

## 400CNQ035/400CNQ040/400CNQ045 SCHOTTKY RECTIFIER

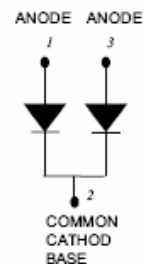
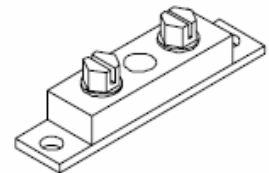
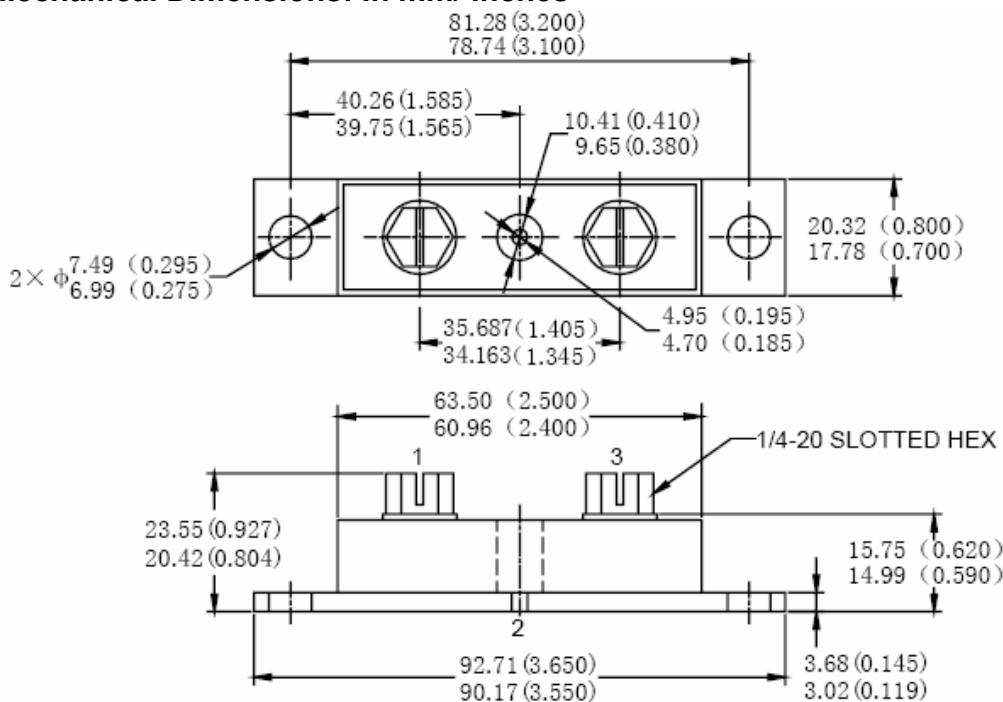
**Applications:**

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

**Features:**

- 150 °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 400CNQ035/040/045, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 400CNQ035/040/045

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**
**Green Products**
**Data Sheet N1223, Rev. B**
**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	$V_{RWM}$	-	35	400CNQ035	V
			40	400CNQ040	
			45	400CNQ045	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=104^{\circ}C$ , rectangular wave form	200	per leg	A
			400	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	4080		A
Non-Repetitive Avalanche Energy(per leg)	$E_{AS}$	$T_J=25^{\circ}C, I_{AS}=40A, L=0.22mH$	180		mJ
Repetitive Avalanche Current(per leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu$ sec Frequency limited by $T_J$ max. $V_A=1.5 \times V_R$ typical	40		A

