Technical Data *Green Products*
Data Sheet N1674, Rev. -

303DMQ600 ULTRAFAST RECTIFIER

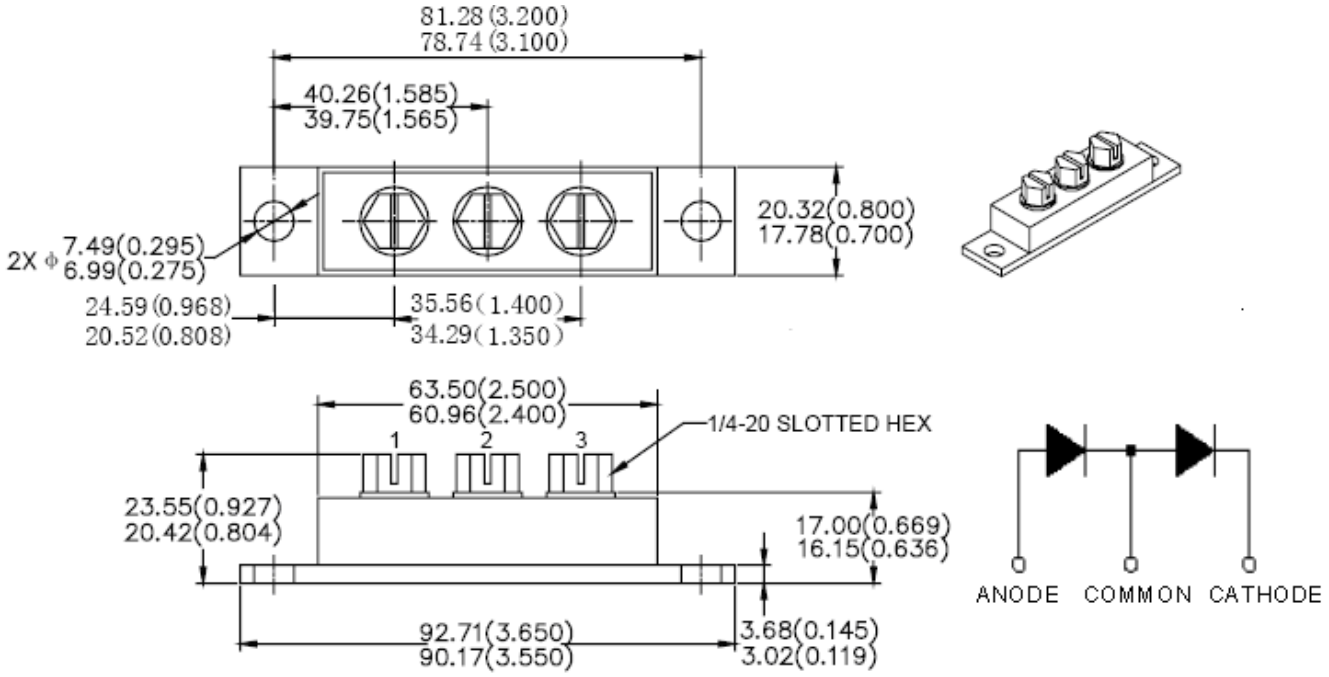
Applications:

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

Features:

- 175 ℃ 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
- This is a Pb − Free Device
- 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 303DMQ600, 1st row SS YYWWL, 2nd row303DMQ600
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}	-	600(303DMQ600)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =117°C, rectangular wave form	150(per leg) 300(per device)	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine pulse	3000	A
Non-Repetitive Avalanche Energy(per leg)	E_{AS}	T_J=25°C,I_{AS}=1A,L=30mH	15	mJ
Repetitive avalanche current (per leg)	I_{AR}	Current decaying linearly to zero in 1μsec frequency limited by T_J max.V_A=1.5X V_R typical	1	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop	V_{F1}	@ 150A, Pulse, T_J = 25 °C @ 300 A, Pulse, T_J = 25 °C	1.40 1.68	V
	V_{F2}	@ 150A, Pulse, T_J = 125 °C @ 300 A, Pulse, T_J = 125 °C	1.20 1.38	V
Reverse Current	I_{R1}	@V_R = rated VR T_J = 25 °C	0.1	mA
	I_{R2}	@V_R = rated VR T_J = 125 °C	20	mA
Junction Capacitance	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	4150	pF
Typical Series Inductance	L_S	Measured lead to lead 5 mm from package body	6.0	nH
Max. Voltage Rate ofChange	dv/dt	-	10,000	V/μs

* Pulse Width < 300μs, Duty Cycle <2%

Thermal-Mechanical Specifications:

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

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• Weiqi Street, Airport Development Zone, Jiangning District, Nanjing, China 211113 (86) 25-87123907 •
• FAX (86) 25-87123900 • World Wide Web Site - http://www.sangdest.com.cn • E-Mail Address - sales@ sangdest.com.cn •