

220CMQ030 SCHOTTKY RECTIFIER

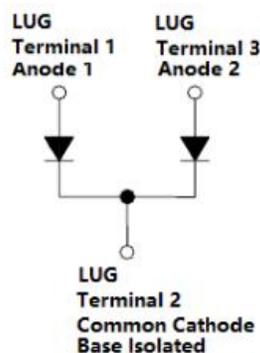


PRM4 (Isolated)

Features

- 150°C T_J 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
- Base plate: Nickel plated; Terminals: Nickel plated
- The terminal hardware is supplied with the module.
- The mounting hardware is not supplied. Recommended is the use of ¼-20 or M6 screws with spring washer.
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Applications

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

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	-	30	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C = 100°C, rectangular wave form	110(Per Leg) 220(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I _{FSM}	8.3 ms, half Sine pulse, T _J = 25 °C	2880	A
Non-Repetitive Avalanche Energy(Peg Leg)	E _{AS}	T _J =25°C, I _{AS} =22A, L=0.41mH	99	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	22	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V _{F1}	@ 110A, Pulse, T _J = 25 °C @ 220A, Pulse, T _J = 25 °C	0.48 0.56	0.50 0.59	V
	V _{F2}	@ 110A, Pulse, T _J = 125 °C @ 220A, Pulse, T _J = 125 °C	0.39 0.46	0.42 0.54	V
Reverse Current(Per Leg)*	I _{R1}	@V _R = rated V _R , T _J = 25 °C	0.4	10	mA
	I _{R2}	@V _R = rated V _R , T _J = 125 °C	75	560	mA
Junction Capacitance(Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	5500	7400	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 +150	°C	
Storage Temperature	T _{stg}	-	-55 to +150	°C	
Typical Thermal Resistance Junction to Case(Per leg)	R _{θJC}	DC operation	0.30	°C/W	
Typical Thermal Resistance Junction to Case(Per package)	R _{θJC}	DC operation	0.15	°C/W	
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth and greased	0.05	°C/W	
Mounting Torque	T _M	-	Mounting Torque	3.84(min) 4.80(max)	Nm
			Terminal Torque	2.35(min) 3.43(max)	
Approximate Weight	wt	-	110	g	
Case Style	PRM4 Isolated				

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

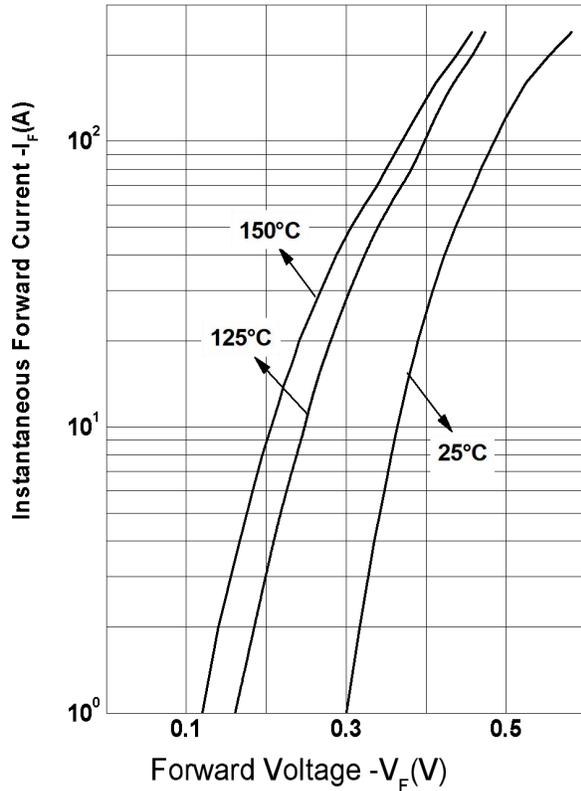


Figure 2
Typical Reverse Characteristics

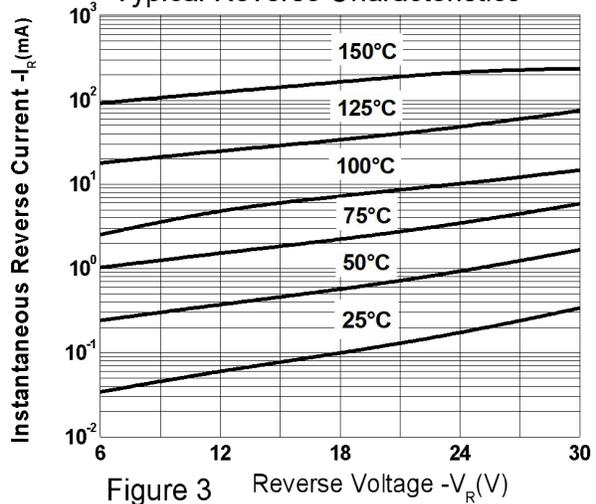
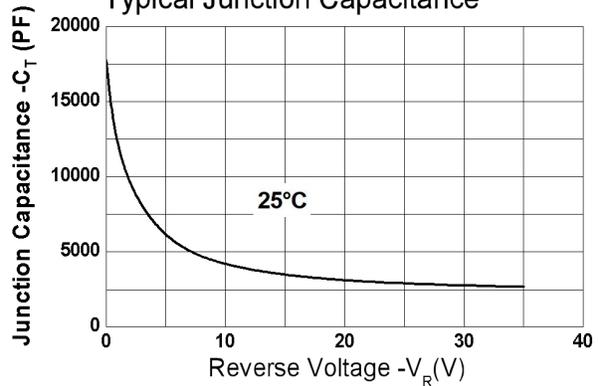
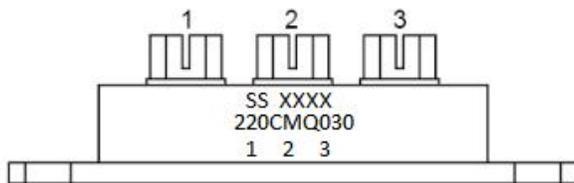


