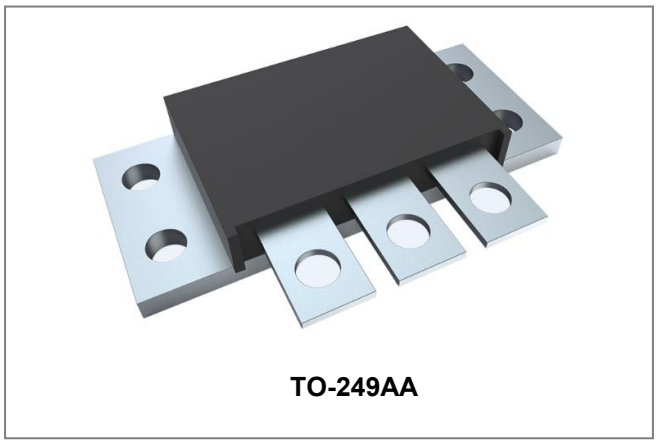
Technical Data
Data Sheet N1183, Rev. B

161CMQ…SERIES SCHOTTKY RECTIFIER

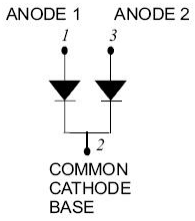


TO-249AA

Features

- 150 °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:

Characteristics	Symbol	Condition	Max.		Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	35	161CMQ035	V
			40	161CMQ040	
			45	161CMQ045	
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =101°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	1080		A
Non-Repetitive Avalanche Energy (Peg Leg)	E_{AS}	T_J=25℃,I_{AS}=16A,L=0.84mH	108		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	16		A

Technical Data
Data Sheet N1183, Rev. B

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	0.70 0.89	0.75 0.93	V
	V_{F2}	@ 80A, Pulse, T_J = 125 °C @ 160A, Pulse, T_J = 125 °C	0.64 0.77	0.68 0.79	V
Reverse Current(Peg Leg)*	I_{R1}	@V_R = rated V_R, T_J = 25 °C	0.02	5	mA
	I_{R2}	@V_R = rated V_R ,T_J = 125 °C	5	45	mA
Junction Capacitance(Peg Leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	2160	2600	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

