

Technical Data
Data Sheet N1063, Rev. -

Green Products

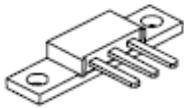
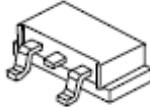
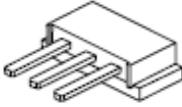
84CNQ035/84CNQ040/84CNQ045 SCHOTTKY RECTIFIER

Applications:

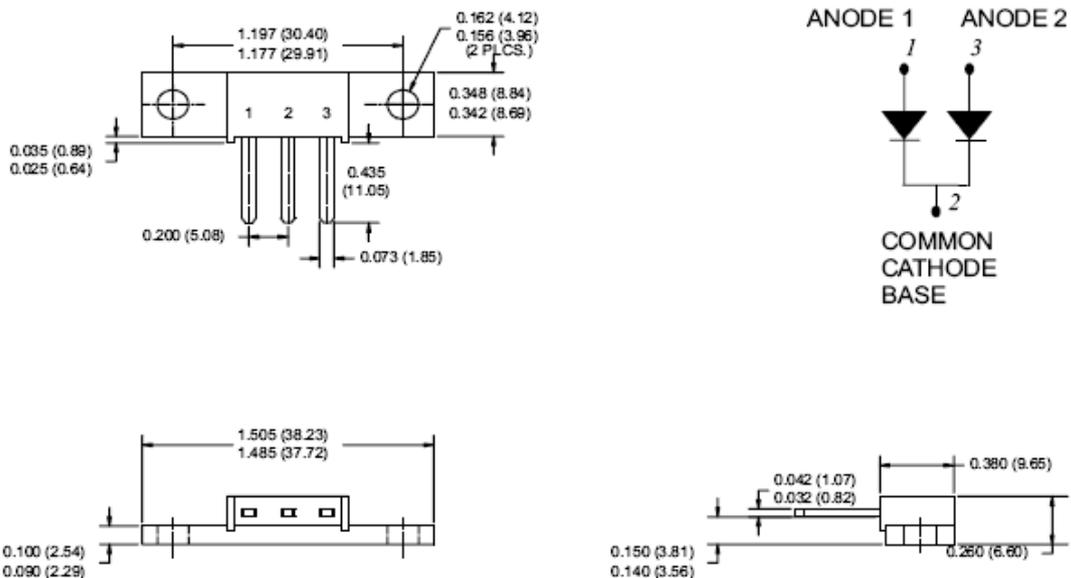
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

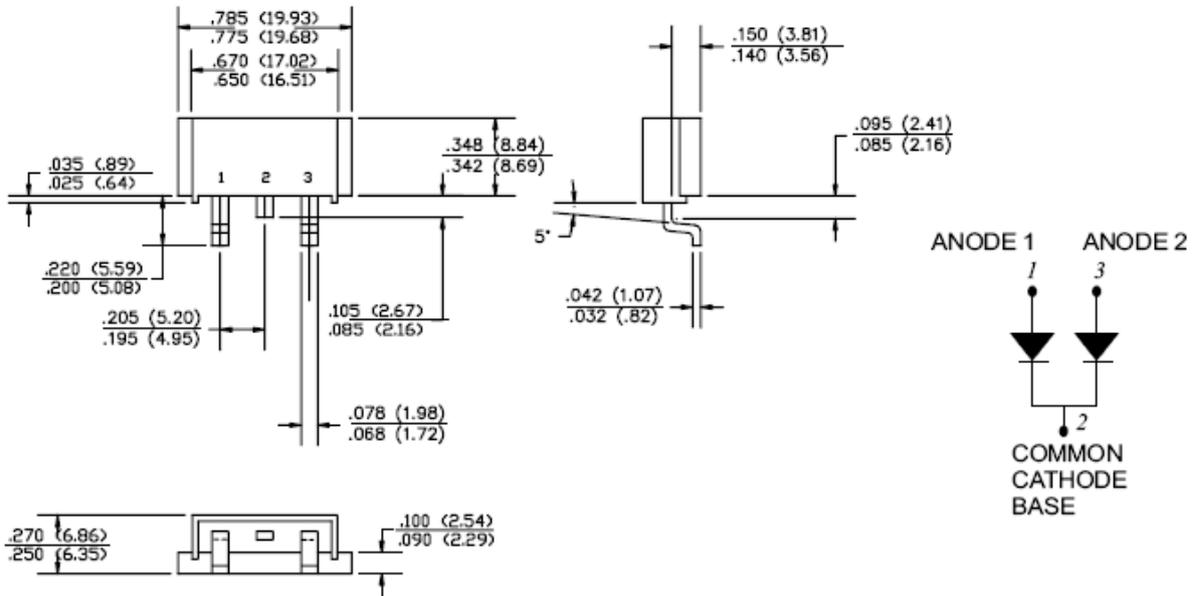
Features:

