Technical Data ***Green Products***
Data Sheet N1092, Rev. A

163CMQ…SERIES SCHOTTKY RECTIFIER

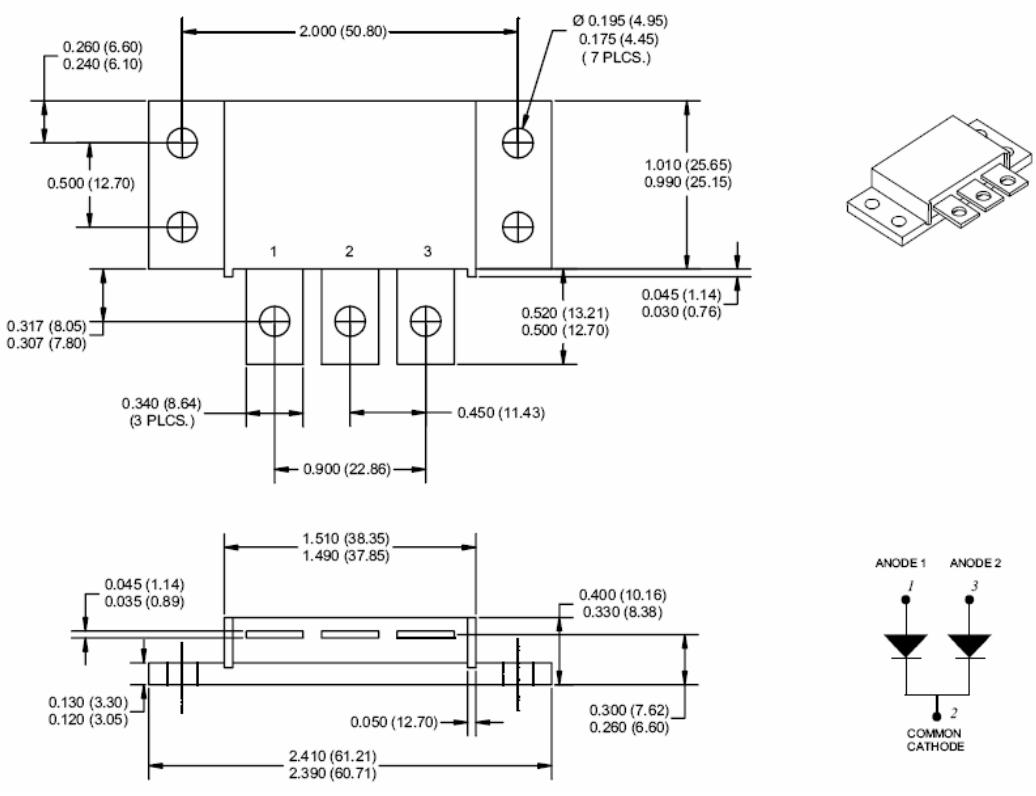
Applications:

• Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

Features:

- **175 °C T_J operation**
- **Isolated heatsink**
- **Low profile, high current package**
- **Center tap module**
- **Low forward voltage drop**
- **High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance**
- **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



TO-249AA

MARKING, MOLDING RESIN
Marking for 163CMQ080/100, 1st row SS YYWWL, 2nd row 163CMQ080/100, 3rd row 1 2 3 (Pin)
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	163CMQ080	V
			100	163CMQ100	
Max. Average Forward*	$I_{F(AV)}$	50% duty cycle @T_C = 87°C, rectangular wave form	160		A
Max. Peak One Cycle Non-Repetitive Surge Current (peg leg)	I_{FSM}	8.3 ms, half Sine pulse	960		A
Non-Repetitive Avalanche Energy(peg leg)	E_{AS}	T_J=25℃,I_{AS}=1A,L=30mH	15		mJ
Repetitive Avalanche Current(peg leg)	I_{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A=1.5×V_R typical	1		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 80A, Pulse, T_J = 25 °C @ 160A, Pulse, T_J = 25 °C	0.98 1.17	V
	V_{F2}	@ 80A, Pulse, T_J = 125 °C @ 160A, Pulse, T_J = 125 °C	0.80 0.96	V
Max. Reverse Current (per leg) *	I_{R1}	@V_R = rated V_R ,T_J = 25 °C	1.5	mA
	I_{R2}	@V_R = rated V_R ,T_J = 125 °C	20	mA
Max. Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	1400	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/µs

