

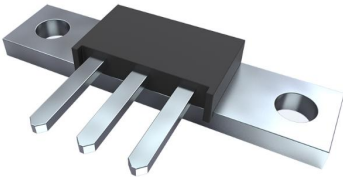
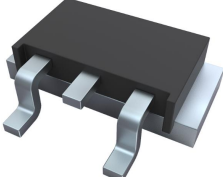
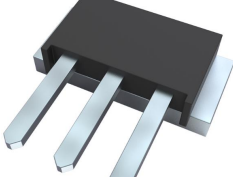
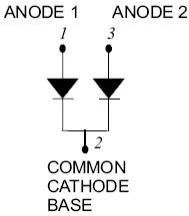
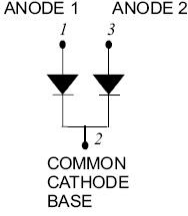
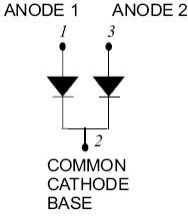
87CNQ020 SCHOTTKY RECTIFIER

Applications

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

Features

- 150°C T_J 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
		
		
PRM2	PRM2-SL	PRM2-SM

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	20	V
Average Rectified Forward Current	I _{F (AV)}	50% duty cycle @T _C =135°C, rectangular wave form	40(Per Leg) 80(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I _{FSM}	8.3 ms, half Sine pulse	1320	A
Non-Repetitive Avalanche Energy(peg leg)	E _{AS}	T _J =25°C, I _{AS} =8A, L=1.12mH	36	mJ
Repetitive Avalanche Current(peg leg)	I _{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T _J max. V _A =1.5×V _R typical	8	A

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

Electrical Characteristics:

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

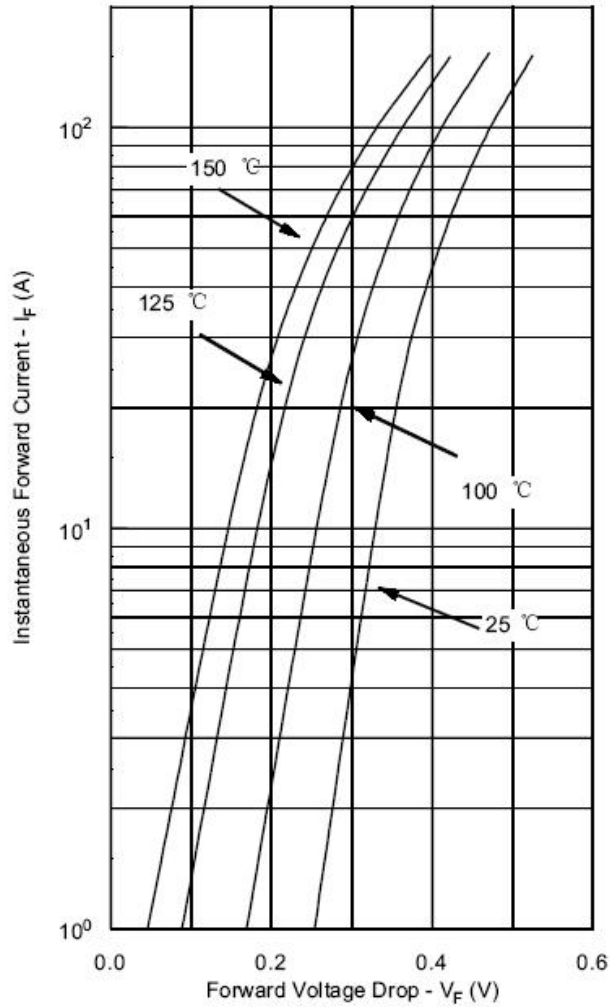
* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

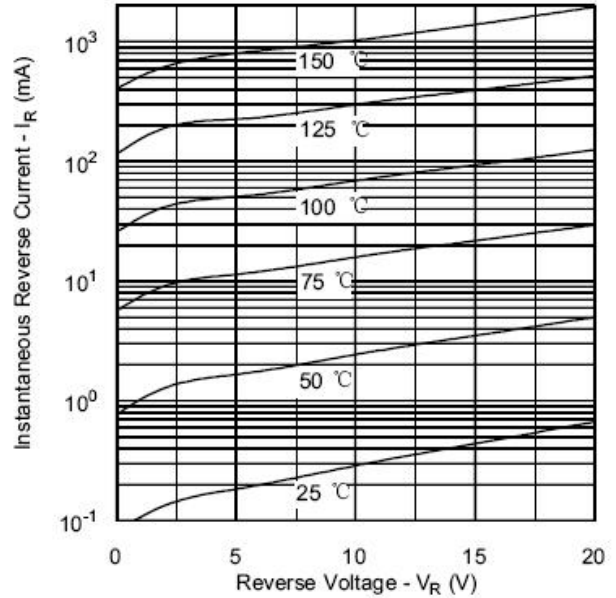
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +150	°C
Storage Temperature	T _{stg}	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case (per leg)	R _{θJC}	DC operation	0.85	°C/W
Typical Thermal Resistance Junction to Case (per package)	R _{θJC}	DC operation	0.42	°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	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

