



**THE DATASHEET OF  
84CNQ045**



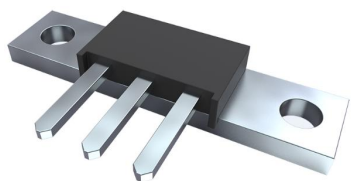

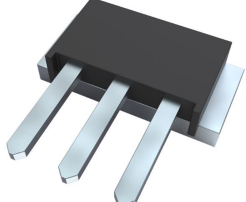
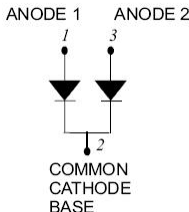
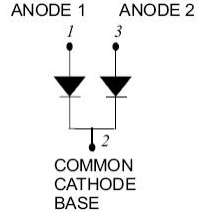
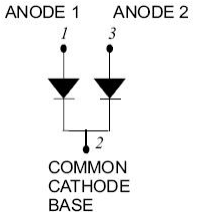
# 84CNQ035/84CNQ040/84CNQ045 SCHOTTKY RECTIFIER

## Applications

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

## Features

- 125°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 electrical and life testing can be performed upon request

84CNQ...	84CNQ...SL	84CNQ...SM
		
 <p>ANODE 1 ANODE 2 COMMON CATHODE BASE</p>	 <p>ANODE 1 ANODE 2 COMMON CATHODE BASE</p>	 <p>ANODE 1 ANODE 2 COMMON CATHODE BASE</p>
<b>PRM2</b>	<b>PRM2-SL</b>	<b>PRM2-SM</b>

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

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	35 (84CNQ035)	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		40 (84CNQ040)	
DC Blocking Voltage	V <sub>R</sub>		45 (84CNQ045)	
Average Rectified Forward Current	I <sub>F (AV)</sub>	50% duty cycle @T <sub>C</sub> =132°C, rectangular wave form	40(Per Leg) 80(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per leg)	I <sub>FSM</sub>	8.3 ms, half Sine pulse	750	A
Non-Repetitive Avalanche Energy (Peg leg)	E <sub>AS</sub>	T <sub>J</sub> =25°C, I <sub>AS</sub> =8A, L=1.7mH	54	mJ
Repetitive Avalanche Current(Peg leg)	I <sub>AR</sub>	Current decaying linearly to zero in 1 μsec Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub> typical	8	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per leg) *	V <sub>F1</sub>	@ 40A, Pulse, T <sub>J</sub> = 25 °C	0.45	0.49	V
		@ 80A, Pulse, T <sub>J</sub> = 25 °C	0.52	0.62	
	V <sub>F2</sub>	@ 40A, Pulse, T <sub>J</sub> = 125 °C	0.38	0.44	V
		@ 80A, Pulse, T <sub>J</sub> = 125 °C	0.45	0.60	
Reverse Current (Per leg) *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.8	5	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	60	800	mA
Junction Capacitance (Per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	2150	2600	pF

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

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +125	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +125	°C
Typical Thermal Resistance Junction to Case (per leg)	R <sub>θJC</sub>	DC operation	0.5	°C/W
Typical Thermal Resistance Junction to Case (per package)	R <sub>θJC</sub>	DC operation	0.25	°C/W
Typical Thermal Resistance, case to Heat Sink	R <sub>θcs</sub>	Mounting surface, smooth and greased	0.21	°C/W
Mounting Torque	TM	-	40(min)	Kg-cm
			58(max)	
Case Style	PRM2 PRM2-SL PRM2-SM			

