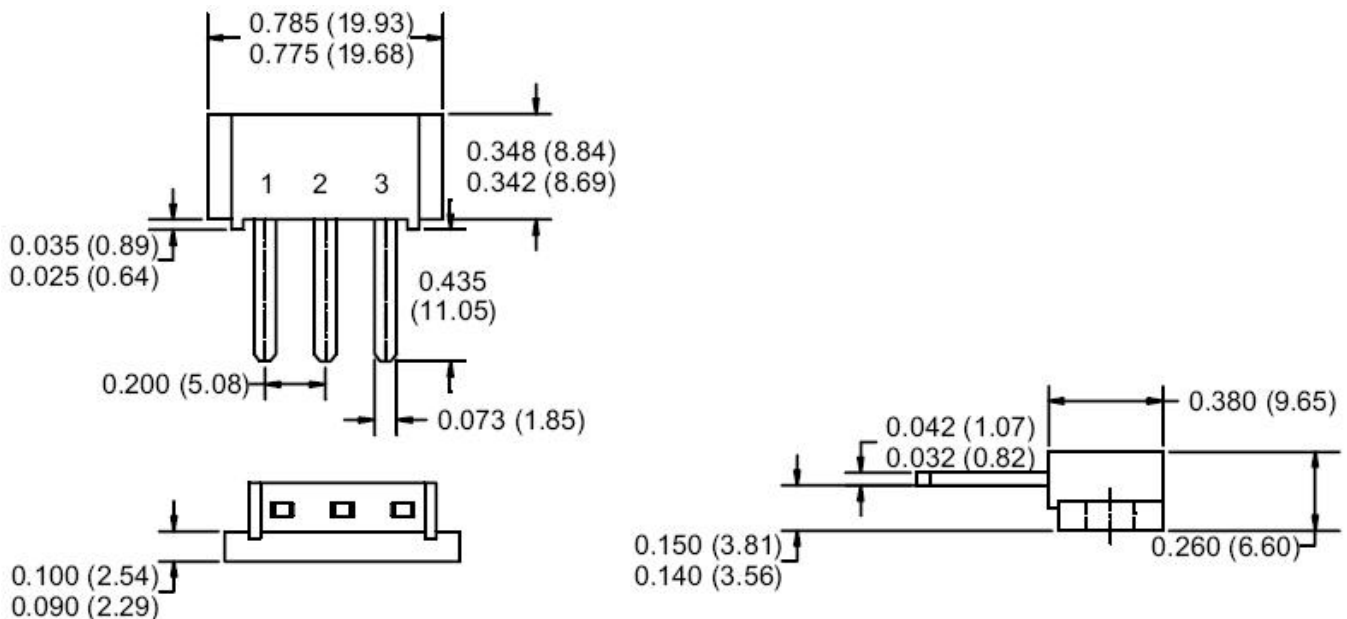
**Mechanical Dimensions PRM2 (Inches/Millimeters)**



**Mechanical Dimensions PRM2-SL (Inches/Millimeters)**



**Mechanical Dimensions PRM2-SM (Inches/Millimeters)**



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