

Technical Data  
Data Sheet 2957, Rev. -

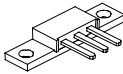
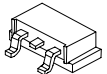
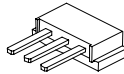
**81CNQ035/81CNQ040/81CNQ045**  
**SCHOTTKY RECTIFIER**

**Applications:**

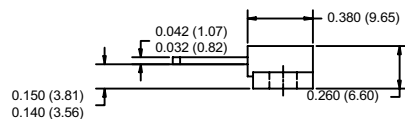
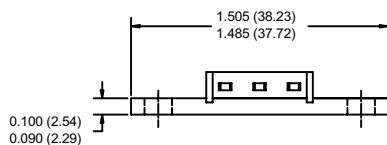
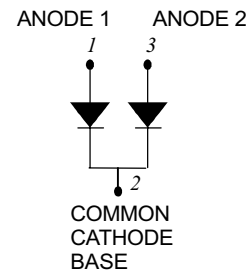
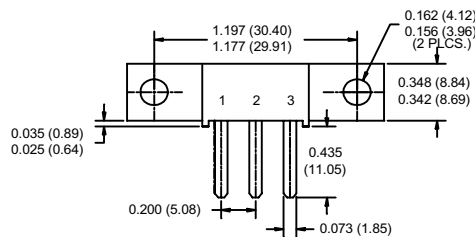
- Switching power supply • Free-Wheeling diodes • Reverse battery protection • Converters

**Features:**

- 175°C T<sub>J</sub> operation
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- New fully transfer-mould low profile, small footprint, high current package

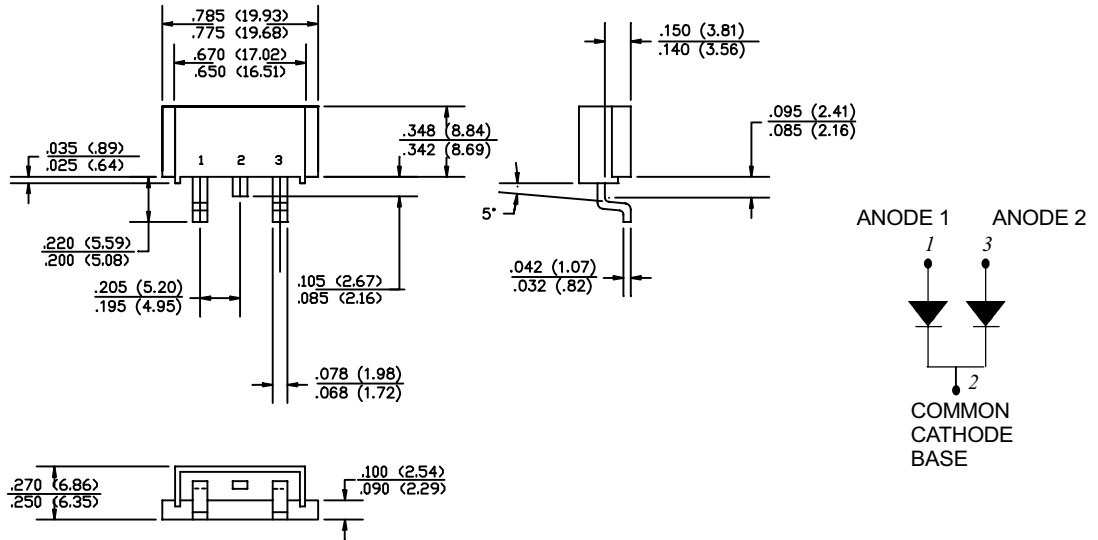
Case styles		
<p>81CNQ...</p>  <p>PRM2</p>	<p>81CNQ...SL</p>  <p>PRM2-SL</p>	<p>81CNQ...SM</p>  <p>PRM2-SM</p>

