

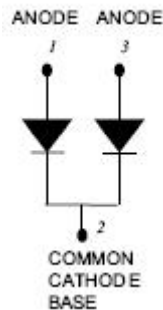
503CNQ600 ULTRAFAST RECTIFIER



Features

- 175 °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
- 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



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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	600	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C = 117°C, rectangular wave form	250(Per leg) 500(Per device)	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	2000	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 250A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	-	2.0	V
Reverse Current *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	-	100	μA
Reverse Recovery Time	t_{rr}	IF=500mA, IR=1A, and Irm=250mA	-	90	ns

* Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications:

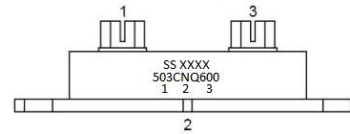
Characteristics	Symbol	Condition	Specification	Units	
Junction Temperature	T_J	-	-55 to +175	$^\circ\text{C}$	
Storage Temperature	T_{stg}	-	-55 to +175	$^\circ\text{C}$	
Typical Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.50	$^\circ\text{C/W}$	
Typical Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.25	$^\circ\text{C/W}$	
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.10	$^\circ\text{C/W}$	
Approximate Weight	wt	-	79	g	
Mounting Torque	T_M	-	Mounting Torque	24 (min) 35 (max)	Kg-cm
			Terminal Torque	35(min) 46 (max)	
Case Style	PRM4 Non-Isolated				

Ordering Information

Device	Package	Shipping
503CNQ600	PRM4 (Pb-Free)	9pcs/ box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram

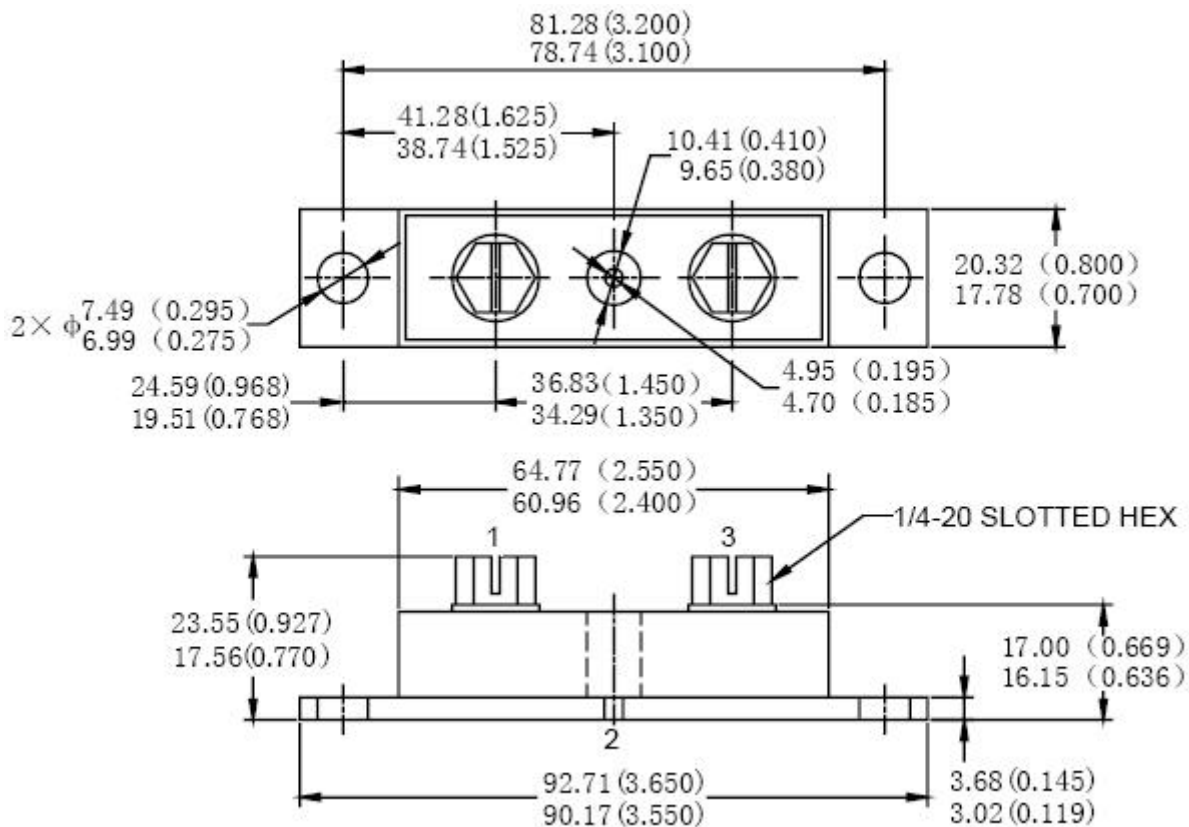


Where XXXX is YYWW

1st row SS YYWW
2nd row 503CNQ600
SS = SS
YY = Year
WW = Week

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

Mechanical Dimensions PRM4 Non-Isolated (Inches/Millimeters)





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