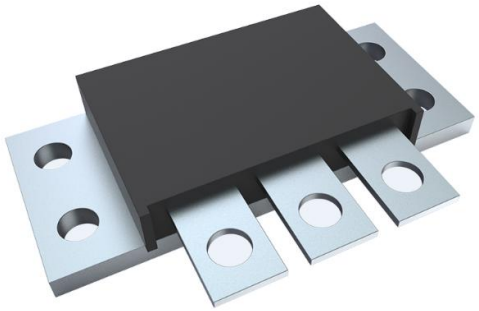
Technical Data
Data Sheet N1092, Rev. C

163CMQ…SERIES SCHOTTKY RECTIFIER

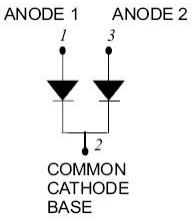


TO-249AA

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
- Base plate: 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

Schematic & Pin Configuration



Applications

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

Maximum Ratings(limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.		Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	80	163CMQ080	V
			100	163CMQ100	
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =87°C, rectangular wave form	80(Per Leg) 160(Per Device)		A
Peak One Cycle Non-Repetitive Surge Current	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

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Electrical Characteristics:

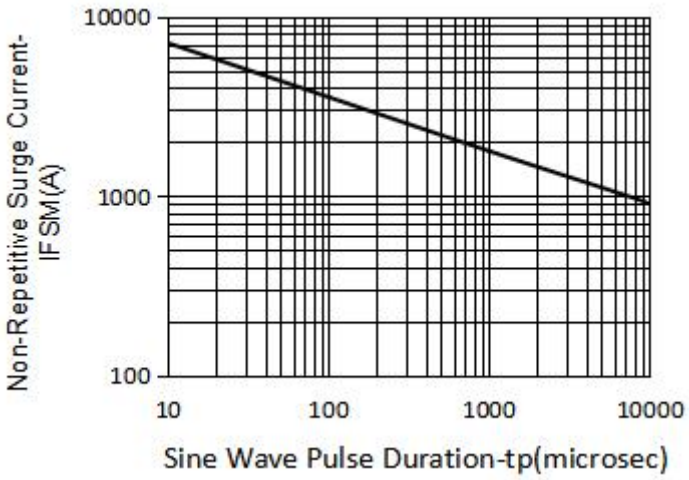
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Peg Leg)*	V_{F1}	@ 80A, Pulse, T_J = 25 °C @ 160A, Pulse, T_J = 25 °C	0.85 0.96	0.98 1.17	V
	V_{F2}	@ 80A, Pulse, T_J = 125 °C @ 160A, Pulse, T_J = 125 °C	0.75 0.82	0.80 0.96	V
Reverse Current(Peg Leg)*	I_{R1}	@V_R = rated V_R, T_J = 25 °C	0.3	1500	uA
	I_{R2}	@V_R = rated V_R ,T_J = 125 °C	0.1	20	mA
Junction Capacitance(Peg Leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	1340	1400	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/µs

* Pulse width < 300 µs, 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
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	1.0	°C/W
Typical 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	-	61	g

Ratings and Characteristics Curves



Max. Non-Repetitive Surge Current(Per leg)

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Figure1
Typical Forward Characteristics