* Pulse Width < 300µs, Duty Cycle <2%

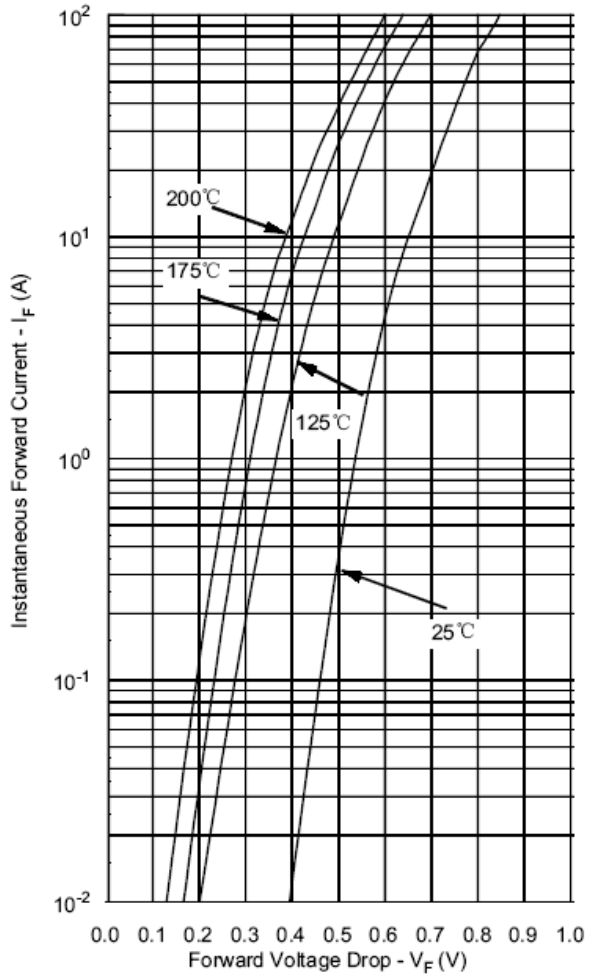
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +175	°C
Max. Storage Temperature	T_{stg}	-	-55 to +175	°C
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	1.0	°C/W
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.50	°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10	°C/W
Mounting Torque	T_M	-	40(min) 58(max)	Kg-cm
Approximate Weight	wt	-	58	g
Case Style	TO-249AA			

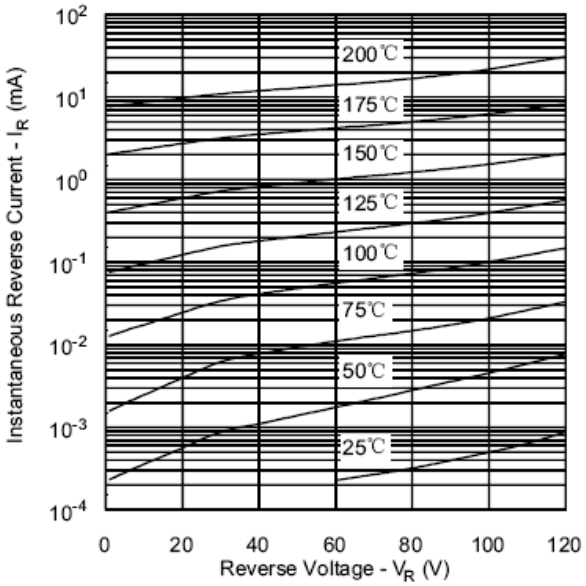
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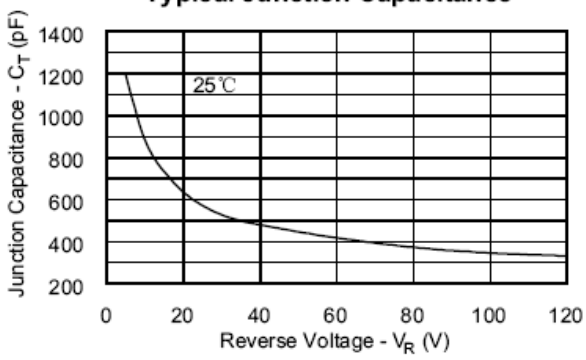
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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