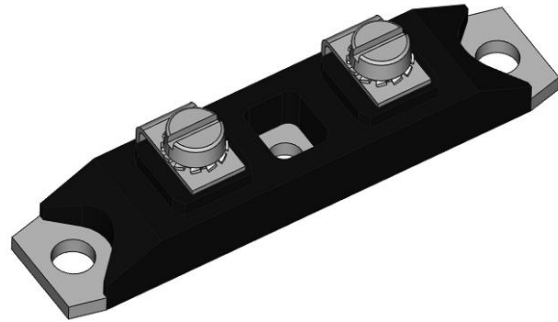


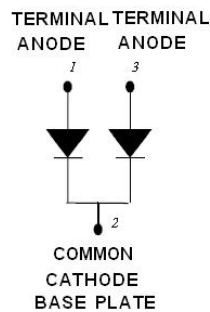
403CNQ600-1/403CNQ600R-1 ULTRAFAST RECTIFIER

Features

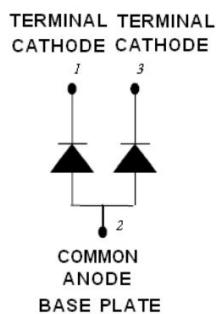
- 175 °C T_J operation
- Dual Diode construction
- Low Leakage Current
- Low forward voltage drop
- High surge current capability
- Super Fast Switching
- Baseplate: Nickel plated; Terminals: Nickel plated
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



Circuit Diagram



403CNQ600-1



403CNQ600R-1

The top side is terminal, the bottom side is base plate.

Applications

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

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	600	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @T _c =125°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	2800	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 200A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	1.25	1.35	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25\text{ }^\circ\text{C}$	0.40	20	μA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 125\text{ }^\circ\text{C}$	-	3	mA
Reverse Recovery Time	t_{rr}	IF=500mA, IR=1A, and Irm=250mA	146	180	ns

* Pulse width < 300 μs , 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	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case(Per leg)	$R_{\theta JC}$	DC operation	0.14	$^\circ\text{C/W}$
Approximate Weight	wt	-	80	g
Mounting torque (M6)	T_M	-	30(3.4) max.	lbf in (N·m)
Mounting torque for center screw (M5)			18(2.1) max.	
Terminal torque (M6)			30(3.4) max.	
Approximate Weight	wt	-	80	g
Case Style	PRM4-1 (Non-Isolated)			

