

Technical Data  
Data Sheet N1226, Rev. D

*Green Products*

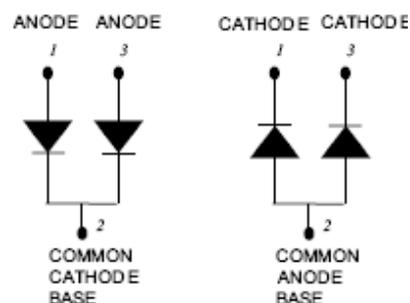
**403CNQ... SERIES SCHOTTKY RECTIFIER**

**Applications:**

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

**Features:**

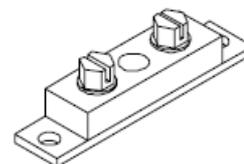
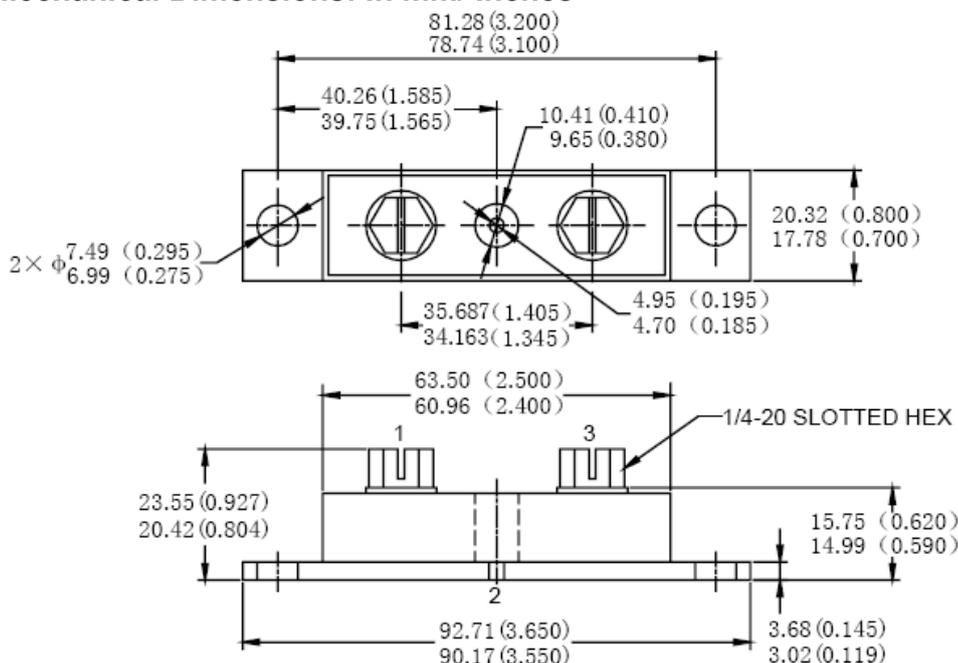
- 175°C T<sub>J</sub> operation
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



**403CNQ080**

**403CNQ080R**

**Mechanical Dimensions: In mm/ Inches**



Please Note: Suffix "R" Denotes For Reversed Polarity

**PRM4 (Non-Isolated)**

**MARKING, MOLDING RESIN**

Marking for 403CNQ080/R, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 403CNQ080/403CNQ080R  
 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

Technical Data  
Data Sheet N1226, Rev. D  
Maximum Ratings:

*Green Products*

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	$V_{RWM}$	-	80	403CNQ080/R	V
			100	403CNQ100/R	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=105^{\circ}C$ , rectangular wave form	200	per leg	A
			400	per device	
Max. 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)	$E_{AS}$	$T_J=25^{\circ}C, I_{AS}=1A, L=30mH$	15		mJ
Repetitive Avalanche Current(per leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu$ sec Frequency limited by $T_J$ max. $V_A=1.5 \times V_R$ typical	1		A

