Technical Data
Data Sheet N1212, Rev. B

Green Products

301CNQ035/301CNQ040/301CNQ045
SCHOTTKY RECTIFIER

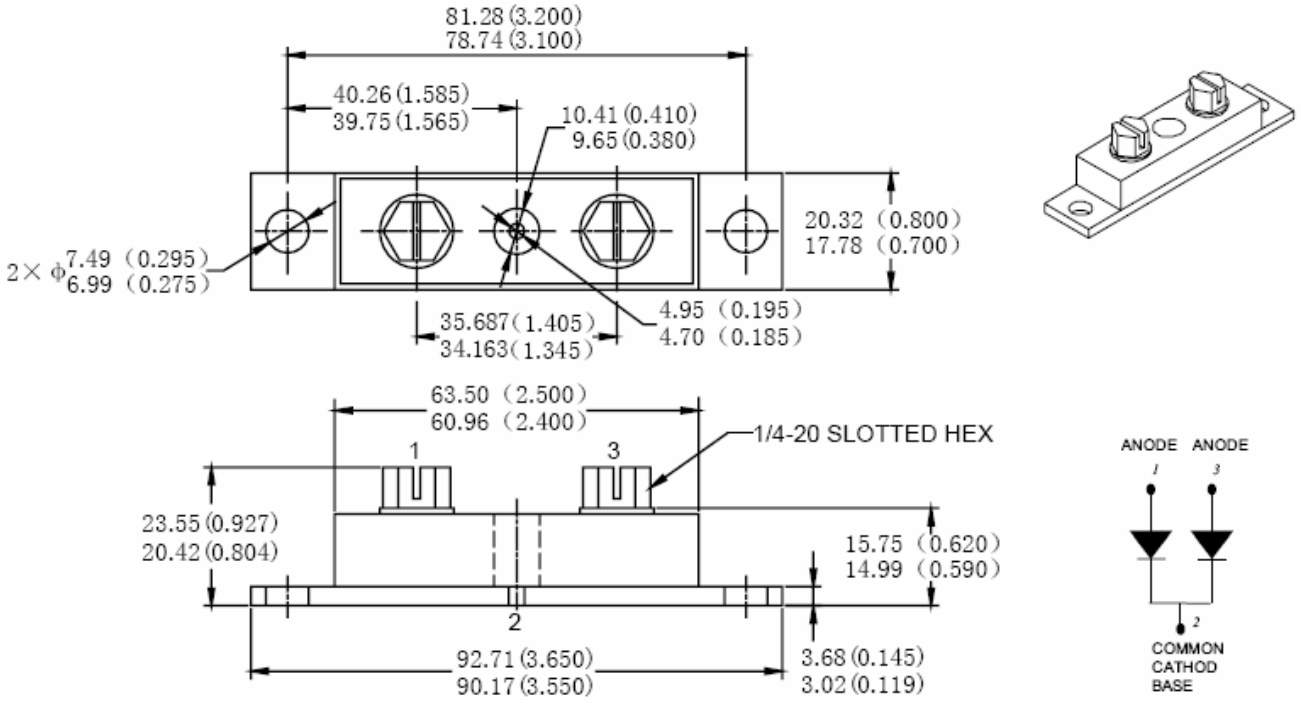
Applications:

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

Features:

- **175 ℃ T_J 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 301CNQ035/040/045, 1st row SS YYWWL, 2nd row 301CNQ035/040/045
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

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	V_{RWM}	-	35	301CNQ035	V
			40	301CNQ040	
			45	301CNQ045	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =81°C, rectangular wave form	150	per leg	A
			300	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	3840		A
Non-Repetitive Avalanche Energy(peg leg)	E_{AS}	T_J=25℃,I_{AS}=40A,L=0.34mH	202		mJ
Repetitive Avalanche Current(peg leg)	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. V_A=1.5× V_R typical	30		A

Electrical Characteristics:

