

Technical Data
Data Sheet N1198, Rev. B

Green Products

**224CNQ035/224CNQ040/224CNQ045
SCHOTTKY RECTIFIER**

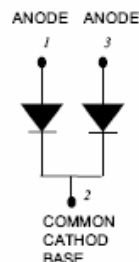
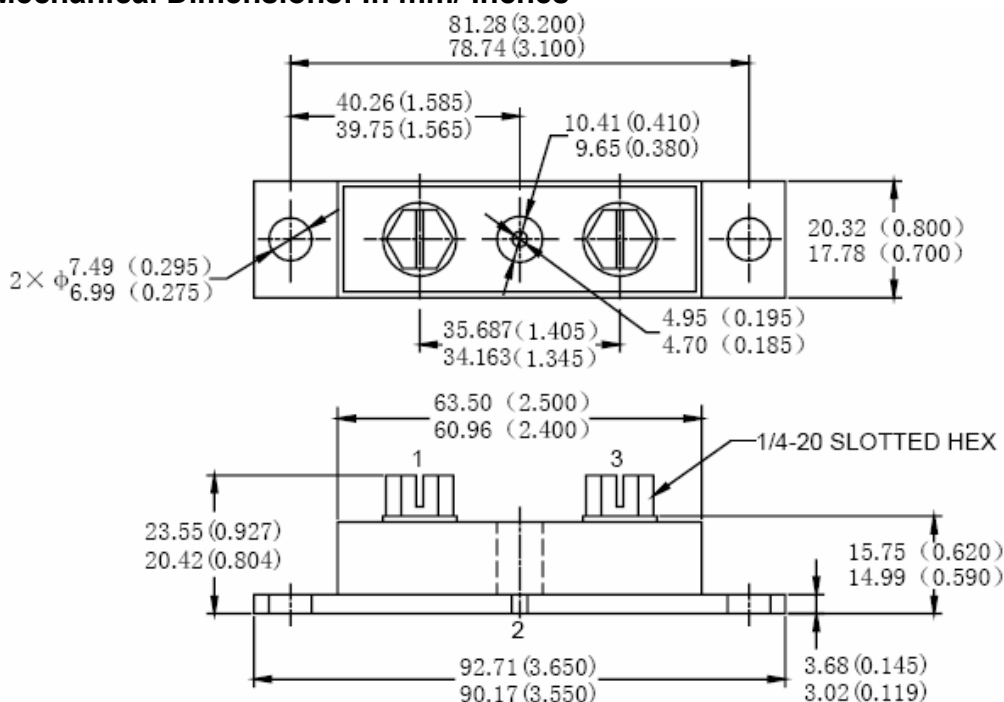
Applications:

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

Features:

- 125 °C T_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 224CNQ035/040/045, 1st row SS YYWWL, 2nd row 224CNQ035/040/045
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	224CNQ035	V
			40	224CNQ040	
			45	224CNQ045	
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C=81^\circ\text{C}$, rectangular wave form	110	per leg	A
			220	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	2880		A
Non-Repetitive Avalanche Energy(per leg)	E_{AS}	$T_J=25^\circ\text{C}, I_{AS}=20\text{A}, L=0.67\text{mH}$	135		mJ
Repetitive Avalanche Current(per leg)	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A=1.5 \times V_R$ typical	20		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 110A, Pulse, $T_J = 25^\circ\text{C}$	0.52	V
		@ 220A, Pulse, $T_J = 25^\circ\text{C}$	0.68	
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	10	mA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	1200	
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	5200	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

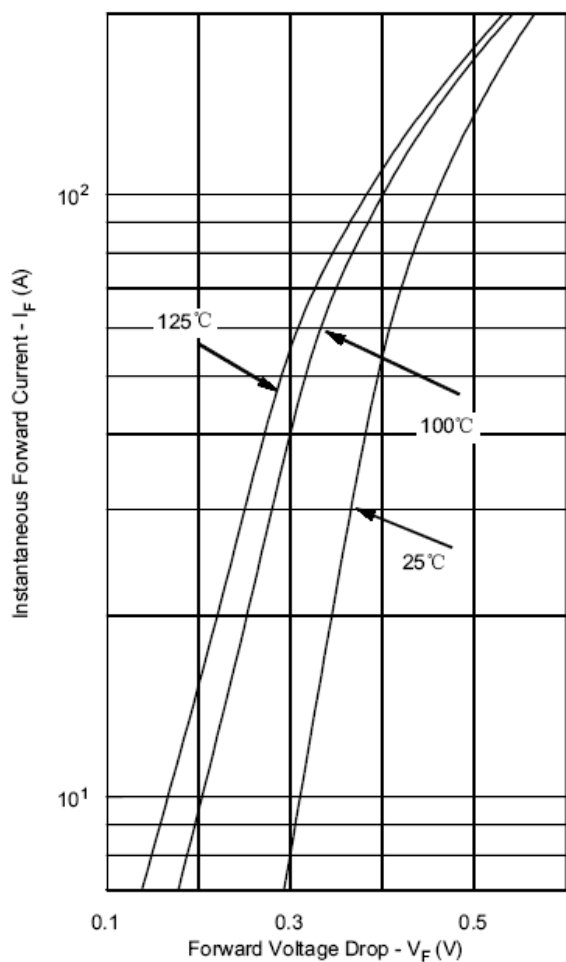
* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

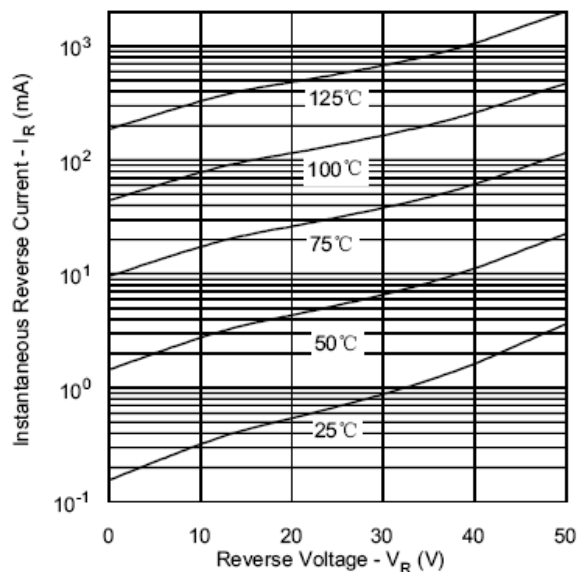
Characteristics	Symbol	Condition	Specification		Units
Max. Junction Temperature	T_J	-	-55 to +125		$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-55 to +125		$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.70		$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.35		$^\circ\text{C/W}$
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				

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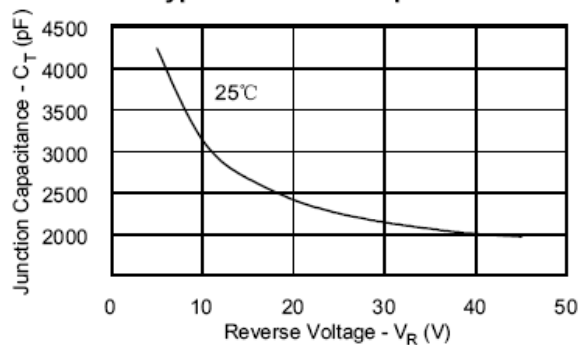
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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