**Electrical Characteristics:**

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

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

**Thermal-Mechanical Specifications:**

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

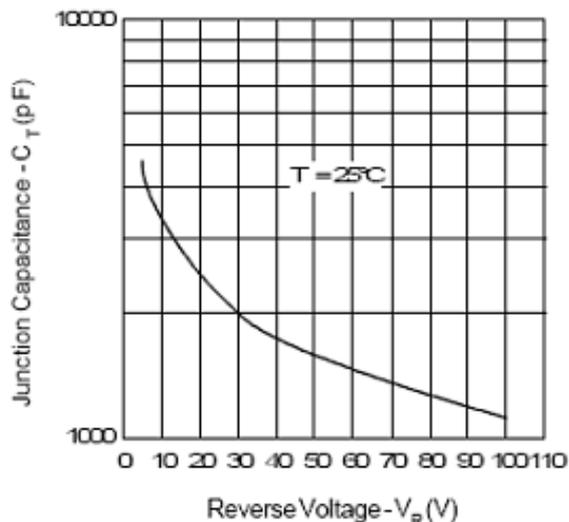


Fig. 1 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

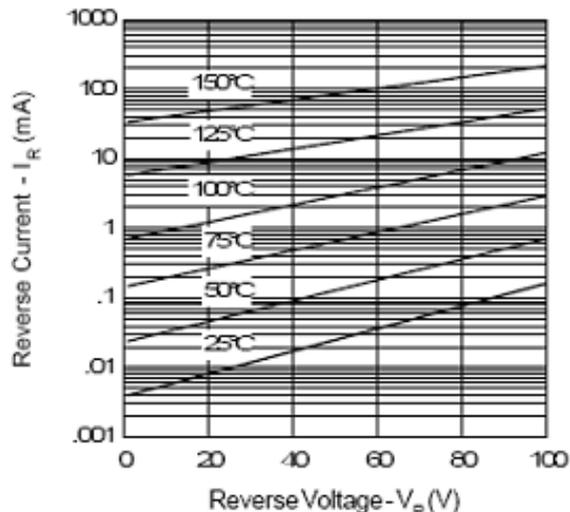


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

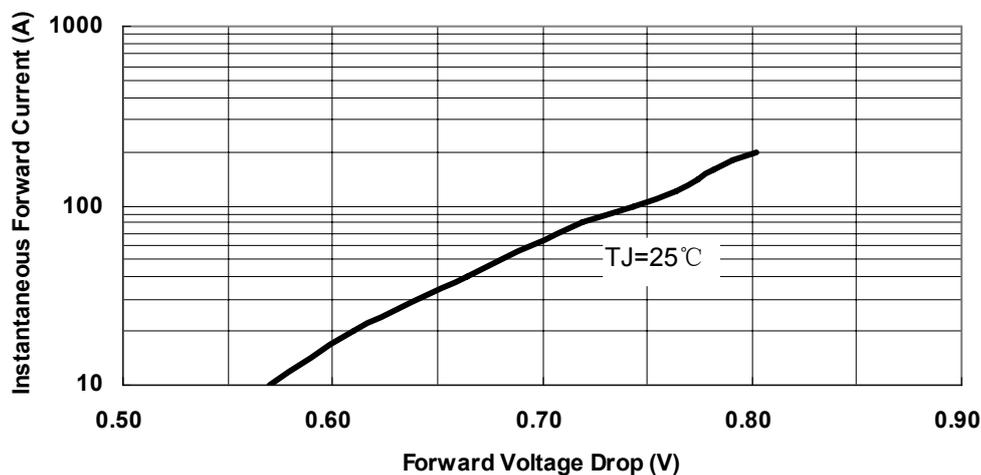


Fig.3-Typical Instantaneous Forward Voltage Characteristics

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC - Sangdest Microelectronics (Nanjing) Co., Ltd sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC - Sangdest Microelectronics (Nanjing) Co., Ltd assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..