

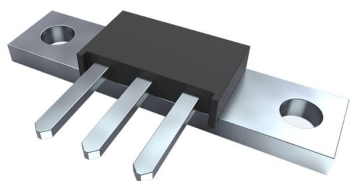

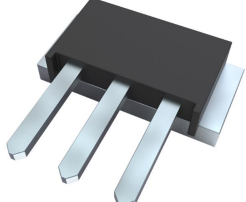
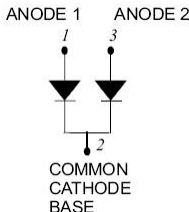
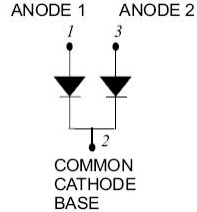
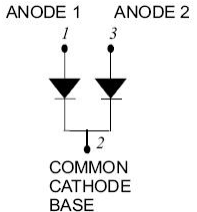
81CNQ SERIES SCHOTTKY RECTIFIER

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 (limiting values, at 25 °C unless otherwise specified)

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

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per leg) *	V _{F1}	@ 40A, Pulse, T _J = 25 °C	0.59	0.68	V
	V _{F2}	@ 40A, Pulse, T _J = 125 °C	0.53	0.60	V
Reverse Current (Per leg) *	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.02	5	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	5	45	mA
Junction Capacitance (Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	2160	2600	pF

* 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	0.5	°C/W
Typical Thermal Resistance Junction to Case (per package)	R _{θJC}	DC operation	0.25	°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth and greased	0.21	°C/W
Mounting Torque	TM	-	40(min)	Kg-cm
			58(max)	

