

## 444CNQ035/444CNQ040/444CNQ045 SCHOTTKY RECTIFIER

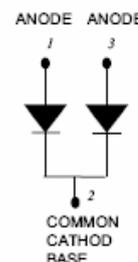
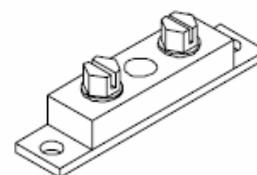
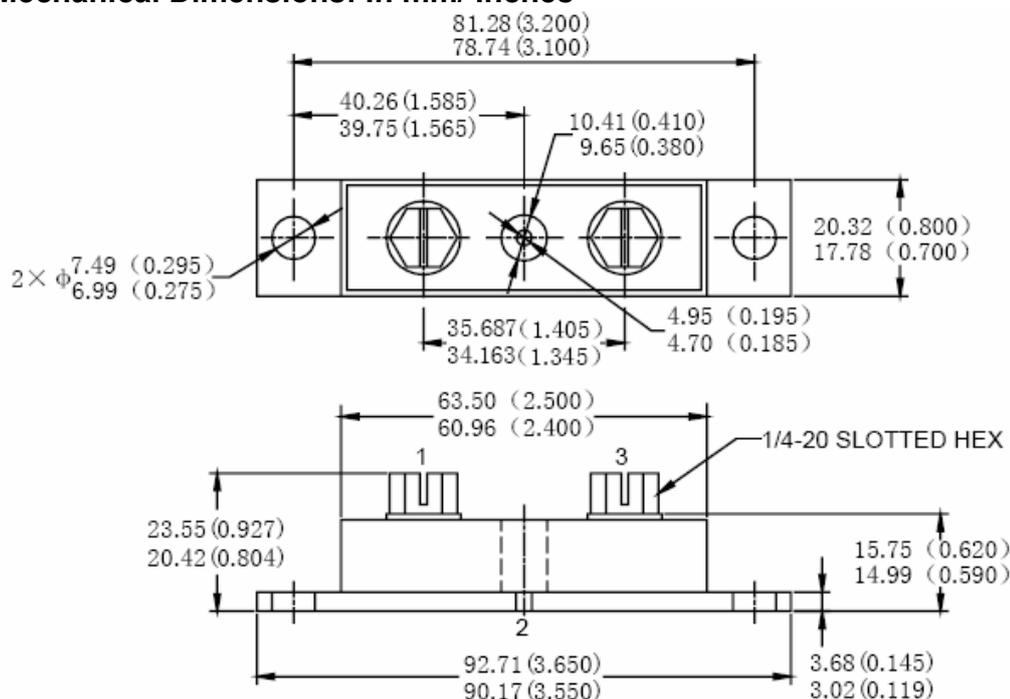
### Applications:

- High current switching power supply • Plating power supply • Free-Wheeling diodes
- Reverse battery protection • Converters • UPS System • Welding

### Features:

- 125°C T<sub>J</sub> operation
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Mechanical Dimensions: In mm/ Inches



### PRM4 (Non-Isolated)

#### MARKING, MOLDING RESIN

Marking for 444CNQ035/040/045, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 444CNQ035/040/045

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**  
**Data Sheet N1234, Rev. B**  
**Maximum Ratings:**
**Green Products**

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	$V_{RWM}$	-	35	444CNQ035	V
			40	444CNQ040	
			45	444CNQ045	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=81^\circ\text{C}$ , rectangular wave form	220	per leg	A
			440	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	4560		A
Non-Repetitive Avalanche Energy(peg leg)	$E_{AS}$	$T_J=25^\circ\text{C}, I_{AS}=40\text{A}, L=0.34\text{mH}$	270		mJ
Repetitive Avalanche Current(peg 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	40		A

