




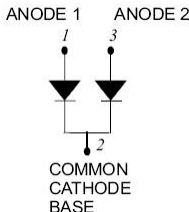
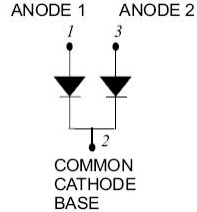
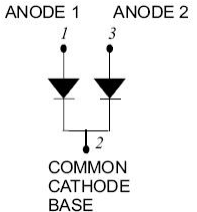
81CNQ SERIES SCHOTTKY RECTIFIER

Applications

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

Features

- 175°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

81CNQ...	81CNQ...SL	81CNQ...SM
		
		
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	-	35(81CNQ035) 40(81CNQ040) 45(81CNQ045)	V
Average Rectified Forward Current	I _{F (AV)}	50% duty cycle @T _C =141°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	950	A
Non-Repetitive Avalanche Energy (Per leg)	E _{AS}	T _J =25°C, I _{AS} =8A, L=1.7mH	54	mJ
Repetitive Avalanche Current(Per 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	0.54	0.60	V
		@ 80A, Pulse, T _J = 25 °C	0.64	0.74	
	V _{F2}	@ 40A, Pulse, T _J = 125 °C	0.46	0.54	V
		@ 80A, Pulse, T _J = 125 °C	0.56	0.66	
Reverse Current (Per leg) *	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.03	5	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	25	45	mA
Junction Capacitance (Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	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/μs

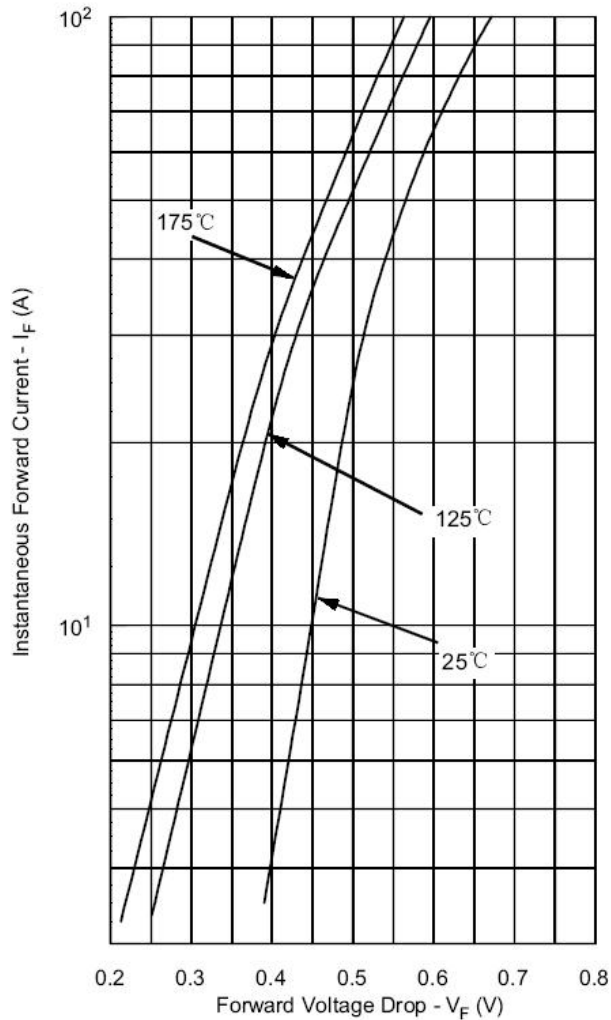
* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

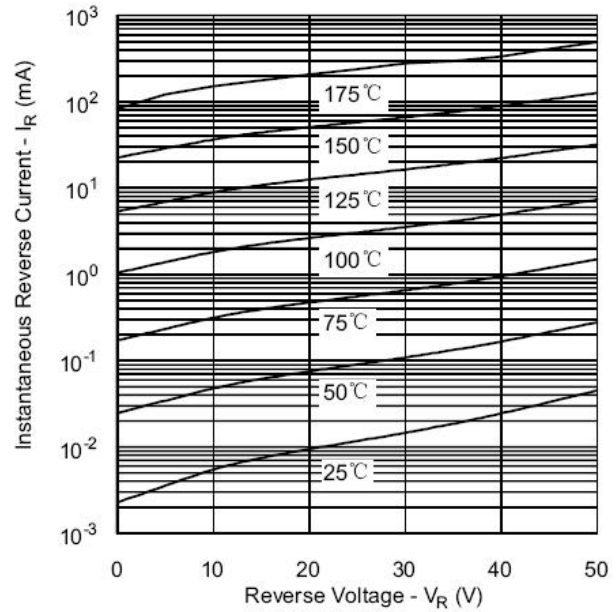
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +175	°C
Storage Temperature	T _{stg}	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case (per leg)	R _{θJC}	DC operation	0.85	°C/W
Typical Thermal Resistance Junction to Case (per package)	R _{θJC}	DC operation	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

