

Technical Data  
Data Sheet N0990, Rev. D

## 403CMQ080/100 SCHOTTKY RECTIFIER

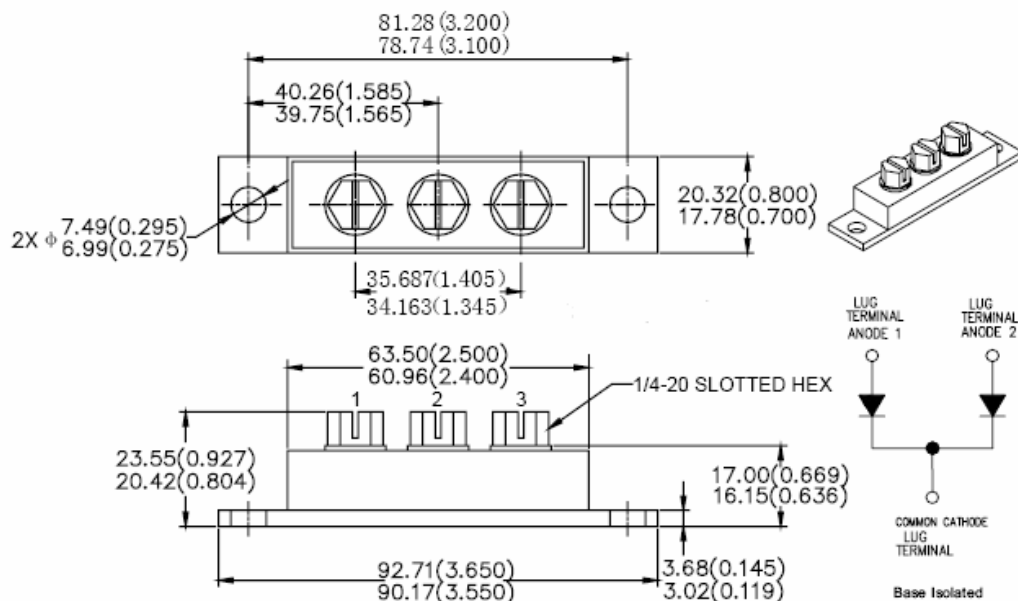
### Applications:

- High current switching power supply • Plating power supply • Free-Wheeling diodes
- Reverse battery protection • Converters • UPS System • 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
- Product contain Pb
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Mechanical Dimensions: In mm/Inches



Please Note: Anode 1 = Terminal 1; Anode 2 = Terminal 3; Common Cathode = Terminal 2  
Suffix R Denotes for Reversed Polarity.

### PRM4 (Isolated)

#### MARKING, MOLDING RESIN

Marking for 403CMQ080/100, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 403CMQ080/100

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	$V_{RWM}$	-	80	403CMQ080	V
			100	403CMQ100	
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=85^\circ\text{C}$ , rectangular wave form	200	per leg	A
			400	per device	
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	3960		A
Non-Repetitive Avalanche Energy(per leg)	$E_{AS}$	$T_J=25^\circ\text{C}$ , $I_{AS}=1\text{A}$ , $L=30\text{mH}$	15		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	1		A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop (per leg) *	$V_{F1}$	@ 200A, Pulse, $T_J = 25^\circ\text{C}$ @ 400A, Pulse, $T_J = 25^\circ\text{C}$	0.83 0.97	V
	$V_{F2}$	@ 200A, Pulse, $T_J = 125^\circ\text{C}$ @ 400A, Pulse, $T_J = 125^\circ\text{C}$	0.69 0.82	
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	6	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	140	mA
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	5500	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/ $\mu\text{s}$