Technical Data
Data Sheet N1183, Rev. B

Ratings and Characteristics Curves

Figure1
Typical Forward Characteristics

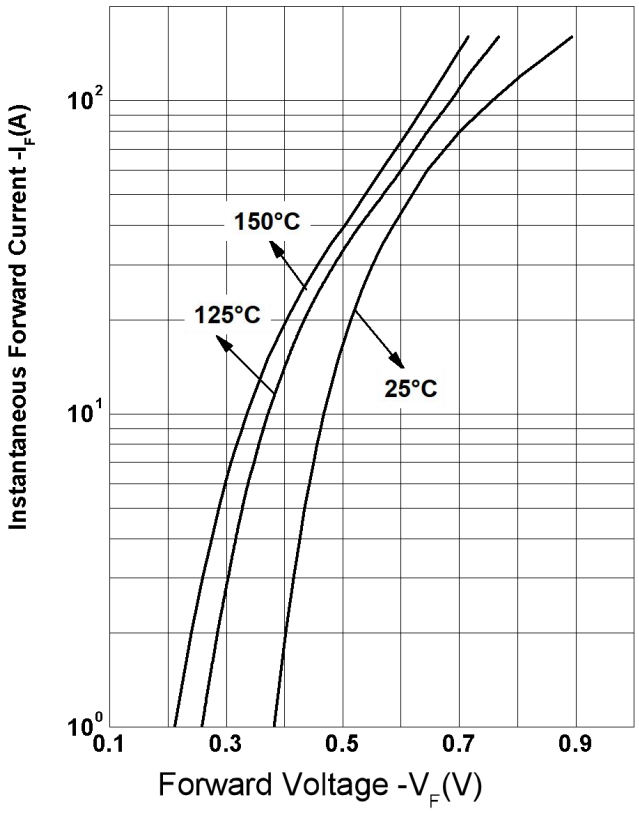


Figure 2
Typical Reverse Characteristics

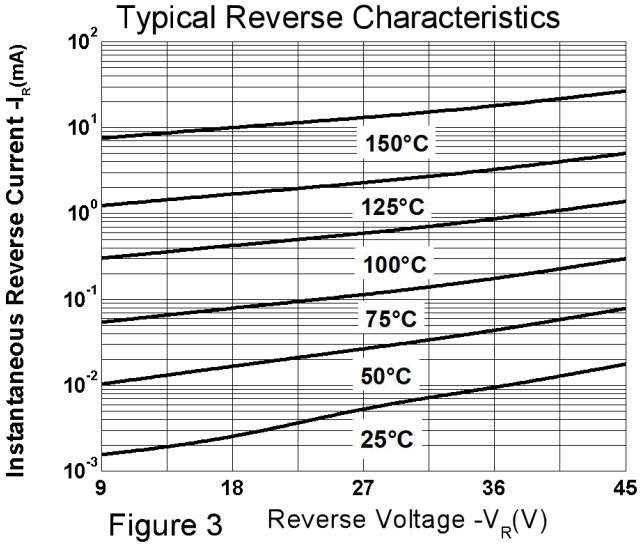
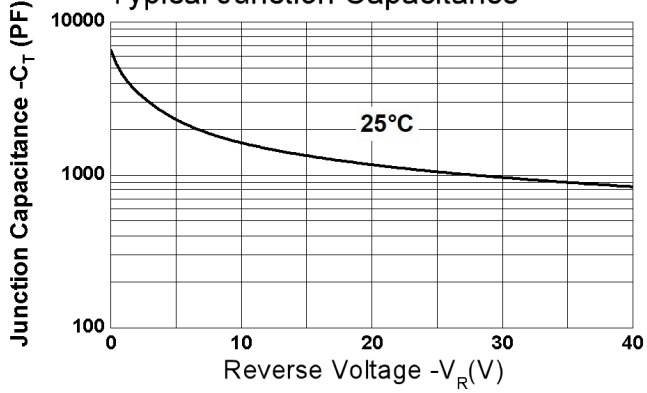


Figure 3
Typical Junction Capacitance



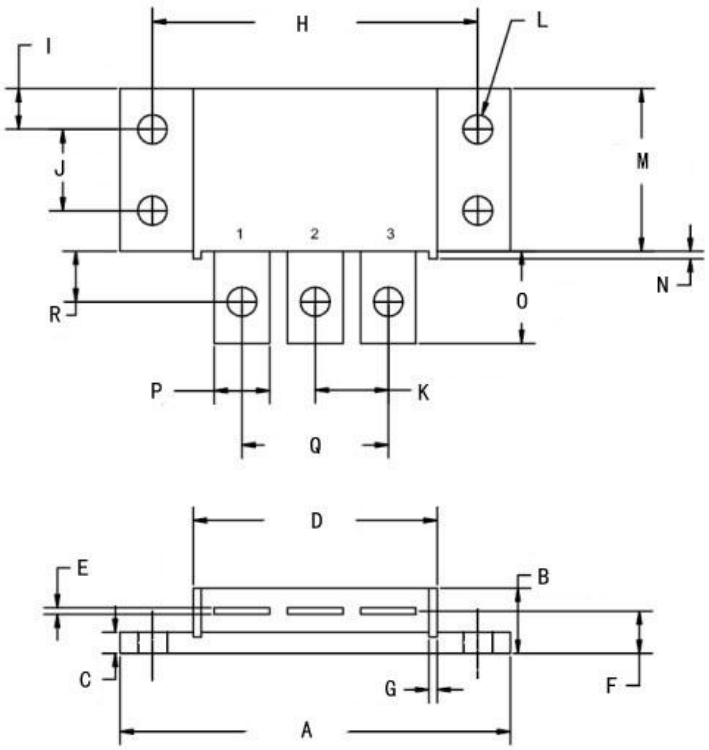
Ordering Information

Device	Package	Shipping
161CMQ SERIES	TO-249AA(Pb-Free)	24pcs/ box

Technical Data
Data Sheet N1183, Rev. B

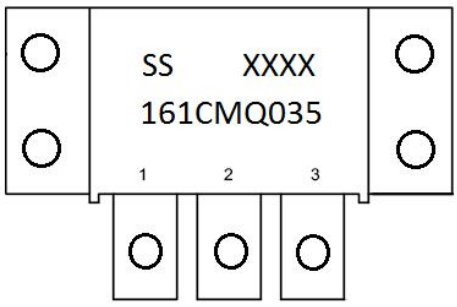
RoHS

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 161CMQ035
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

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

Technical Data
Data Sheet N1183, Rev. B

RoHS

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..