

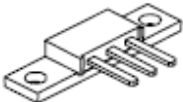
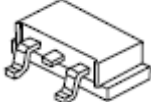
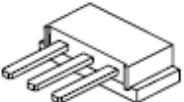
**81CNQ SERIES SCHOTTKY RECTIFIER**

**Applications:**

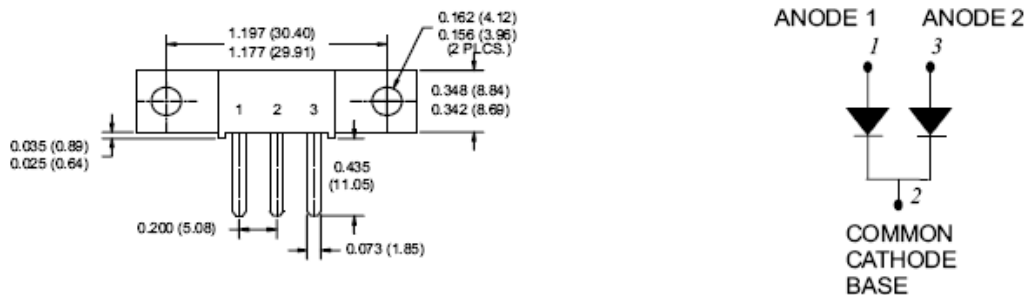
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

**Features:**

- 175°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 testing can be offered upon request

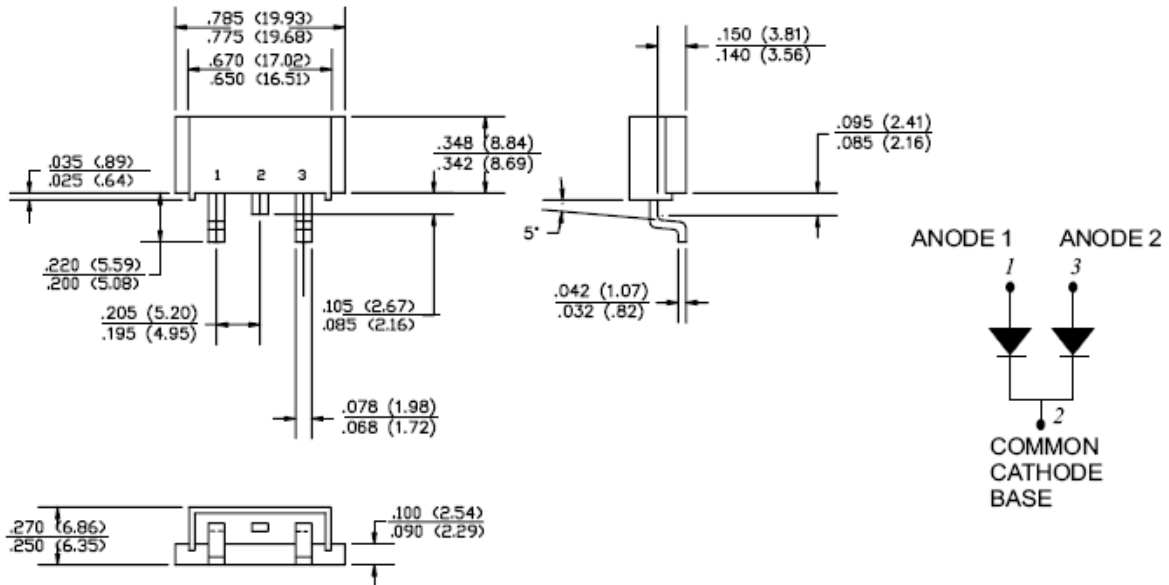
Case Styles		
<p><b>81CNQ...</b></p>  <p><b>PRM2</b></p>	<p><b>81CNQ...SL</b></p>  <p><b>PRM2-SL</b></p>	<p><b>81CNQ...SM</b></p>  <p><b>PRM2-SM</b></p>

Mechanical Dimensions: In Inches / mm

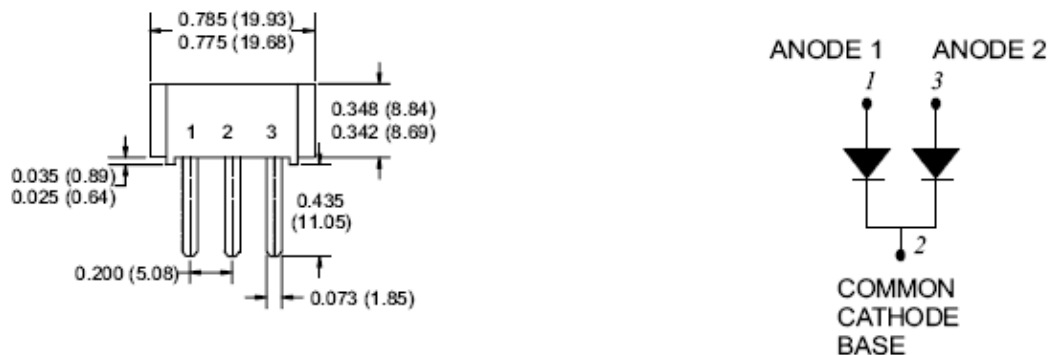


**PRM2**

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



**PRM2-SL**



**PRM2-SM**

**MARKING, MOLDING RESIN**

Marking for 81CNQ035/SL/SM, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 81CNQ035/SL/SM, 3<sup>rd</sup> row 1 2 3 (pin)

