

Technical Data  
Data Sheet N1060, Rev. -

Green Products

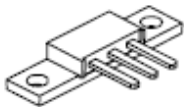
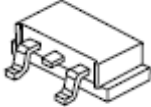
## 81CNQ035/81CNQ040/81CNQ045 SCHOTTKY RECTIFIER

### Applications:

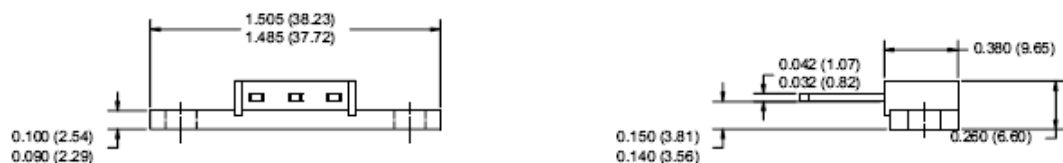
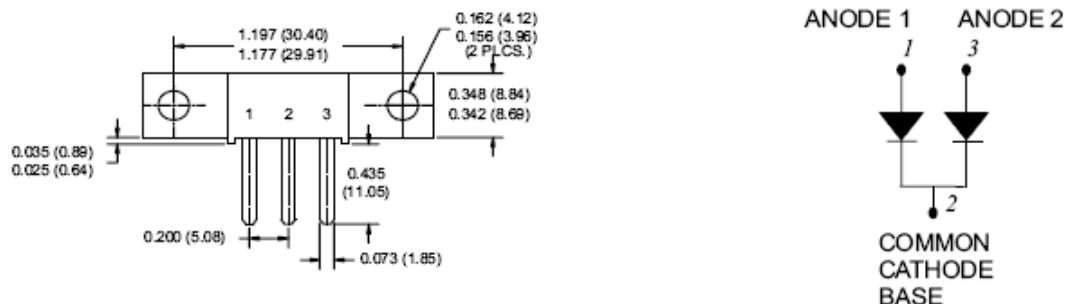
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

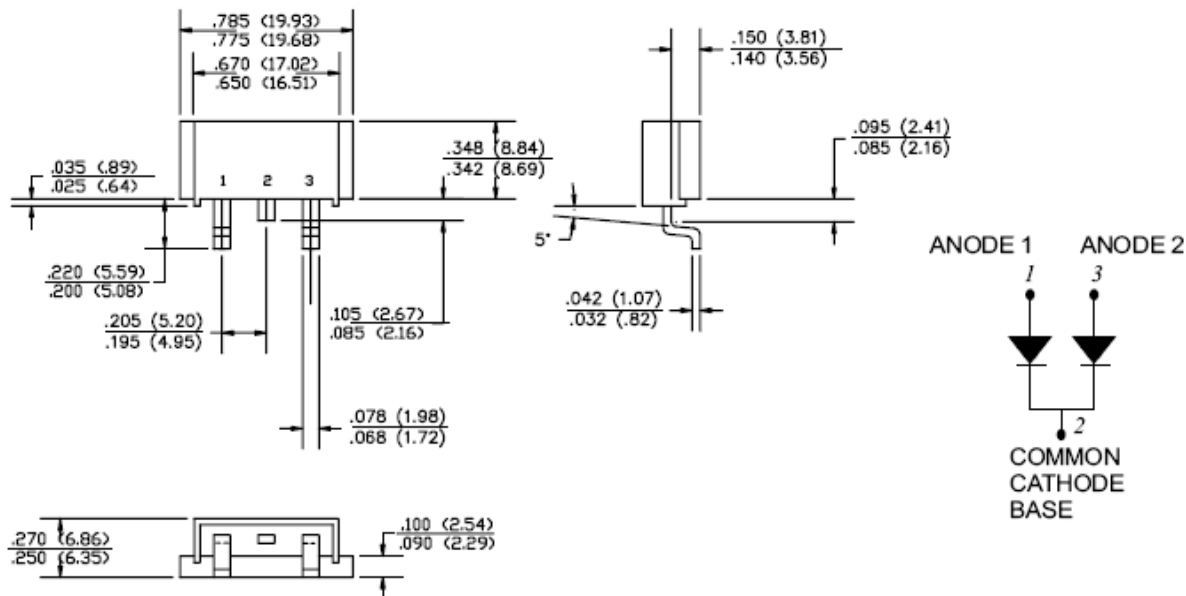
- 175°C T<sub>J</sub> operation
- Center tap module
- Very Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, high 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		
81CNQ...	81CNQ...SL	81CNQ...SM
		
