

Technical Data  
Data Sheet 3845, Rev. -

*Green Products*

**401CNQ035-G/401CNQ040-G/401CNQ045-G**  
**SCHOTTKY RECTIFIER**

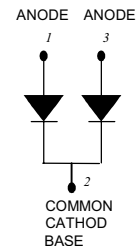
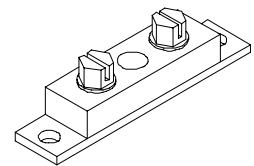
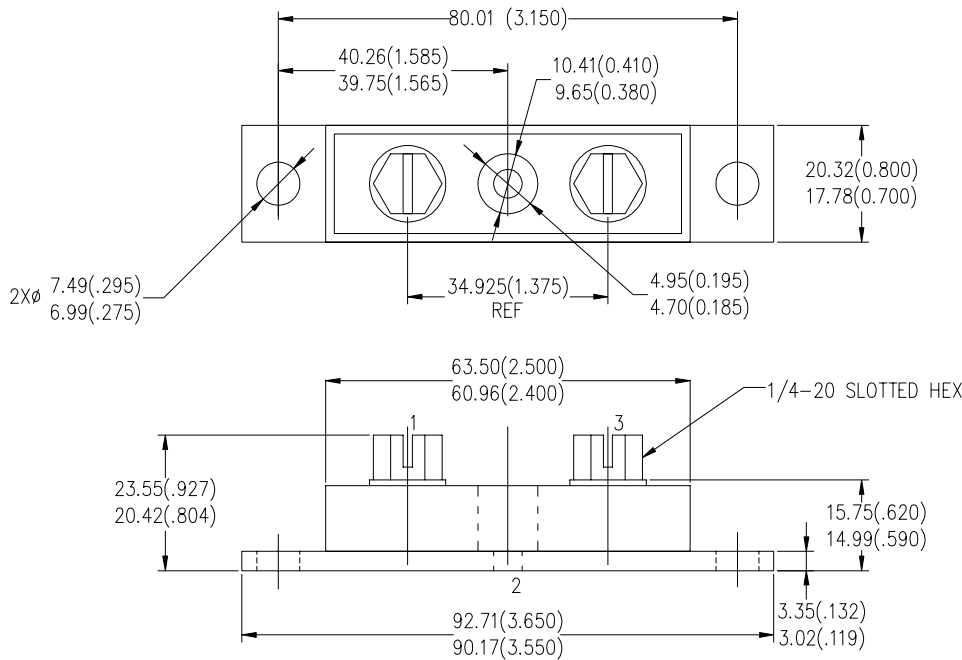
**Applications:**

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

**Features:**

- 175 °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
- Green Products in Compliance with the RoHS Directive

**Mechanical Dimensions: In Inches / mm**



**PRM4(Non-Isolated)**

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Maximum Ratings:

*Green Products*

Characteristics	Symbol	Condition	Max.	Units	
Peak Inverse Voltage	$V_{RWM}$	-	35(401CNQ035-G) 40(401CNQ040-G) 45(401CNQ045-G)	V	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 116^\circ\text{C}$ , rectangular wave form	200 400	per leg per device	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	4140		A
Non-Repetitive Avalanche Energy (per leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 40\text{ A}$ , $L = 0.34\text{ mH}$	270		mJ
Repetitive Avalanche Current (per 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:**