Where YY is the manufacture year

WW is the manufacture week code

L is the wafer's Lot Number

Molding resin

Epoxy resin UL: 94V-0

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## 81CNQ SERIES

Technical Data  
Data Sheet N1060, Rev. A

*Green Products*

### Ordering Information:

Device	Package	Terminals finish	Shipping
81CNQ035	PRM2	Nickel plated	48pcs / box
81CNQ035S1	PRM2	PbSn dipped	48pcs / box
81CNQ035S2	PRM2	Pure Sn dipped	48pcs / box
81CNQ040	PRM2	Nickel plated	48pcs / box
81CNQ040S1	PRM2	PbSn dipped	48pcs / box
81CNQ040S2	PRM2	Pure Sn dipped	48pcs / box
81CNQ045	PRM2	Nickel plated	48pcs / box
81CNQ045S1	PRM2	PbSn dipped	48pcs / box
81CNQ045S2	PRM2	Pure Sn dipped	48pcs / box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	35(81CNQ035) 40(81CNQ040) 45(81CNQ045)	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 141^\circ\text{C}$ , rectangular wave form	80	A
Peak One Cycle Non-Repetitive Surge Current(per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	950	A
Non-Repetitive Avalanche Energy(peg leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 8\text{A}$ , $L = 1.7\text{mH}$	54	mJ
Repetitive Avalanche Current(peg leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	8	A

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**Electrical Characteristics:**

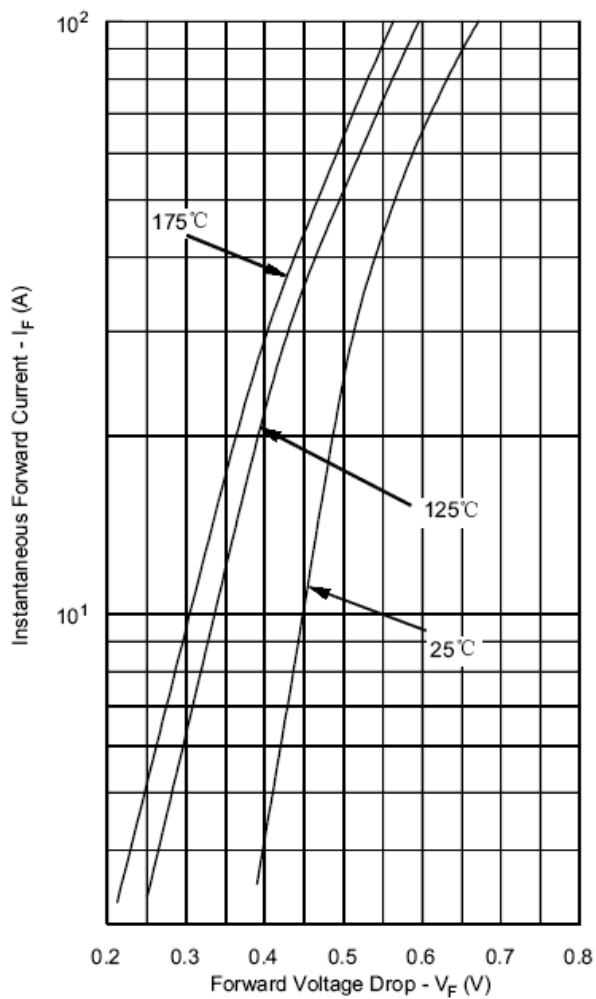
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	$V_{F1}$	@ 40A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.54	0.60	V
		@ 80A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.64	0.74	
	$V_{F2}$	@ 40A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.46	0.54	V
		@ 80A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.56	0.66	
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	0.03	5	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	25	45	mA
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	2200	2600	pF
Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	5.5	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/ $\mu\text{s}$

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

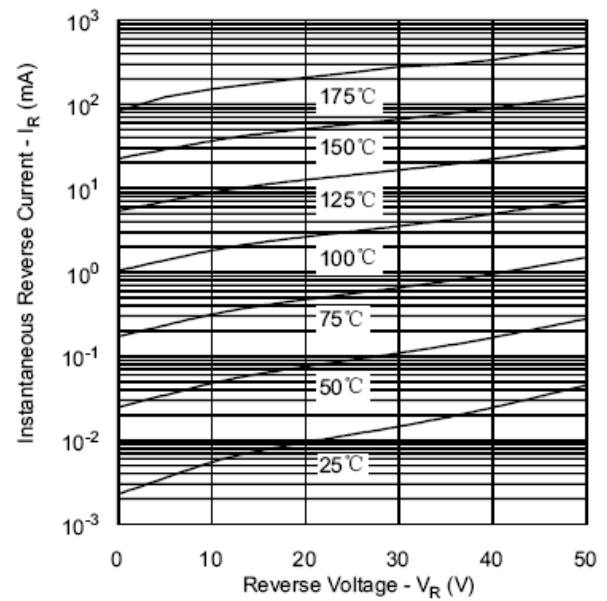
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.42	$^\circ\text{C/W}$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.30	$^\circ\text{C/W}$
Mounting Torque	$T_M$	-	40(min)	Kg-cm
			58(max)	
Approximate Weight	wt	-	7.8	g
Case Style	PRM2 PRM2-SL PRM2-SM			

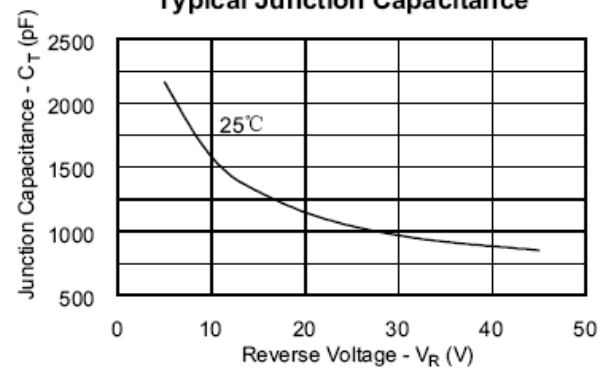
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**





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