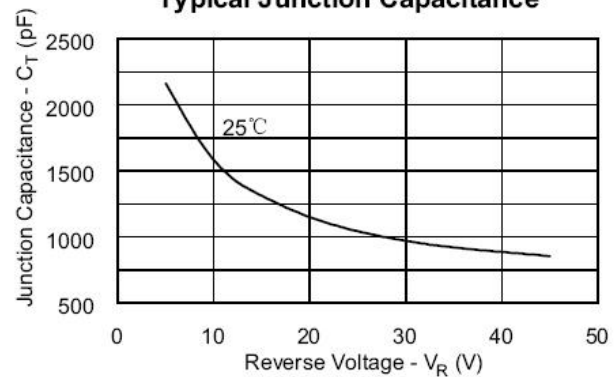
Typical Forward Characteristics



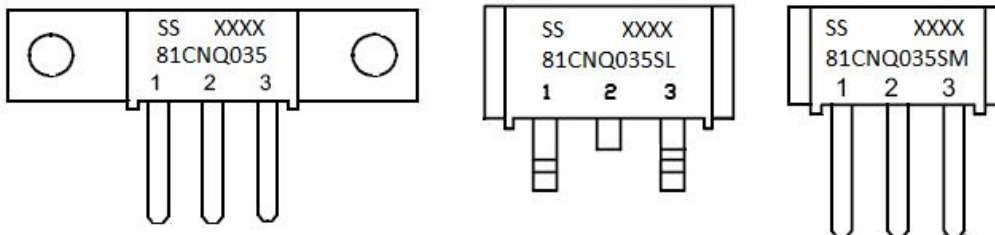
Typical Reverse Characteristics



Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

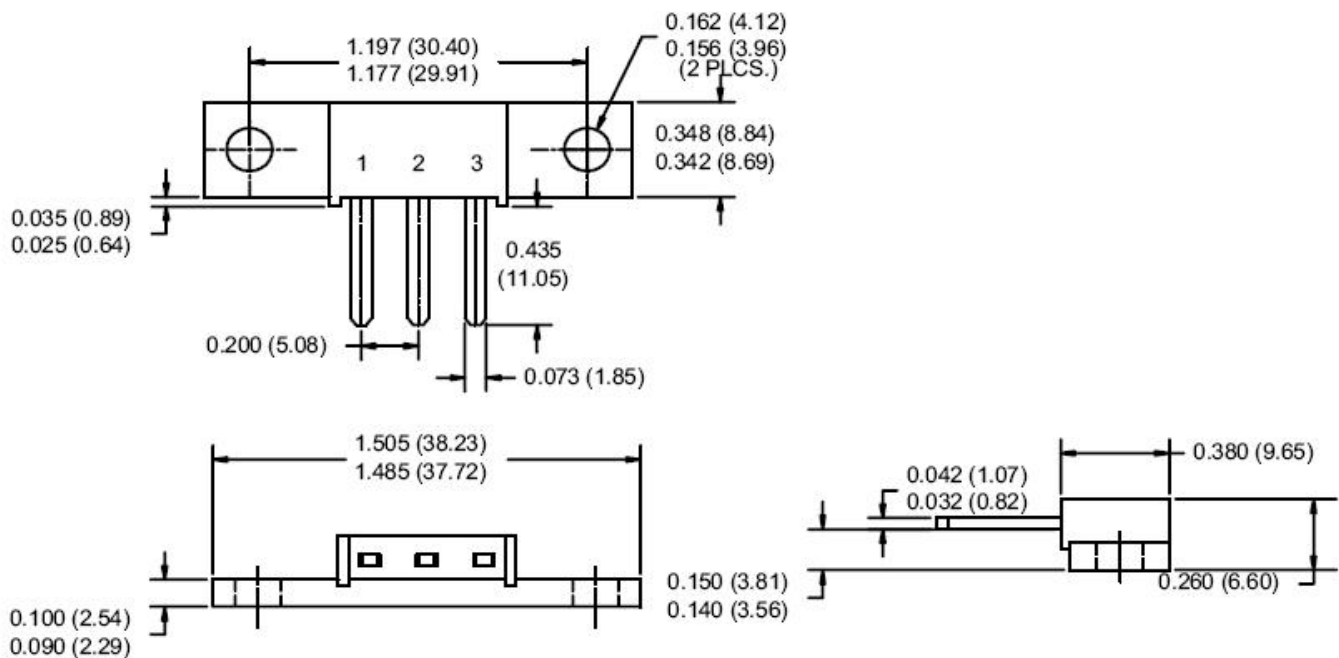
1st row SS YYWWL
2nd row 81CNQ035/SL/SM
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