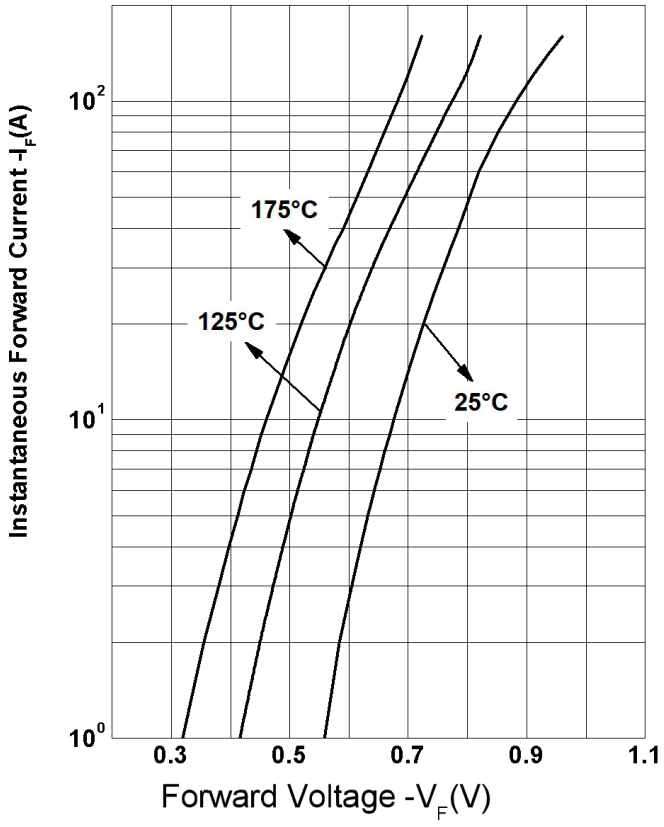


Figure 2
Typical Reverse Characteristics

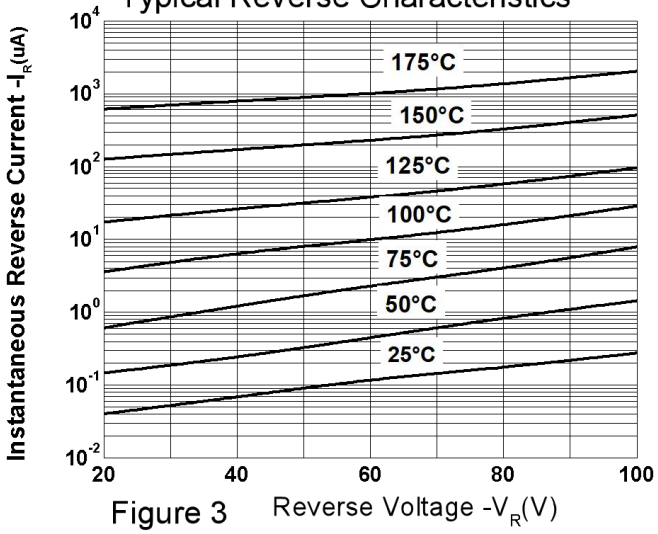
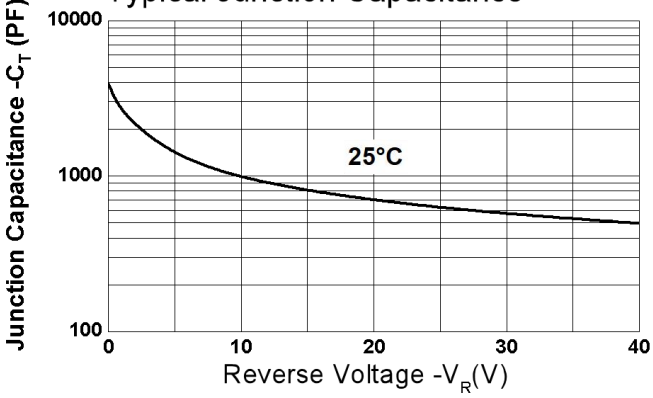


Figure 3
Typical Junction Capacitance



Ordering Information

Device	Package	Shipping
163CMQ SERIES	TO-249AA(Pb-Free)	24pcs/ box

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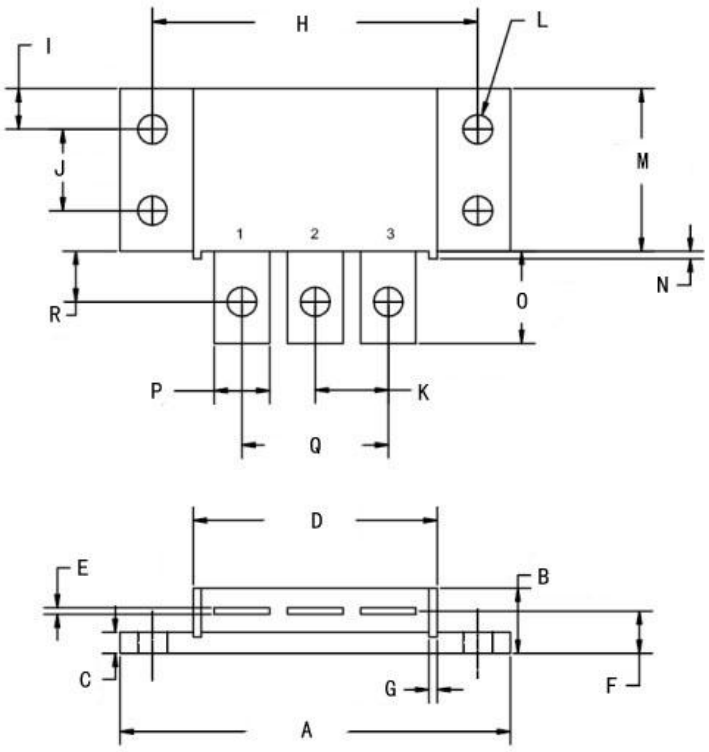
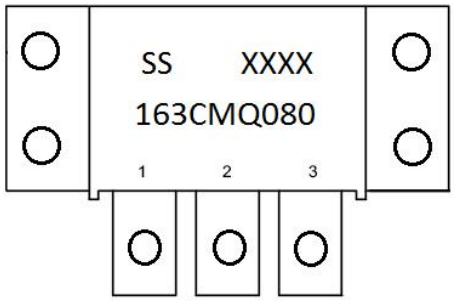
Mechanical Dimensions TO-249AA (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	60.38	61.58	2.377	2.424
B	8.38	10.16	0.330	0.400
C	2.77	3.57	0.109	0.141
D	37.00	38.20	1.457	1.504
E	0.62	1.32	0.024	0.052
F	6.35		0.250	
G	1.27		0.050	
H	50.80		2.000	
I	6.35		0.250	
J	12.70		0.500	
K	11.43		0.450	
L	4.35	5.05	0.171	0.199
M	24.90	25.90	0.980	1.020
N	0.64	1.26	0.025	0.050
O	11.80	13.51	0.465	0.532
P	8.64		0.340	
Q	22.86		0.900	
R	7.93		0.312	

Marking Diagram



Where XXXX is YYWW

1st row SS YYWW
2nd row 163CMQ080
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

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

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