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

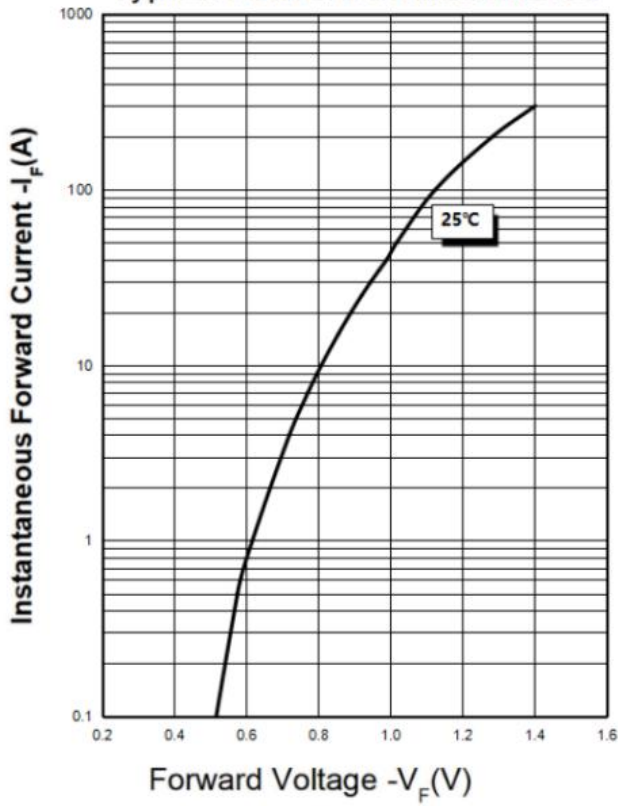


Figure 2
Typical Reverse Characteristics

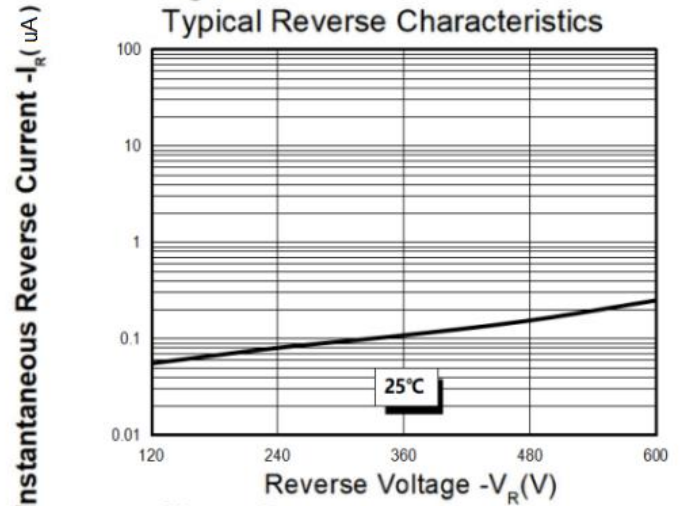
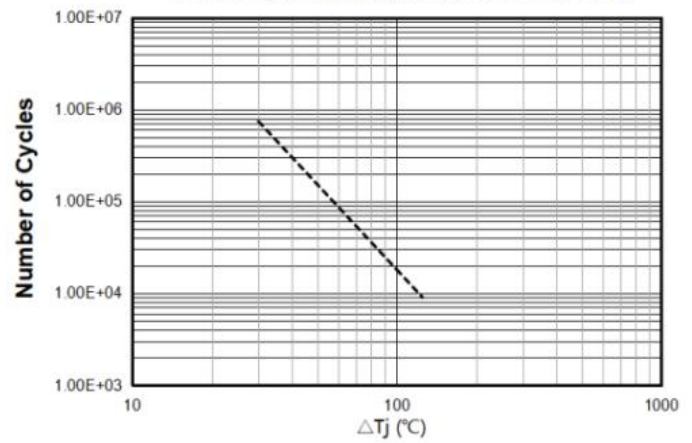
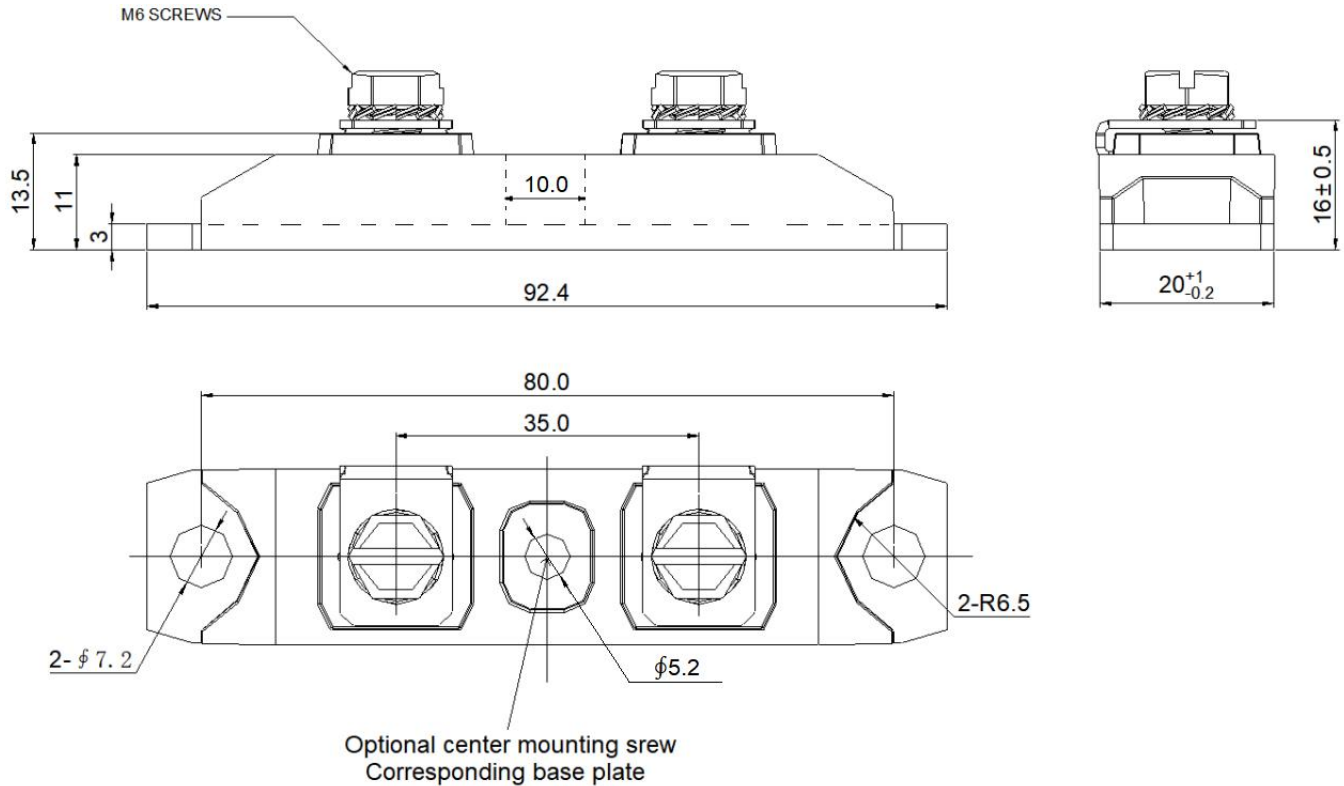


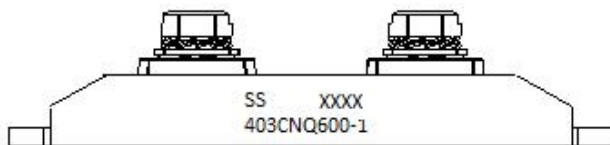
Figure 3
Power Cycle Reliability for Diode Module



Mechanical Dimensions PRM4-1 Non-Isolated(Millimeters/Inches)



Marking Diagram



Where XXXX is YYWW

403CNQ600-1 = Part name
403CNQ600R-1 = Part name
SS = SS
YY = Year
WW = Week

Cautions: Molding resin
Epoxy resin UL:94V-0

Ordering Information

Device	Package	Shipping
403CNQ600-1 403CNQ600R-1	PRM4-1(Non- Isolated) (Pb-Free)	9 pcs/box

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 Diode Solutions 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 Diode Solutions 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 Diode Solution 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 Diode Solutions 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 Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 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..