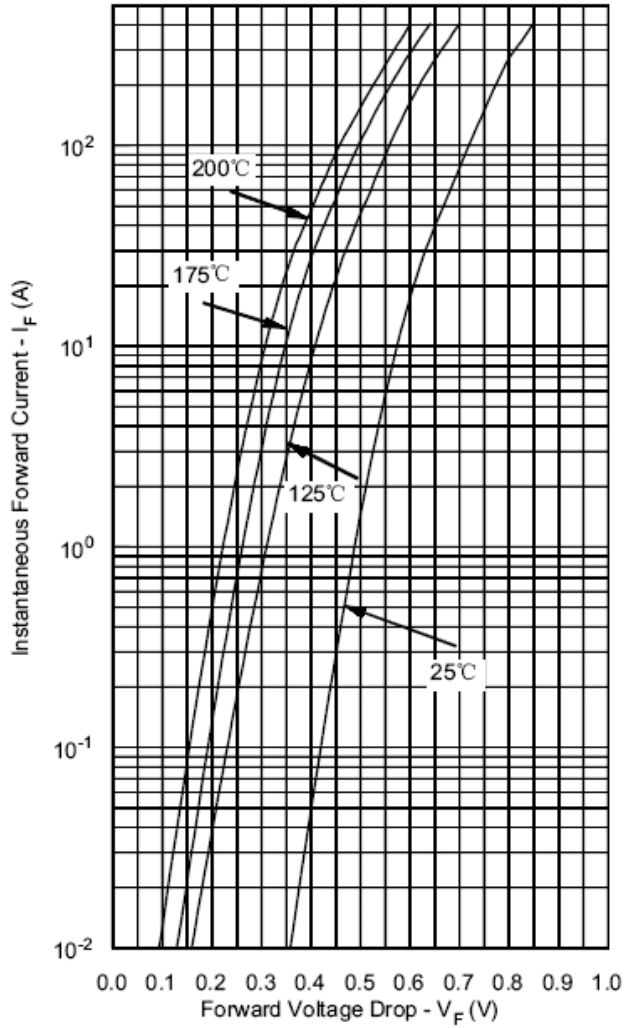
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

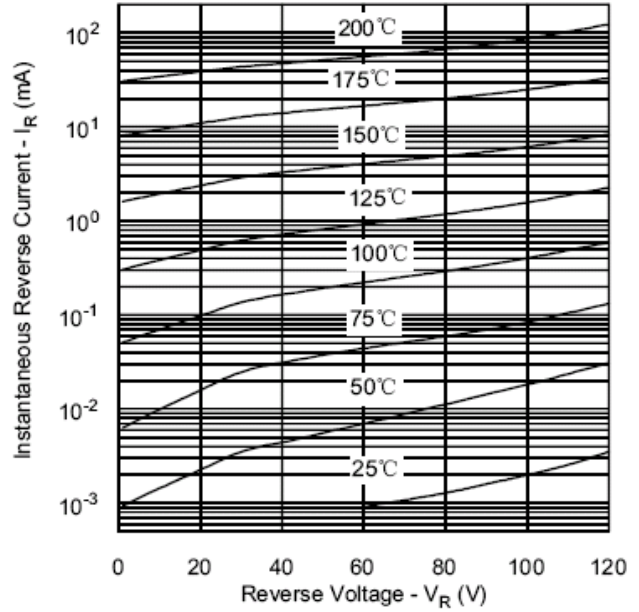
Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	$T_J$	-	-55 to +175		$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +175		$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.40		$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.20		$^\circ\text{C/W}$
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 Isolated				

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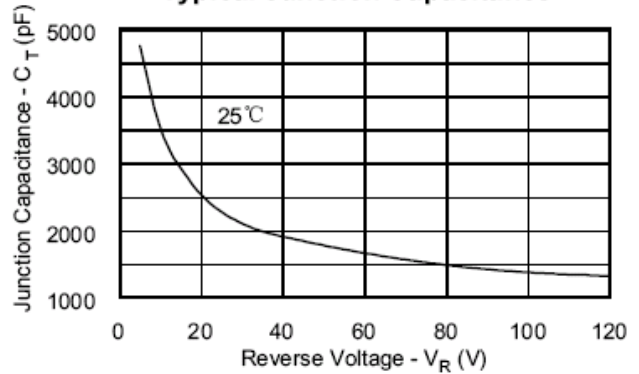
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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