Figure 3
Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

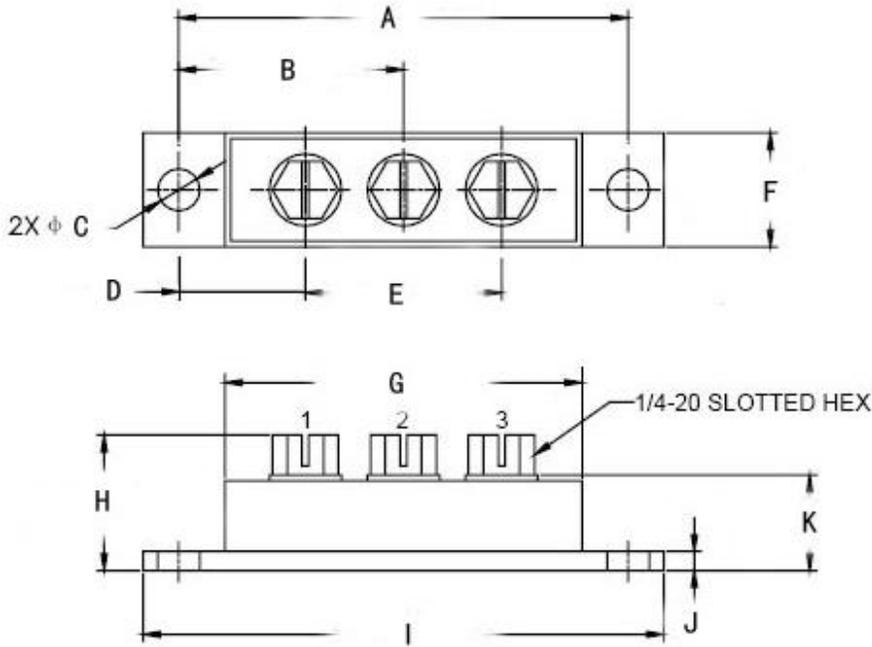
220CMQ030 = Part name
 SS = SS
 YY = Year
 WW = Week

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

Ordering Information

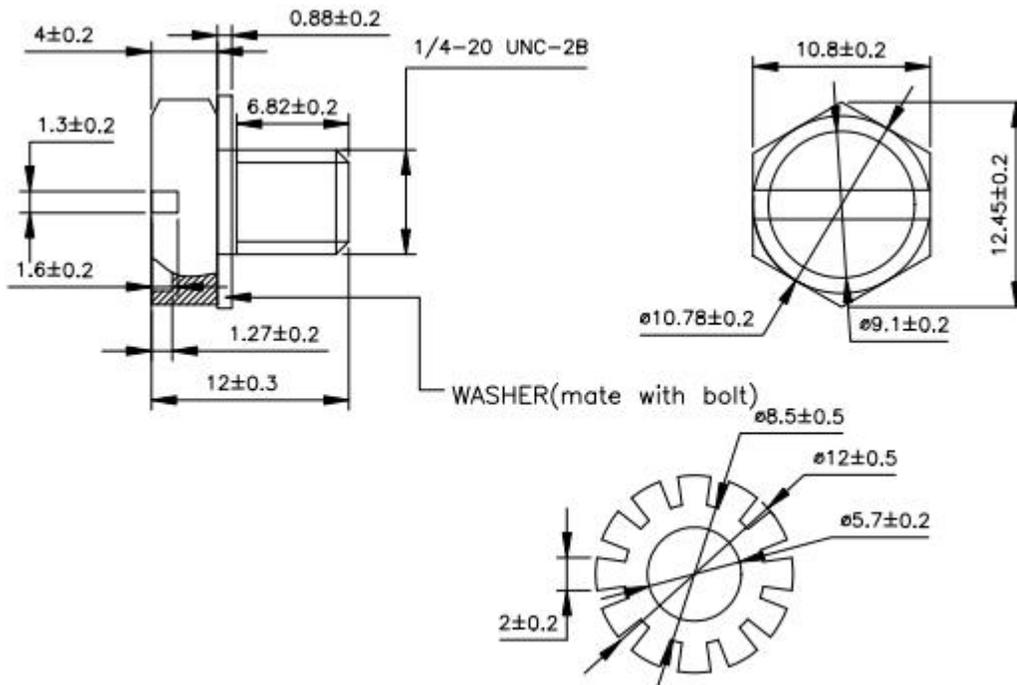
Device	Package	Shipping
220CMQ030	PRM4 Isolated (Pb-Free)	9 pcs/box

Mechanical Dimensions PRM4 Isolated (Millimeters/Inches)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	78.74	81.28	3.100	3.200
B	37.47	42.55	1.475	1.675
C	6.89	7.69	0.271	0.303
D	19.51	24.59	0.768	0.968
E	33.02	38.10	1.300	1.500
F	17.78	20.32	0.700	0.800
G	60.96	64.77	2.400	2.550
H	17.56	23.55	0.691	0.927
I	90.17	92.71	3.550	3.650
J	3.02	3.68	0.119	0.145
K	15.75	17.50	0.620	0.689

1/4-20 screws (Millimeters)



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