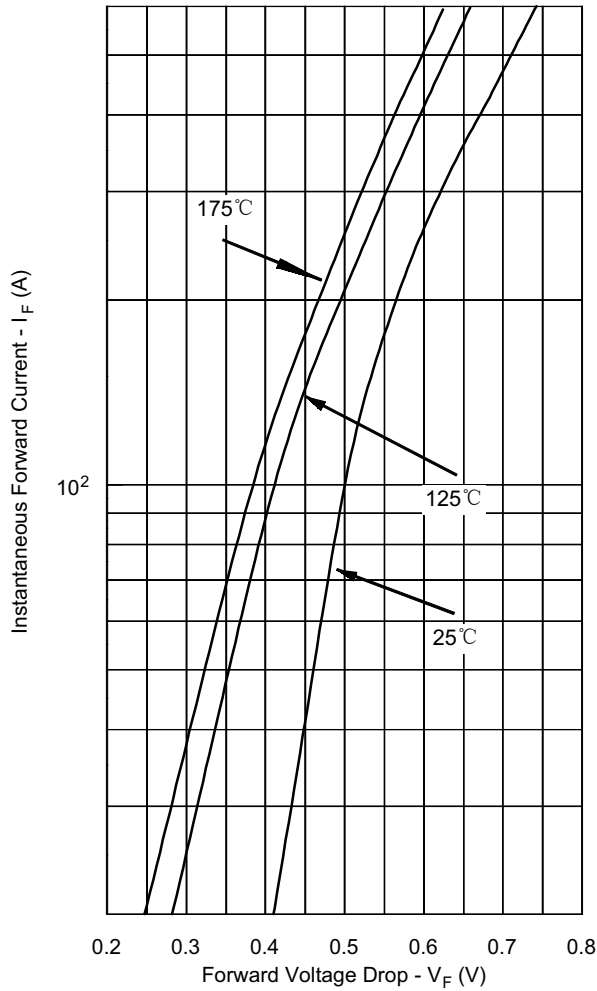
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 200 A, Pulse, $T_J = 25^\circ\text{C}$ @ 400 A, Pulse, $T_J = 25^\circ\text{C}$	0.67 0.78	V
	$V_{F2}$	@ 200 A, Pulse, $T_J = 125^\circ\text{C}$ @ 400 A, Pulse, $T_J = 125^\circ\text{C}$	0.56 0.68	V
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$	20	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$	180	mA
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/ $\mu\text{s}$
Insulation Voltage	$V_{RMS}$		1000	V

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

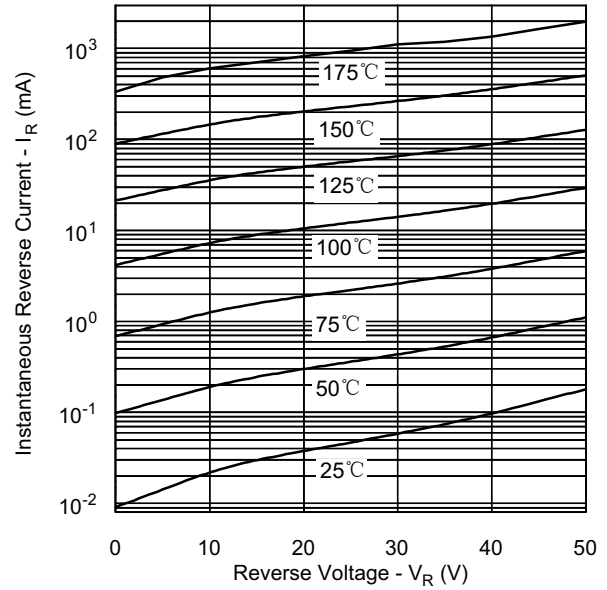
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$	
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$	
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	$^\circ\text{C/W}$	
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.10	$^\circ\text{C/W}$	
Approximate Weight	wt	-	79	g	
Mounting Torque	$T_M$	-	Mounting Torque Base Terminal Torque	24 (min) 35 (max) 35 (min) 46 (max)	kg-cm
Case Style	PRM4 Non-Isolated				

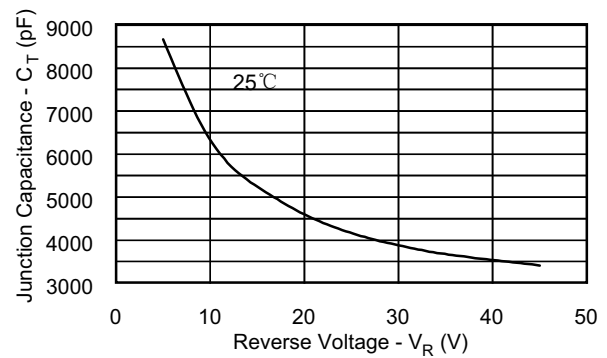
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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