## 224CMQ SERIES



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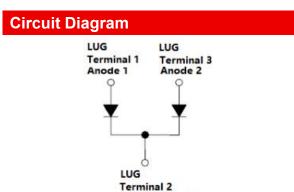


# 224CMQ035/224CMQ040/224CMQ045 SCHOTTKY RECTIFIER



#### Features

- 125℃ T<sub>J</sub> 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
- Baseplate: 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



Common Cathode Base Isolated

### Applications

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

#### **Maximum Ratings:**

Characteristics	Symbol	Condition	Max.		Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	35	224CMQ035	
Working Peak Reverse Voltage	VRWM		40 224CMQ040		V
DC Blocking Voltage	VR		45	224CMQ045	
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =81°C,	110(Per Leg)		A
		rectangular wave form	220(Per Device)		
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I <sub>FSM</sub>	8.3 ms, half Sine pulse	2880		А
Non-Repetitive Avalanche			+		
Energy(Peg Leg)	E <sub>AS</sub>	TJ=25℃,IAS=20A,L=0.67mH	135		mJ
Repetitive Avalanche Current		Current decaying linearly to zero			
(Peg Leg)	I <sub>AR</sub>	in 1 µsec Frequency limited by		20	Α
		$T_J$ max. $V_A$ =1.5 $\times$ $V_R$ typical			

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### **Electrical Characteristics:**

Characteristics	Symbol	Condition	Тур.	Max.	Units
Forward Voltage Drop(Per Leg)*	V <sub>F1</sub>	@ 110A, Pulse, TJ = 25 °C @ 220A, Pulse, TJ = 25 °C	0.48 -	0.52 0.68	V
	V <sub>F2</sub>	@ 110A, Pulse, TJ = 125 °C @ 220A, Pulse, TJ = 125 °C	0.42 -	0.50 0.68	V
Reverse Current(Per Leg)*	I <sub>R1</sub>	$@V_R = rated V_{R, T_J} = 25 \circ C$	2	10	mA
	I <sub>R2</sub>	$@V_R = rated V_{R, T_J} = 125 \circ C$	1500	2000	mA
Junction Capacitance(Per leg)	Ст	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	4300	5200	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

\* Pulse width < 300 μs, duty cycle < 2%

### **Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specifi	Units	
Junction Temperature	TJ	-	-55 to +125		°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +125		°C
Typical Thermal Resistance Junction to Case(Per leg)	$R_{ ext{ heta}JC}$	DC operation	0.70		°C/W
Typical Thermal Resistance Junction to Case(Per package)	$R_{ ext{ heta}JC}$	DC operation	0.35		°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{ hetacs}$	Mounting surface, smooth and greased	0.10		°C/W
Mounting Torque	ТМ	-	Mounting Torque Terminal Torque	24(min) 35(max) 35(min) 46(max)	Kg-cm
Approximate Weight	wt	-	79		g
Case Style	PRM4 Isolated				

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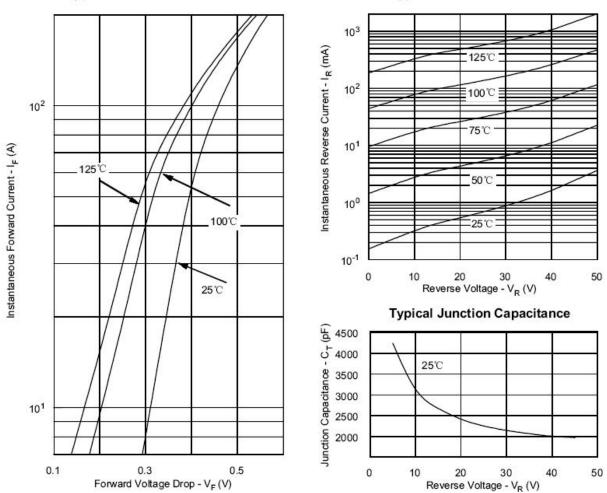
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### **Ratings and Characteristics Curves**

**Typical Forward Characteristics** 



#### **Typical Reverse Characteristics**

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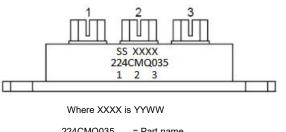
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81.28 (3.200) 78.74 (3.100) 41.28(1.625) 38.74(1.525) 20.32(0.800) 17.78(0.700) 2X 0 7.49(0.295) 6.99(0.275) 36.83(1.450) 24.59 (0.968) 34.29(1.350) 19.51(0.768) 64.77(2.550) 60.96(2.400) 1/4-20 SLOTTED HEX 1 3 2 U U 23.55(0.927) 17.56(0.770) 17.00(0.669) 16.15(0.636) 3.68(0.145) 3.02(0.119) 92.71(3.650) 90.17(3.550)

Mechanical Dimensions PRM4 Isolated(Millimeters/Inches)

#### **Marking Diagram**



224CMQ035	= Part name
SS	= SS
YY	= Year
WW	= Week

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

### **Ordering Information**

Device	Package	Shipping
224CMQ SERIES	PRM4 Isolated (Pb-Free)	9 pcs/box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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