**Electrical Characteristics:**

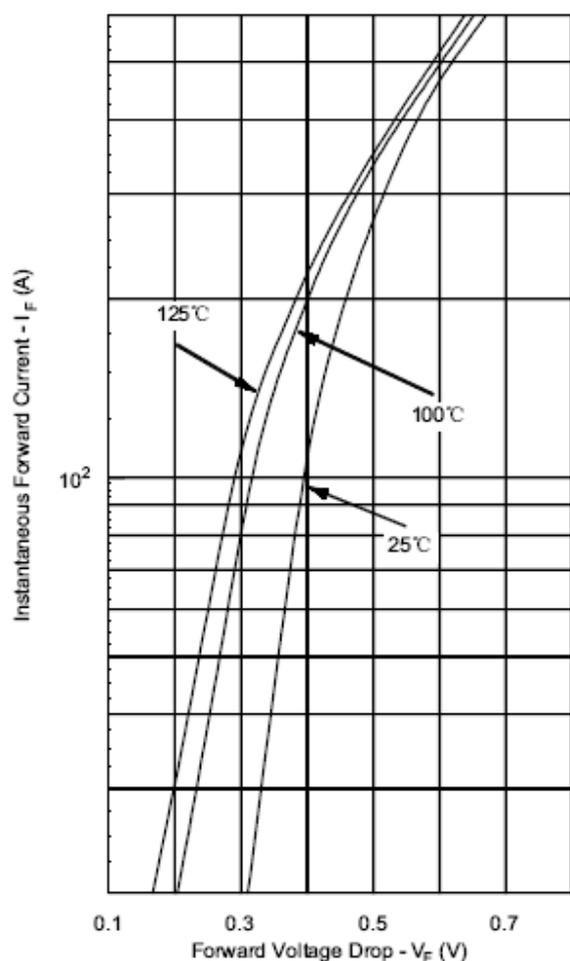
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 220A, Pulse, $T_J = 25^\circ\text{C}$	0.53	V
		@ 440A, Pulse, $T_J = 25^\circ\text{C}$	0.69	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	20	mA
		@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	2400	
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	10300	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	5.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu\text{s}$

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

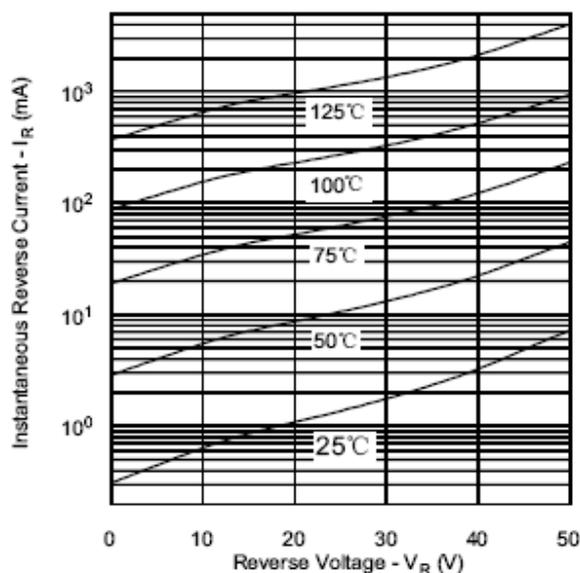
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification		Units
Max. Junction Temperature	$T_J$	-	-55 to +125		$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +125		$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.20		$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.10		$^\circ\text{C/W}$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10		$^\circ\text{C/W}$
Mounting Torque	$T_M$	-	Mounting Torque	24(min) 35(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	79		g
Case Style	PRM4 Non-Isolated				

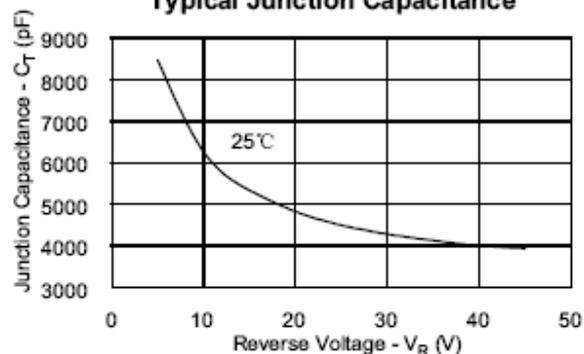
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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