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

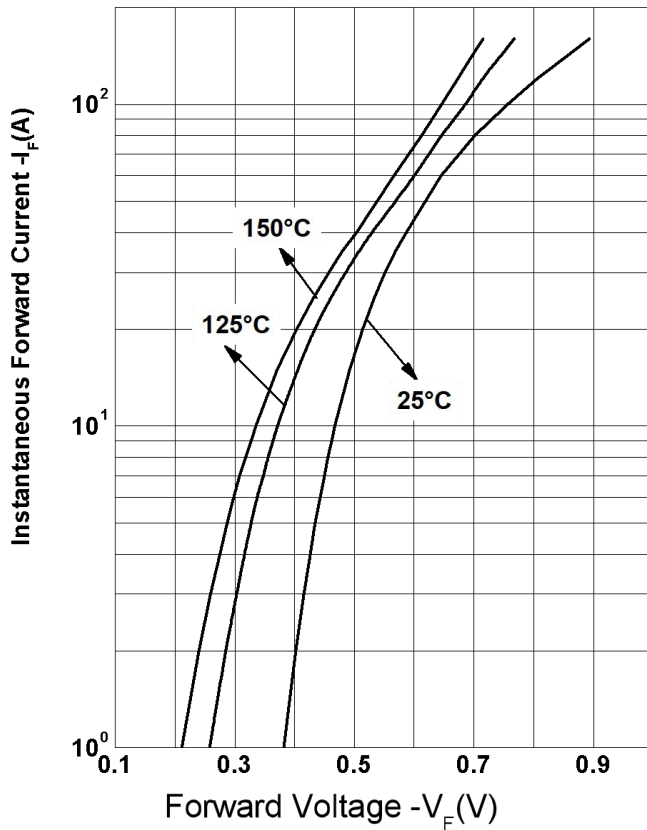


Figure 2
Typical Reverse Characteristics

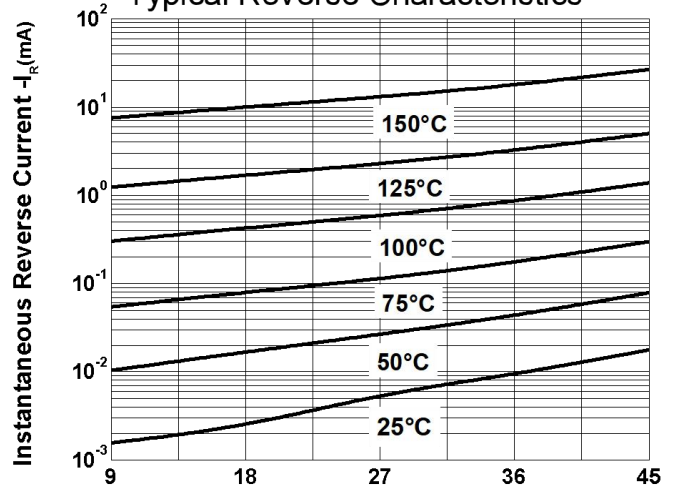
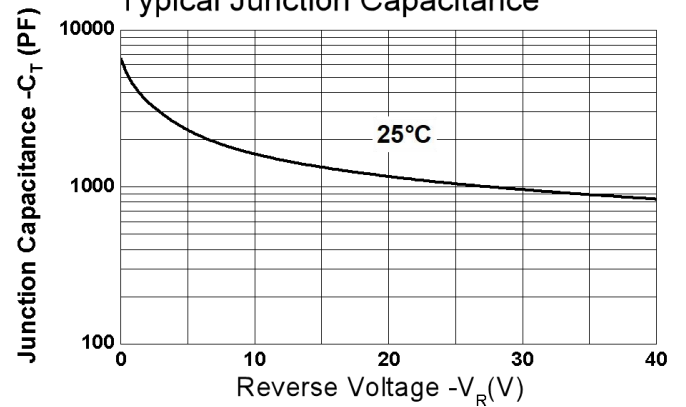
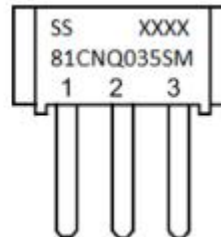
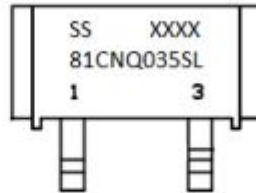
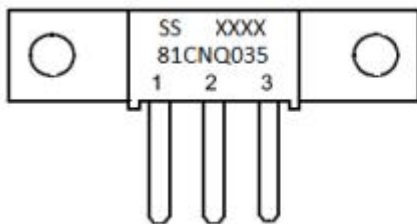


Figure 3
Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

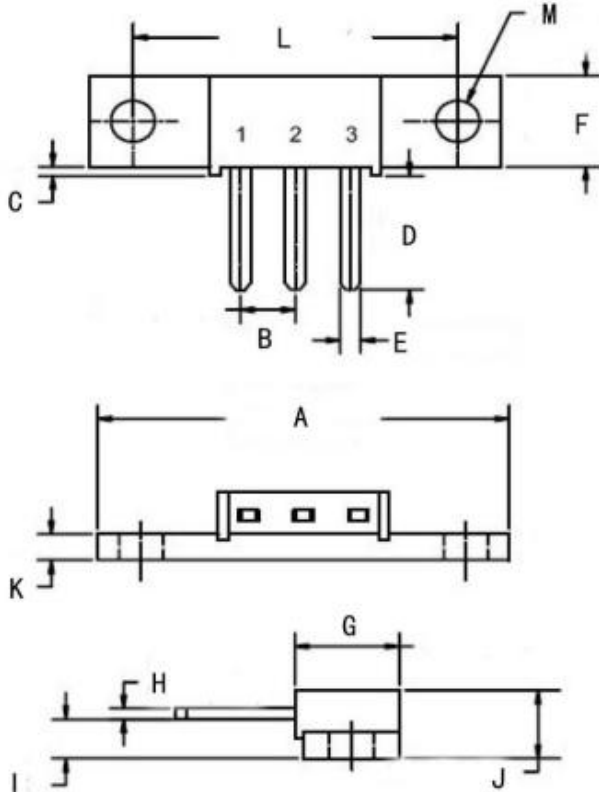
1st row SS YYWWL
 2nd row 81CNQ035/SL/SM
 3rd row 1 2 3 (pin)
 SS = SS
 YY = Year
 WW = Week