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

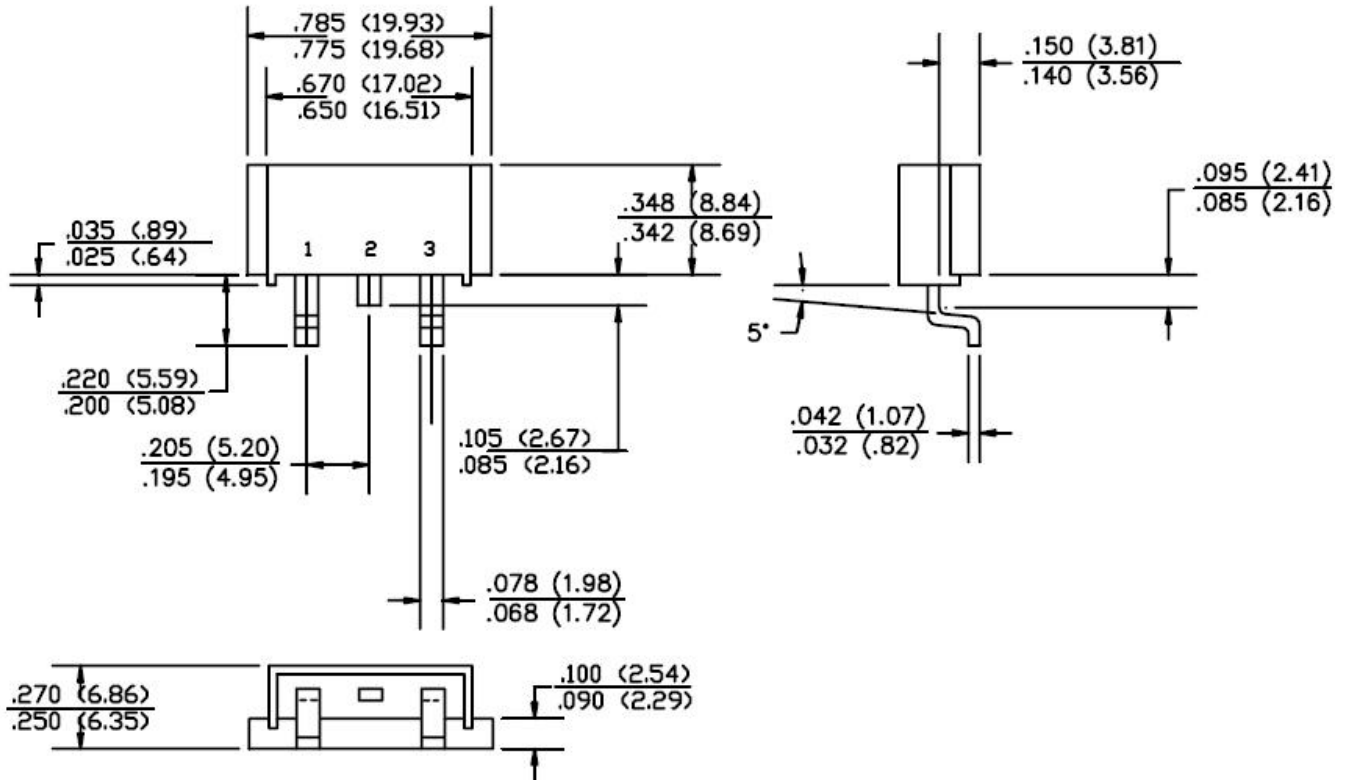
Ordering Information

Device	Package	Terminals finish	Shipping
81CNQ035	PRM2	Nickel plated	48pcs / box
81CNQ035S2	PRM2	Pure Sn dipped	48pcs / box
81CNQ040	PRM2	Nickel plated	48pcs / box
81CNQ040S2	PRM2	Pure Sn dipped	48pcs / box
81CNQ045	PRM2	Nickel plated	48pcs / box
81CNQ045S2	PRM2	Pure Sn dipped	48pcs / box
81CNQ035SL	PRM2-SL	Nickel plated	100pcs / box
81CNQ040SL	PRM2-SL	Nickel plated	100pcs / box
81CNQ045SL	PRM2-SL	Nickel plated	100pcs / box