**Ratings and Characteristics Curves**

Figure 1  
Typical Forward Characteristics

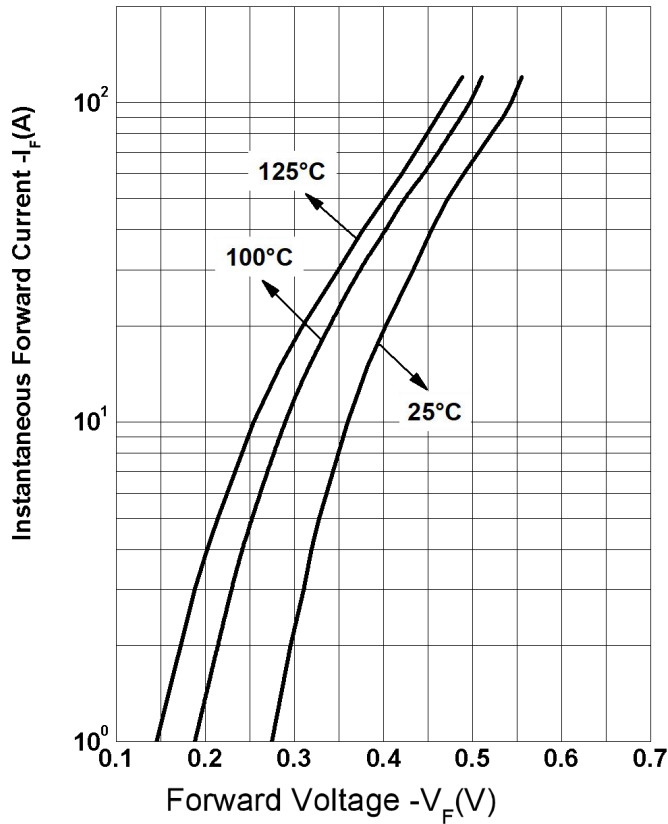


Figure 2  
Typical Reverse Characteristics

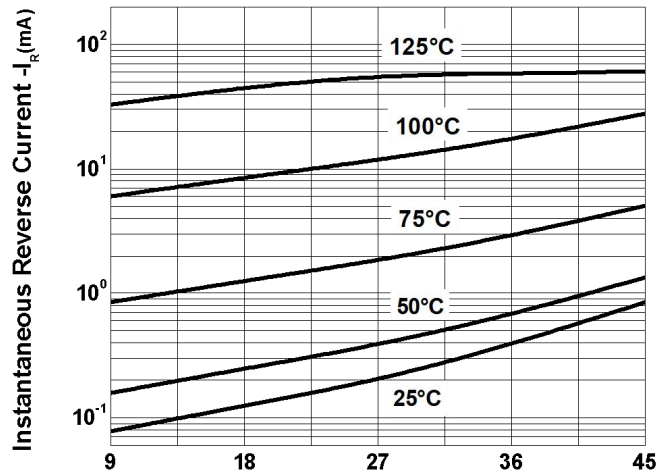
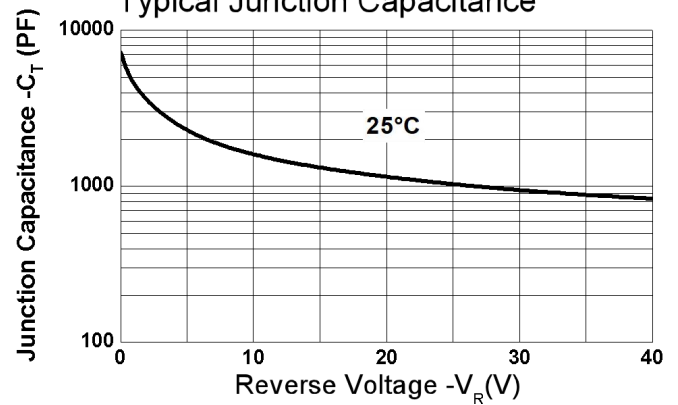
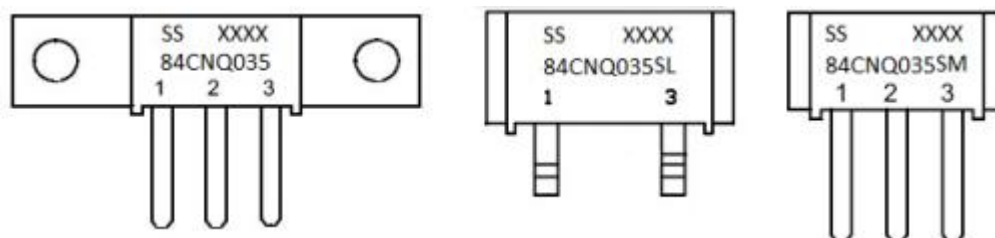


Figure 3  
Reverse Voltage  $-V_R$  (V)  
Typical Junction Capacitance



## Marking Diagram



Where XXXX is YYWW

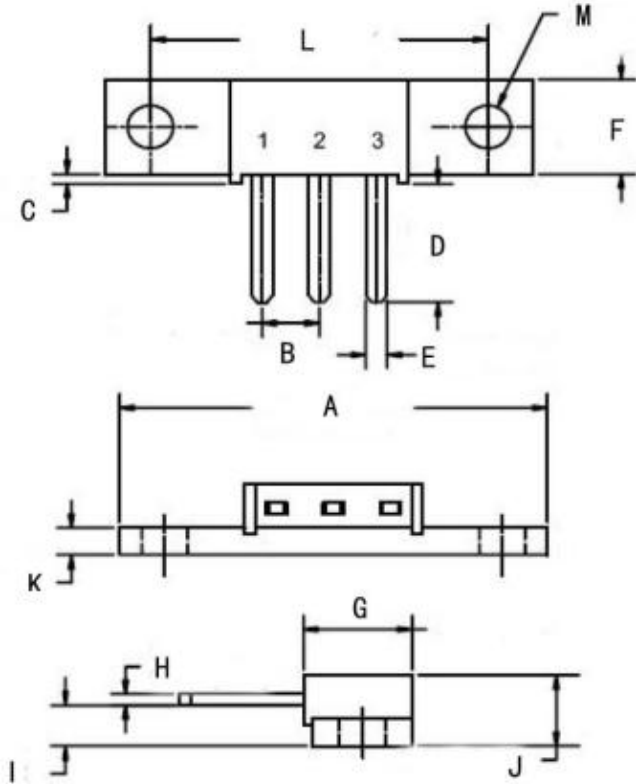
1st row SS YYWWL  
2nd row 84CNQ035/SL/SM  
3rd row 1 2 3 (pin)  
SS = SS  
YY = Year  
WW = Week