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

Ordering Information

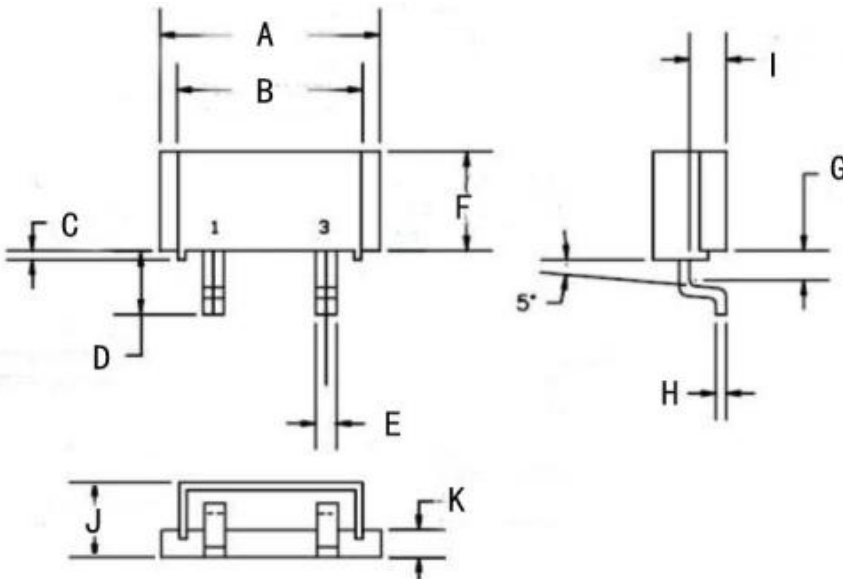
Device	Package	Approximate Weight(g)	Terminals finish	Base plate finish	Shipping
81CNQ035	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
81CNQ035S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
81CNQ040	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
81CNQ040S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
81CNQ045	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
81CNQ045S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
81CNQ035SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
81CNQ040SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
81CNQ045SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
81CNQ035SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
81CNQ035SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
81CNQ040SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
81CNQ040SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
81CNQ045SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
81CNQ045SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box

Mechanical Dimensions PRM2 (Inches/Millimeters)



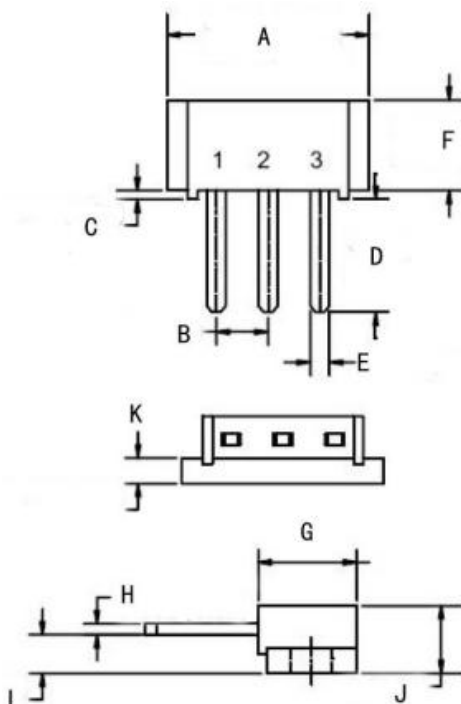
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	37.72	38.23	1.485	1.506
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	1.78	2.28	0.070	0.090
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.75	1.15	0.029	0.046
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.40	2.60	0.094	0.103
L	29.51	30.40	1.161	1.197
M	3.75	4.33	0.147	0.171

Mechanical Dimensions PRM2-SL (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	19.70	20.30	0.776	0.799
B	16.51	17.02	0.650	0.670
C	0.62	1.02	0.024	0.040
D	4.97	5.97	0.196	0.235
E	1.78	2.28	0.070	0.090
F	8.46	9.06	0.333	0.357
G	2.04	2.54	0.080	0.100
H	0.75	1.15	0.029	0.045
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.274	0.297
K	2.21	2.71	0.087	0.106

Mechanical Dimensions PRM2-SM (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	19.70	20.30	0.776	0.799
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	1.78	2.28	0.070	0.090
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.75	1.15	0.029	0.045
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.21	2.71	0.087	0.106



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