81CNQ035SM	PRM2-SM	Nickel plated	48pcs / box
81CNQ035SMS2	PRM2-SM	Pure Sn dipped	48pcs / box
81CNQ040SM	PRM2-SM	Nickel plated	48pcs / box
81CNQ040SMS2	PRM2-SM	Pure Sn dipped	48pcs / box
81CNQ045SM	PRM2-SM	Nickel plated	48pcs / box
81CNQ045SMS2	PRM2-SM	Pure Sn dipped	48pcs / box

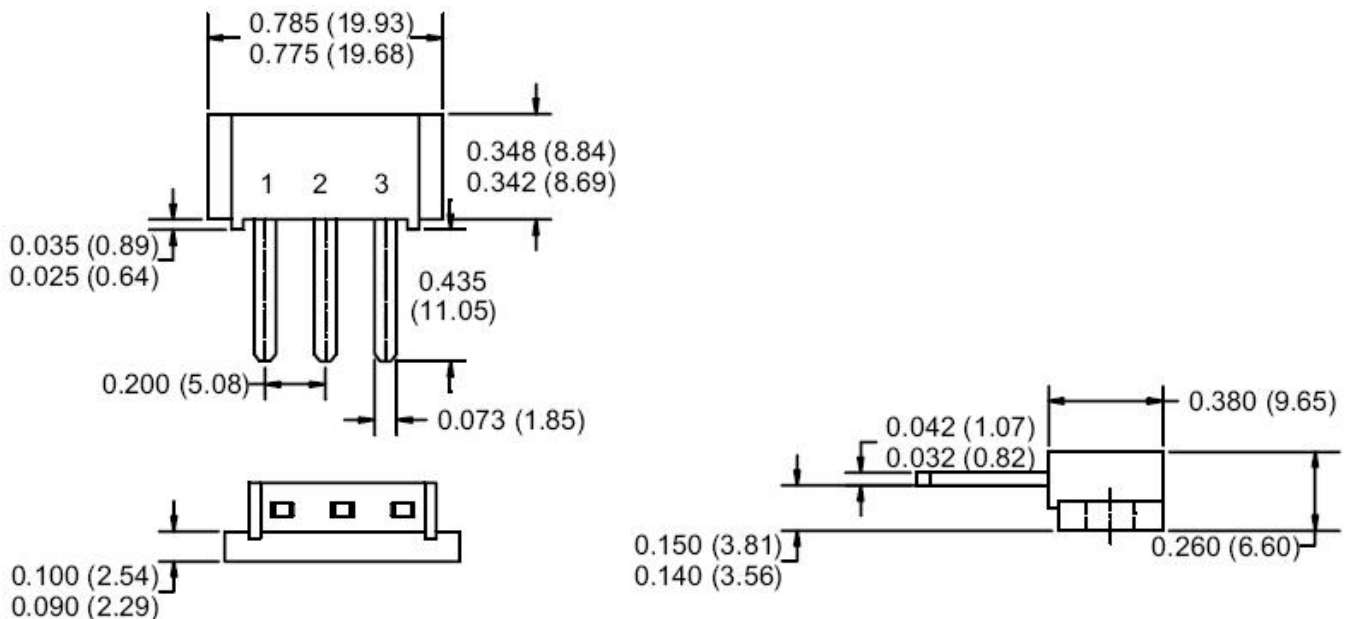
Mechanical Dimensions PRM2 (Inches/Millimeters)



Mechanical Dimensions PRM2-SL (Inches/Millimeters)



Mechanical Dimensions PRM2-SM (Inches/Millimeters)





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