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

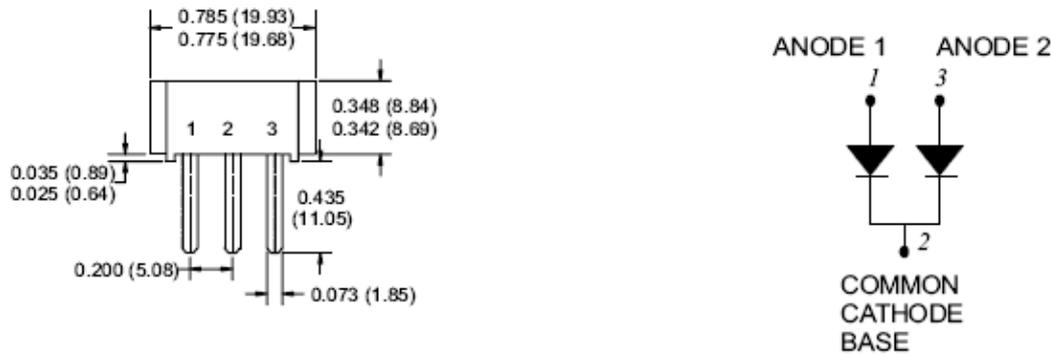
Case Styles		
<p>84CNQ...</p>  <p>PRM2</p>	<p>84CNQ...SL</p>  <p>PRM2-SL</p>	<p>84CNQ...SM</p>  <p>PRM2-SM</p>

Mechanical Dimensions: In Inches / mm





PRM2-SL



PRM2-SM

MARKING, MOLDING RESIN

Marking for 84CNQ035/SL/SM, 1st row SS YYWWL, 2nd row 84CNQ035/SL/SM, 3rd row 1 2 3 (pin)

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

Ordering Information:

Device	Package	Terminals finish	Shipping
84CNQ035	PRM2	Nickel plated	48pcs / box
84CNQ035S	PRM2	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
84CNQ035SL	PRM2-SL	Pure Sn plated	100pcs / box
84CNQ035SM	PRM2-SM	Nickel plated	48pcs / box
84CNQ035SMS	PRM2-SM	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
84CNQ040	PRM2	Nickel plated	48pcs / box
84CNQ040S	PRM2	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
84CNQ040SL	PRM2-SL	Pure Sn plated	100pcs / box
84CNQ040SM	PRM2-SM	Nickel plated	48pcs / box
84CNQ040SMS	PRM2-SM	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
84CNQ045	PRM2	Nickel plated	48pcs / box
84CNQ045S	PRM2	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box
84CNQ045SL	PRM2-SL	Pure Sn plated	100pcs / box
84CNQ045SM	PRM2-SM	Nickel plated	48pcs / box
84CNQ045SMS	PRM2-SM	Pure Sn dipped (dipped height 6-8 mm)	48pcs / box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	35 (84CNQ035)	V
Working Peak Reverse Voltage	V_{RWM}		40 (84CNQ040)	
DC Blocking Voltage	V_R		45 (84CNQ045)	
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 91^\circ\text{C}$, rectangular wave form	80	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	750	A
Non-Repetitive Avalanche Energy(per leg)	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 8\text{A}$, $L = 1.7\text{mH}$	54	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	8	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V_{F1}	@ 40A, Pulse, $T_J = 25^\circ\text{C}$	0.43	0.49	V
		@ 80A, Pulse, $T_J = 25^\circ\text{C}$	0.52	0.62	
	V_{F2}	@ 40A, Pulse, $T_J = 125^\circ\text{C}$	0.38	0.44	V
		@ 80A, Pulse, $T_J = 125^\circ\text{C}$	0.49	0.60	
Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	1.5	5	mA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	600	800	mA
Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	2100	2600	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	5.5	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/ μs