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

## Ordering Information

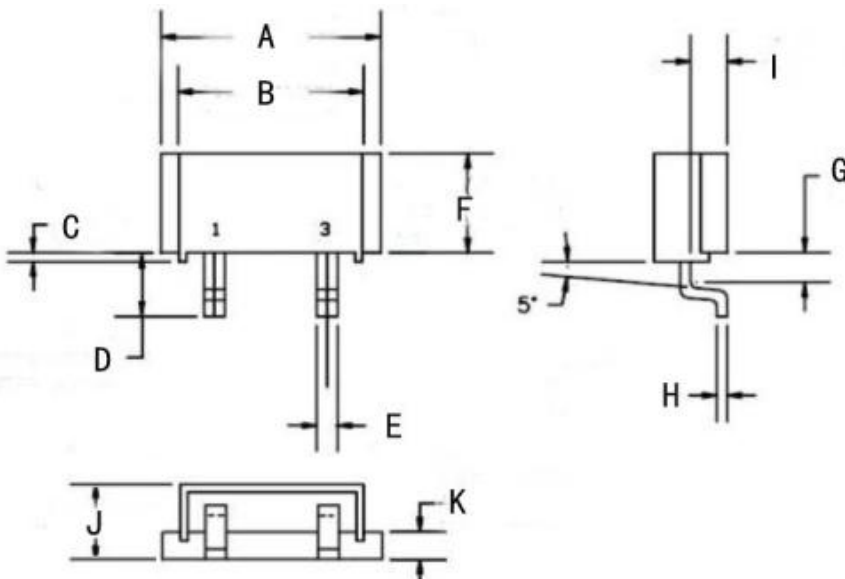
Device	Package	Approximate Weight(g)	Terminals finish	Base plate finish	Shipping
84CNQ035	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
84CNQ035S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
84CNQ035SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
84CNQ035SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
84CNQ035SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
84CNQ040	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
84CNQ040S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
84CNQ040SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
84CNQ040SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
84CNQ040SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
84CNQ045	PRM2	8.6	Nickel plated	Nickel plated	48pcs / box
84CNQ045S2	PRM2	8.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box
84CNQ045SL	PRM2-SL	5.3	Pure Sn plated	Pure Sn plated	100pcs / box
84CNQ045SM	PRM2-SM	5.6	Nickel plated	Nickel plated	48pcs / box
84CNQ045SMS2	PRM2-SM	5.6	Pure Sn dipped (dipped heigh 6-8mm)	Nickel plated	48pcs / box

**Mechanical Dimensions PRM2 (Inches/Millimeters)**



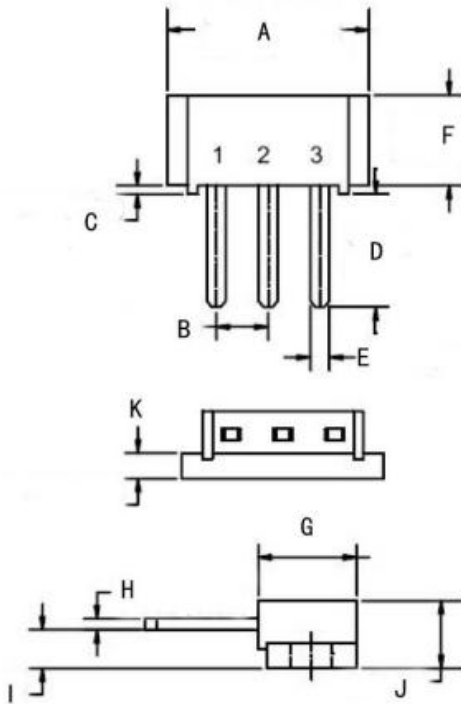
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	37.72	38.23	1.485	1.506
B	5.08		0.200	
C	0.62	1.02	0.024	0.040
D	10.38	12.98	0.408	0.511
E	1.78	2.28	0.070	0.090
F	8.46	9.06	0.333	0.357
G	9.24	9.85	0.363	0.388
H	0.75	1.15	0.029	0.046
I	3.19	4.19	0.125	0.165
J	6.95	7.55	0.273	0.298
K	2.40	2.60	0.094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