**Mechanical Dimensions: In Inches / mm**

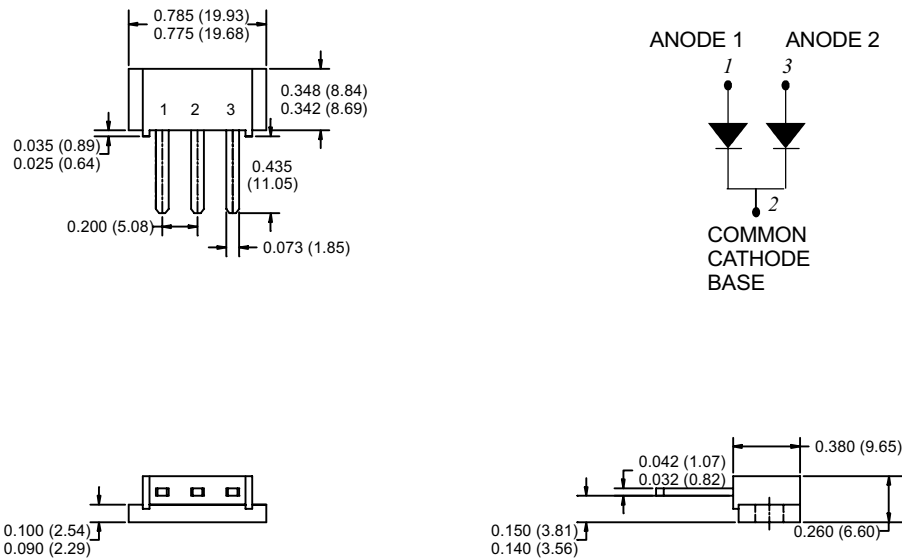


**PRM2**

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**PRM2-SL**



**PRM2-SM**

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	35(81CNQ035) 40(81CNQ040) 45(81CNQ045)	V
Max. Average Forward Current	$I_{F(AV)}$	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) *	$V_{F1}$	@ 40 A, Pulse, $T_J = 25^\circ\text{C}$ @ 80 A, Pulse, $T_J = 25^\circ\text{C}$	0.60 0.74	V
	$V_{F2}$	@ 40 A, Pulse, $T_J = 125^\circ\text{C}$ @ 80 A, 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/ $\mu\text{s}$

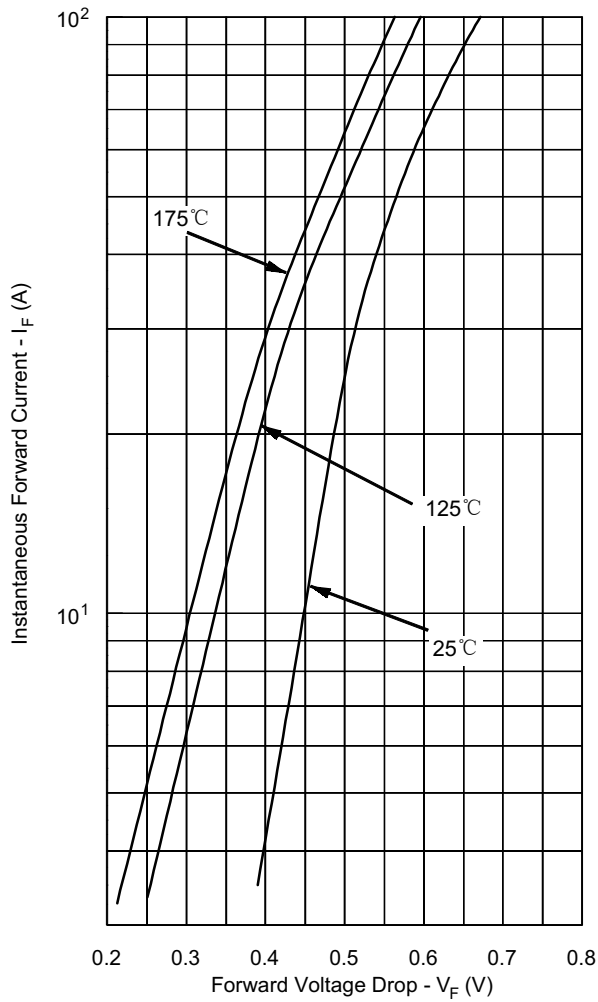
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

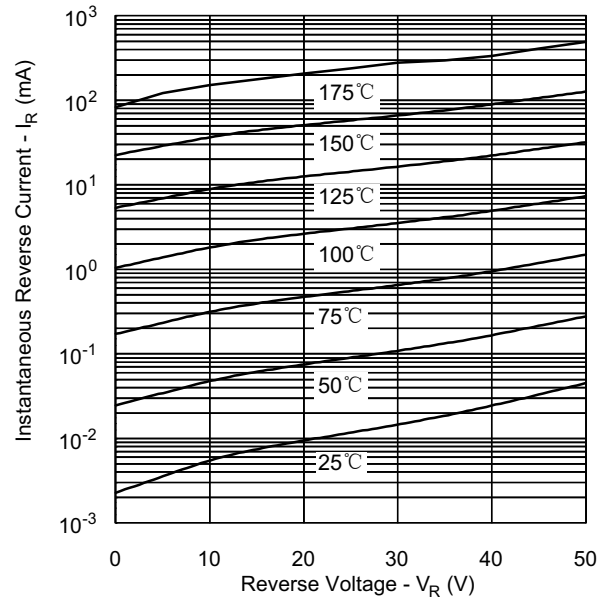
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.42	$^\circ\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink (D61-8 Only)	$R_{\theta CS}$	Mounting surface, smooth and greased Device flatness < 5 mils	0.30	$^\circ\text{C/W}$
Approximate Weight	wt	-	7.8	g
Mounting Torque (D61-8 Only)	$T_M$	-	40 (min) 58 (max)	Kg-cm
Case Style	PRM2 PRM2-SL PRM2-SM			

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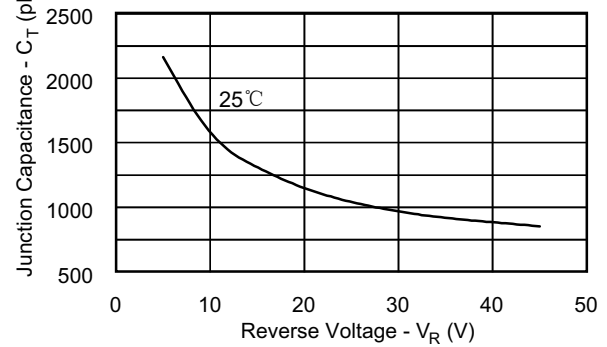
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**TECHNICAL DATA**

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