<b>PRM2</b>	<b>PRM2-SL</b>	<b>PRM2-SM</b>

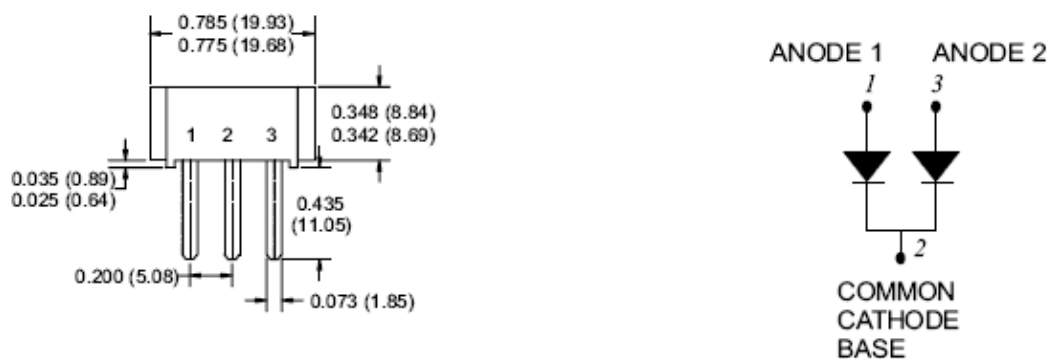
Mechanical Dimensions: In Inches / mm



### PRM2



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

**Technical Data**  
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**Maximum Ratings:**
**Green Products**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	35(81CNQ035) 40(81CNQ040) 45(81CNQ045)	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C = 141^\circ\text{C}$ , rectangular wave form	80	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	950	A
Non-Repetitive Avalanche Energy(per leg)	$E_{AS}$	$T_J = 25^\circ\text{C}, I_{AS} = 8\text{A}, L = 1.7\text{mH}$	54	mJ
Repetitive Avalanche Current(per 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

**Electrical Characteristics:**

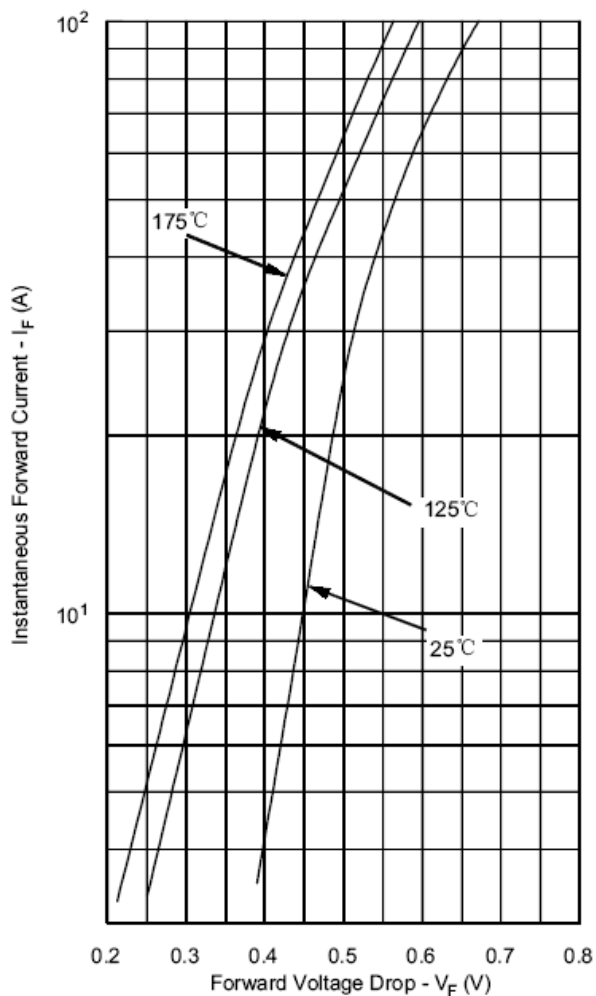
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 40A, Pulse, $T_J = 25^\circ\text{C}$ @ 80A, Pulse, $T_J = 25^\circ\text{C}$	0.60 0.74	V
	$V_{F2}$	@ 40A, Pulse, $T_J = 125^\circ\text{C}$ @ 80A, Pulse, $T_J = 125^\circ\text{C}$	0.54 0.66	V
Max. Reverse Current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

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

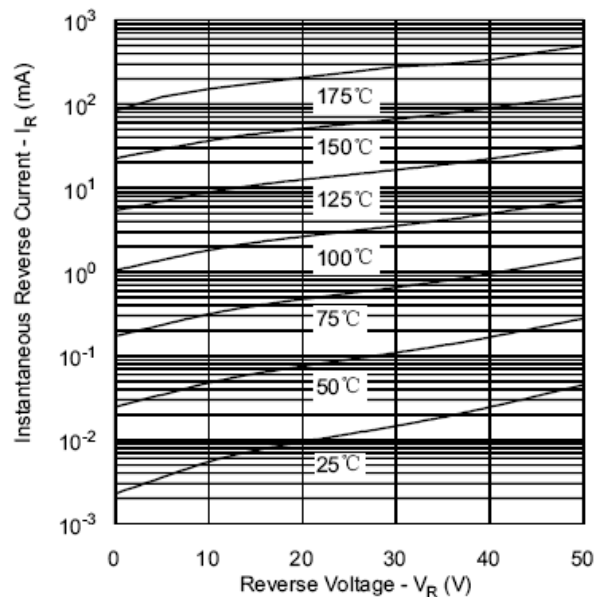
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Maximum 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			

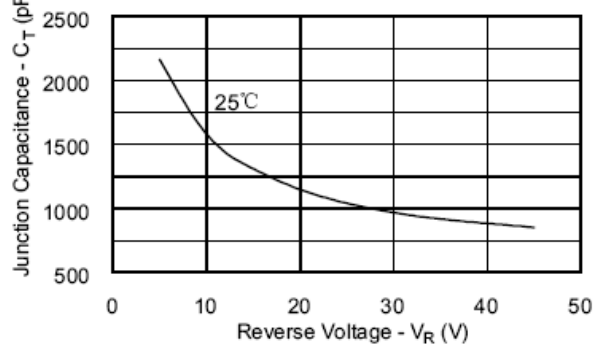
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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