**Electrical Characteristics:**

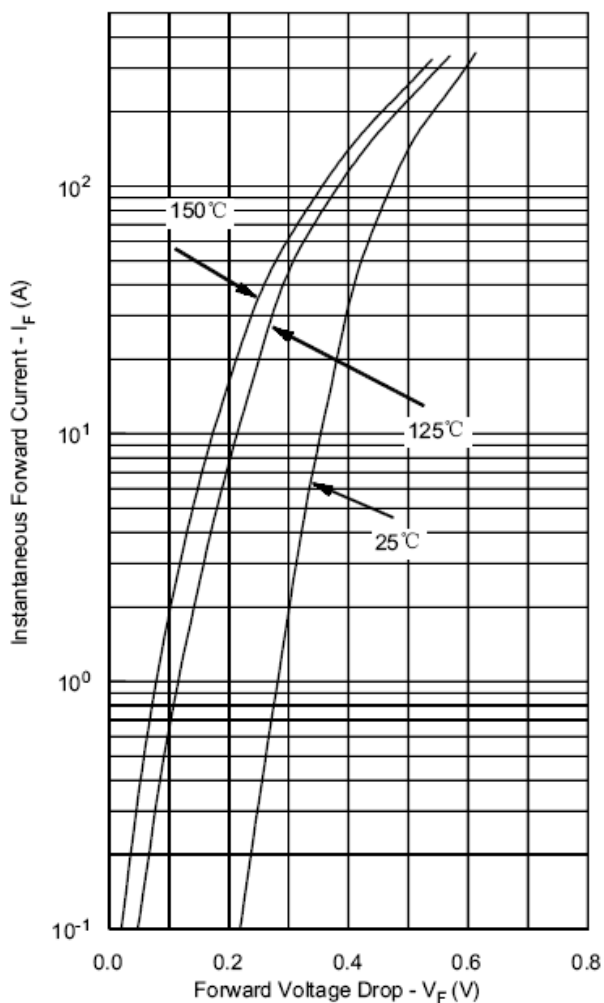
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 200A, Pulse, $T_J = 25^{\circ}C$	0.60	V
		@ 400A, Pulse, $T_J = 25^{\circ}C$	0.73	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R =$ rated $V_R$ $T_J = 25^{\circ}C$	20	mA
		@ $V_R =$ rated $V_R$ $T_J = 125^{\circ}C$	800	
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5V, T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	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/ $\mu$ s
Insulation Voltage	$V_{RMS}$	-	1000	V

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

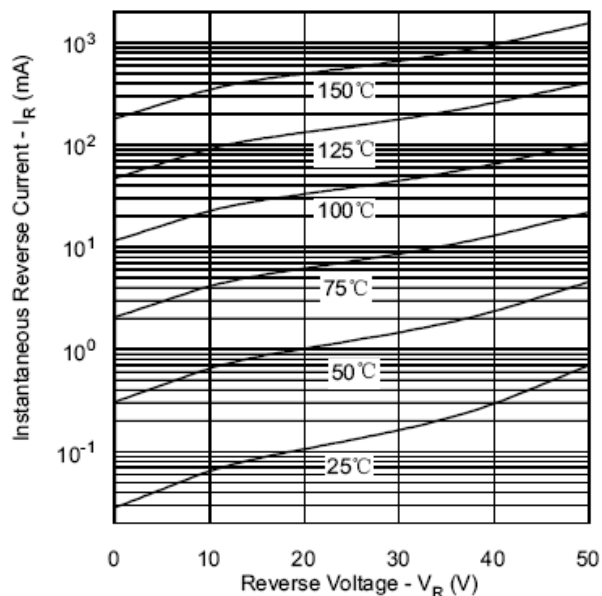
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}C$	
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}C$	
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.20	$^{\circ}C/W$	
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.10	$^{\circ}C/W$	
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10	$^{\circ}C/W$	
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				

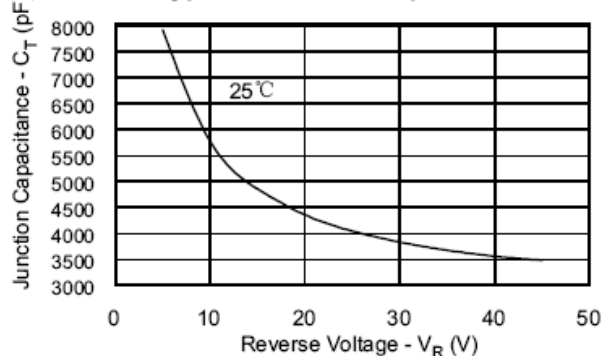
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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