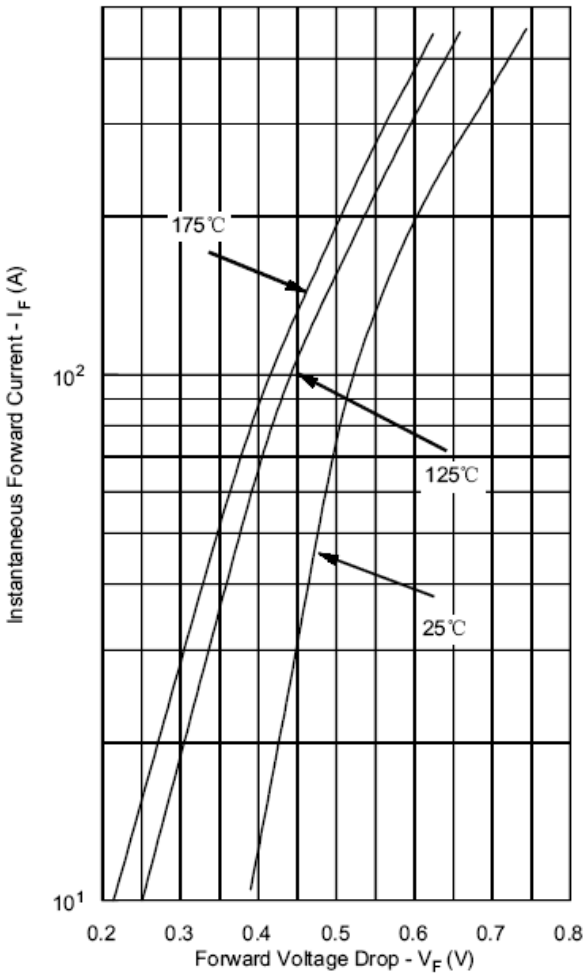
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 150A, Pulse, T_J = 25 °C @ 300A, Pulse, T_J = 25 °C	0.69 0.90	V
	V_{F2}	@ 150A, Pulse, T_J = 125 °C @ 300A, Pulse, T_J = 125 °C	0.59 0.76	V
Max. Reverse Current (per leg) *	I_{R1}	@V_R = rated V_R T_J = 25 °C	10	mA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	135	mA
Max. Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	7800	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	7.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/μs
Insulation Voltage	V_{RMS}	-	1000	V

* Pulse Width < 300μs, Duty Cycle <2%

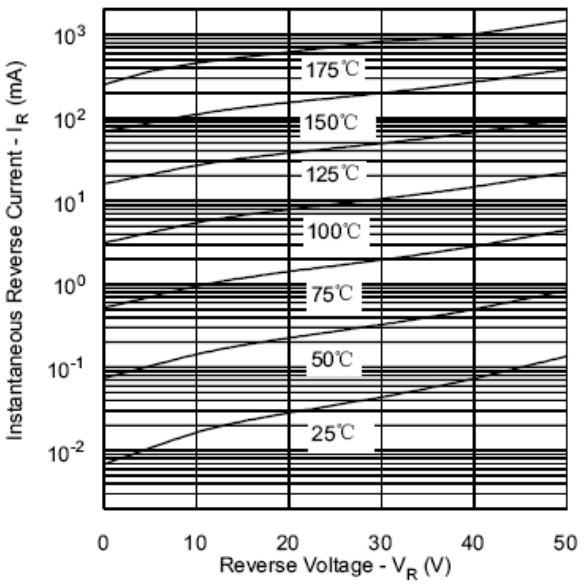
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification		Units
Max. Junction Temperature	T_J	-	-55 to +175		°C
Max. Storage Temperature	T_{stg}	-	-55 to +175		°C
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.40		°C/W
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.20		°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10		°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				

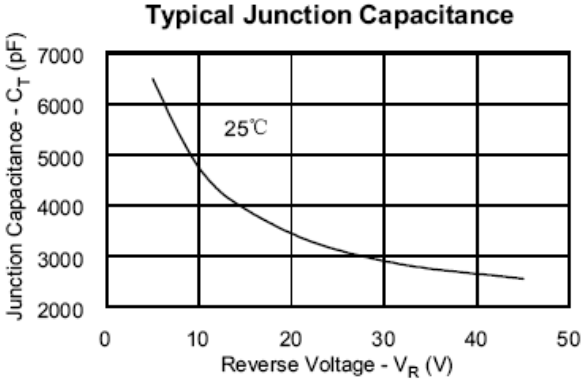
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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