

Technical Data  
Data Sheet 2969, Rev. -

## 163CMQ...SERIES SCHOTTKY RECTIFIER

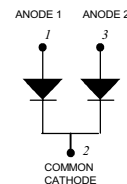
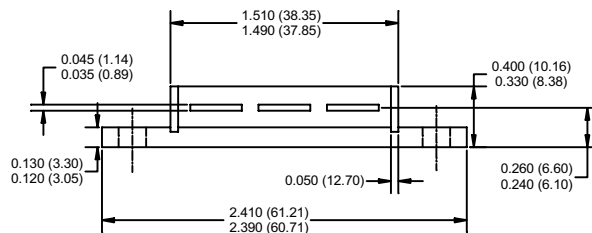
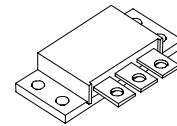
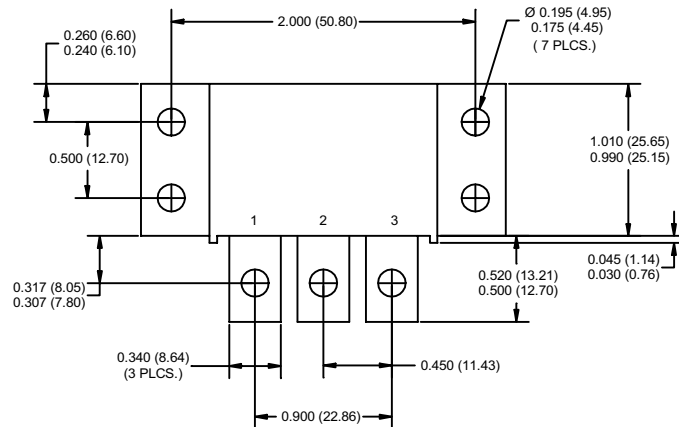
### Applications:

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

### Features:

- 175 °C T<sub>J</sub> operation
- Isolated heatsink
- Low profile, high current package
- 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

### Mechanical Dimensions: In Inches / mm



### TO-249AA

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**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	80	163CMQ080
			100	163CMQ100
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 87^\circ\text{C}$ , rectangular wave form	160	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	960	A
Non-Repetitive Avalanche Energy (per leg)	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 1\text{ A}$ , $L = 30\text{mH}$	15	mJ
Repetitive Avalanche Current (per leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency Limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	1	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 80 A, Pulse, $T_J = 25^\circ\text{C}$	0.98	V
		@ 160 A, Pulse, $T_J = 25^\circ\text{C}$	1.17	
	$V_{F2}$	@ 80 A, Pulse, $T_J = 125^\circ\text{C}$	0.80	V
		@ 160 A, Pulse, $T_J = 125^\circ\text{C}$	0.96	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	1.5	mA
		$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	20
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$ ,	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/ $\mu\text{s}$

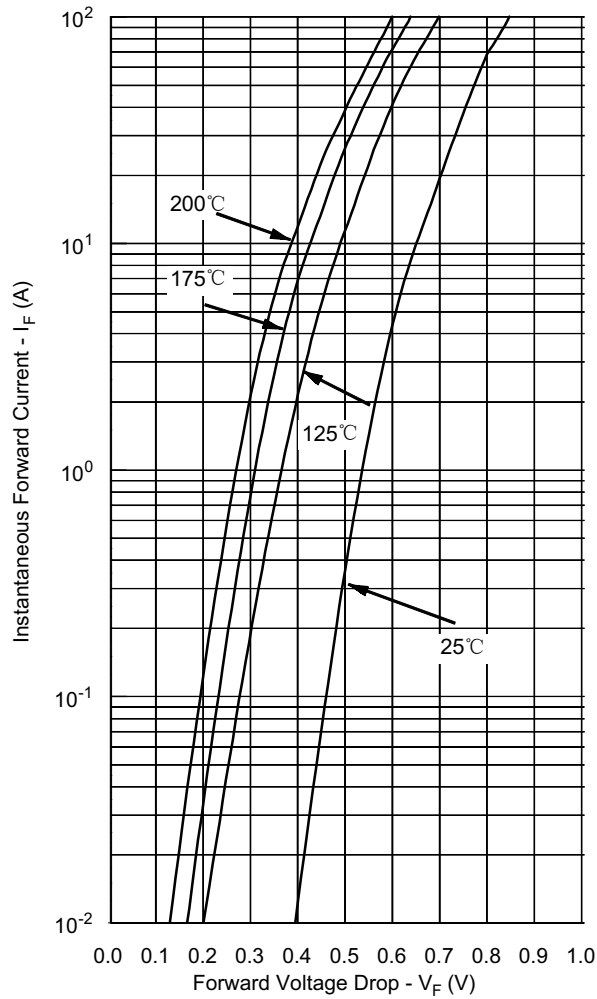
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

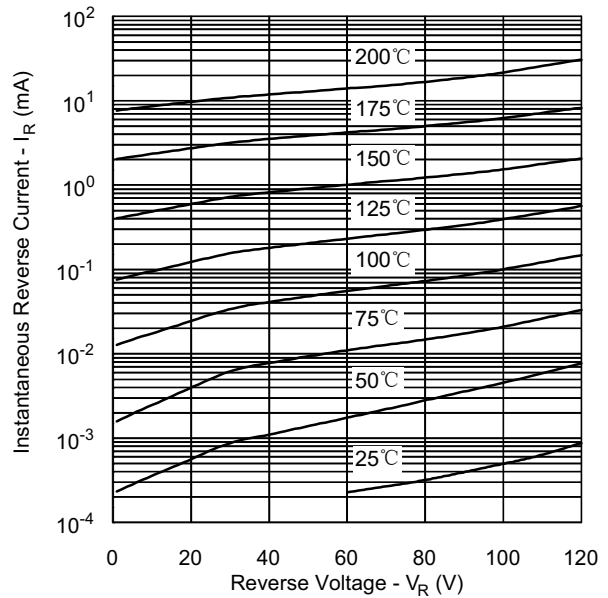
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	1.0	$^\circ\text{C/W}$
Maximum Thermal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

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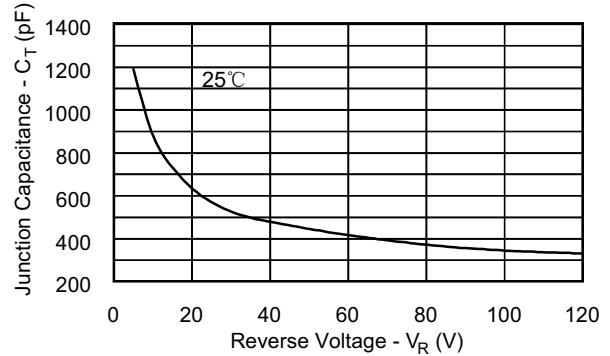
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**TECHNICAL DATA**

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