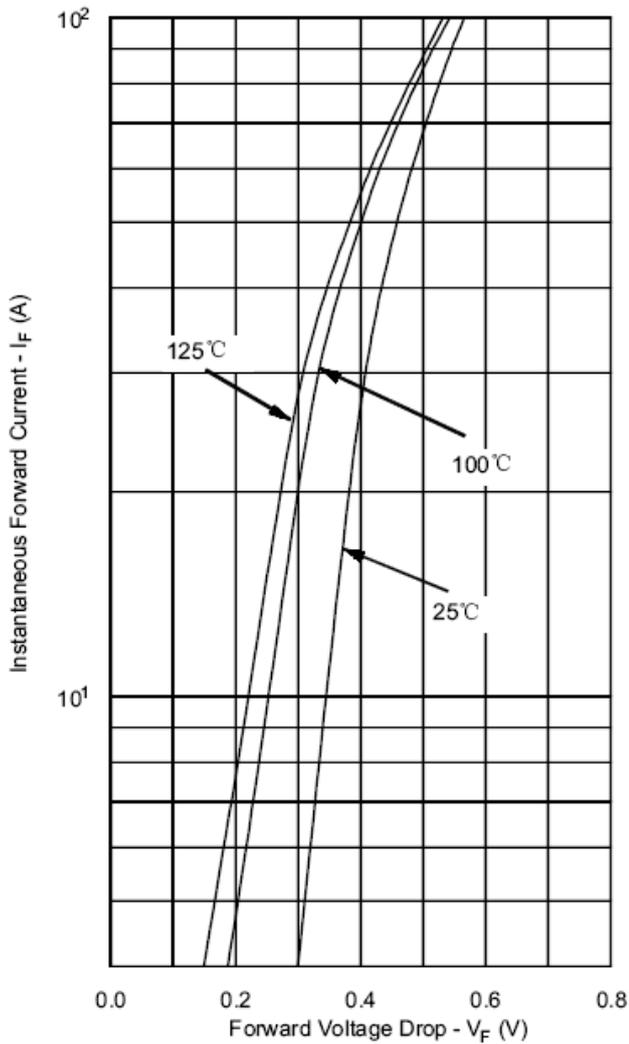
* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

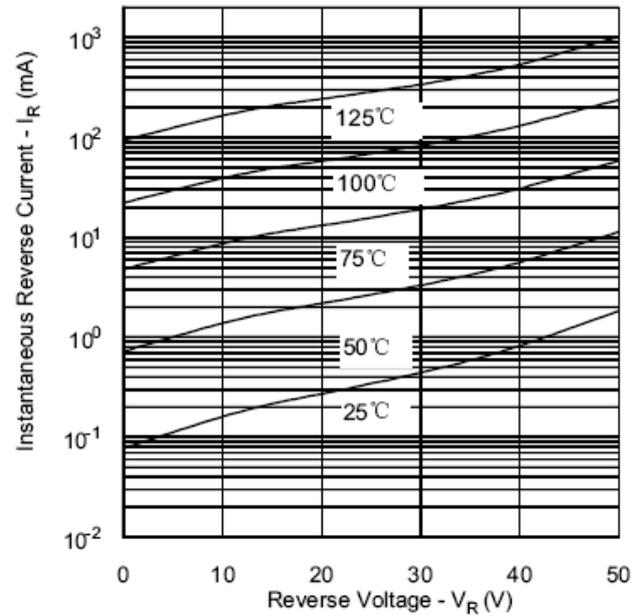
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +125	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case(per leg)	$R_{\theta JC}$	DC operation	0.85	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.42	$^\circ\text{C/W}$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.30	$^\circ\text{C/W}$
Approximate Weight	wt	-	7.8	g
Mounting Torque	T_M	-	40(min)	Kg-cm
			58(max)	
Case Style	PRM2 PRM2-SL PRM2-SM			

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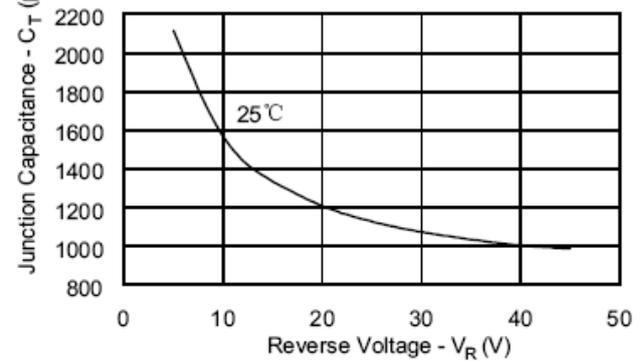
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance





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