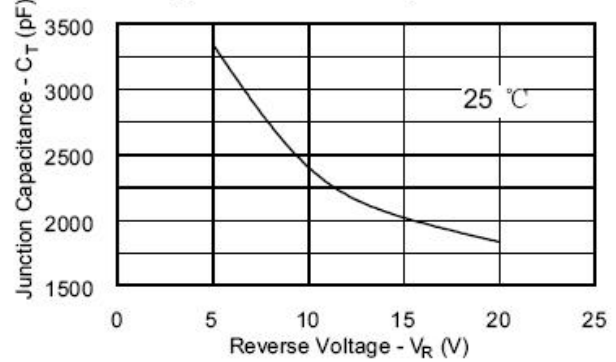
Typical Forward Characteristics



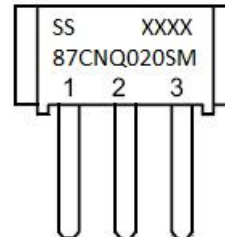
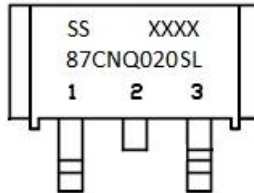
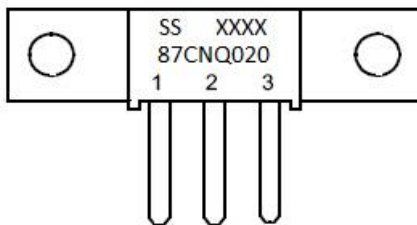
Typical Reverse Characteristics



Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

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

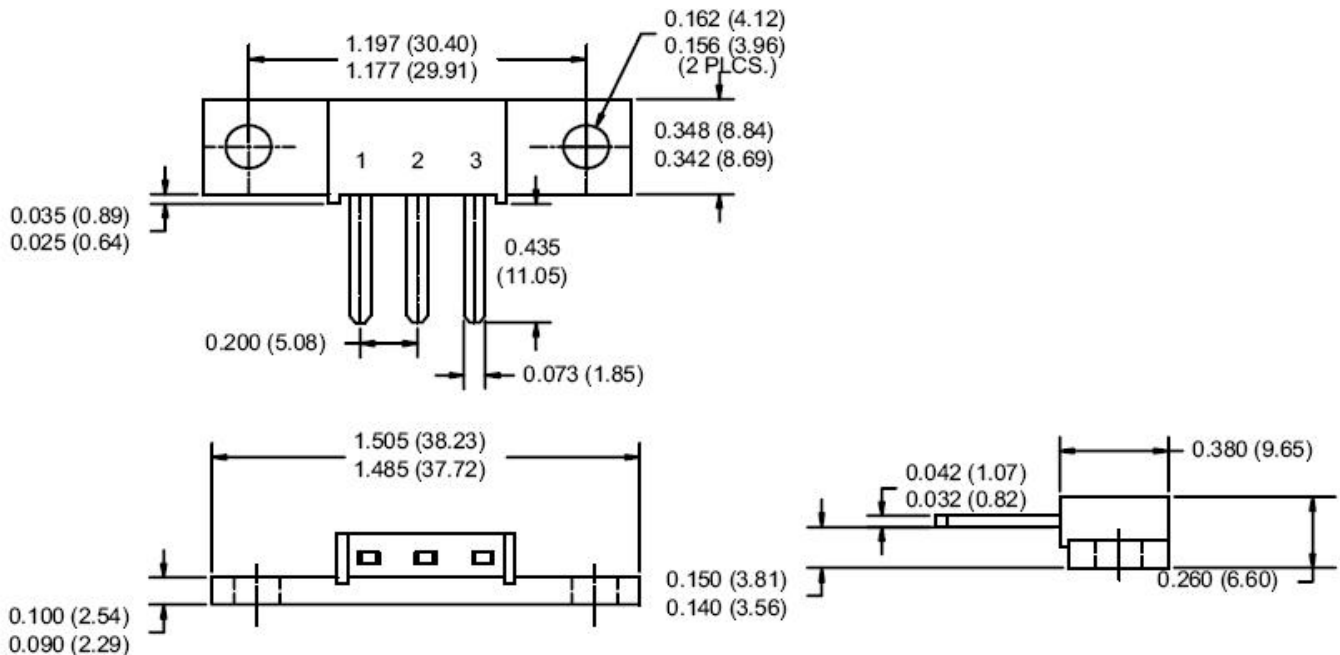
Cautions: Molding resin
Epoxy resin UL:94V-0

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)



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