

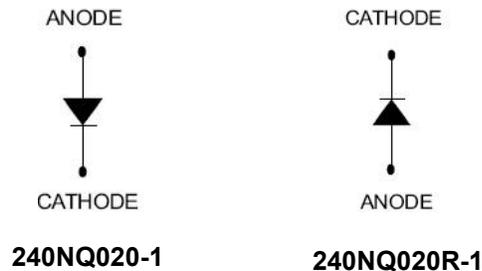
## 240NQ020/R-1 SCHOTTKY RECTIFIER



### Features

- 125 °C T<sub>J</sub> operation (V<sub>R</sub> < 5V)
- Unique high power, Half-Pak module
- Optimized for OR-ing applications
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Ultra 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

### Circuit Diagram



### 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 <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	20	V
Average Forward Current	I <sub>F(AV)</sub>	50% duty cycle @ T <sub>C</sub> = 70°C, rectangular wave form	240	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3 ms, half Sine pulse	3600	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 240A, Pulse, T <sub>J</sub> = 25 °C	0.45	0.48	V
	V <sub>F2</sub>	@ 240A, Pulse, T <sub>J</sub> = 125 °C	0.33	0.35	V
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	1	24	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	1000	2600	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	8400	16000	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

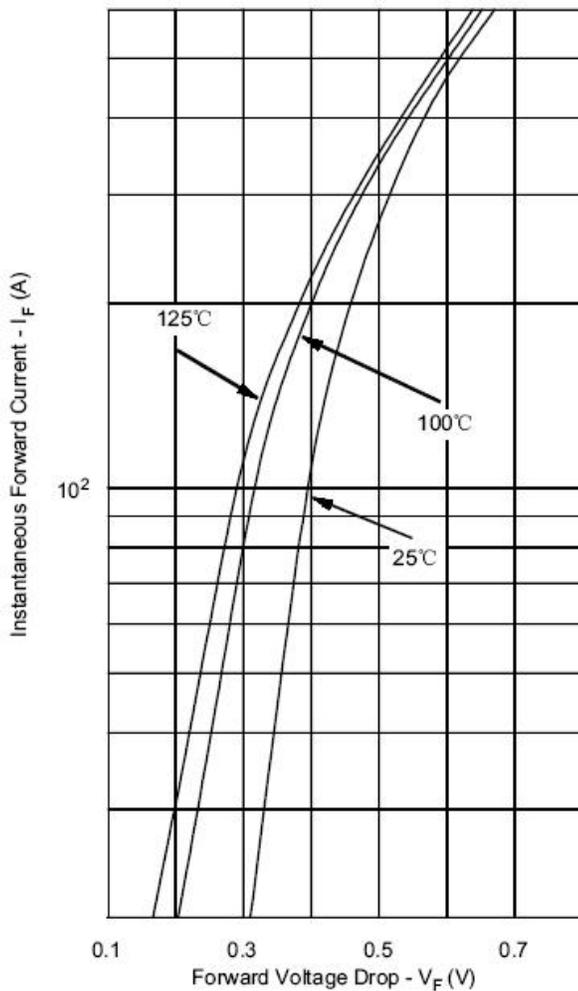
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

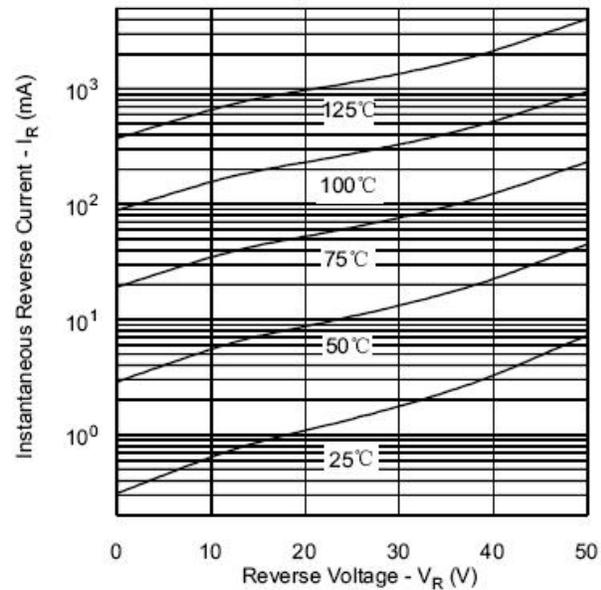
Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	T <sub>J</sub>	-	-55 to +125		°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +150		°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	0.20		°C/W
Typical Thermal Resistance, case to Heat Sink	R <sub>θcs</sub>	Mounting surface, smooth and greased	0.15		°C/W
Mounting Torque	T <sub>M</sub>	Non-lubricated threads	Mounting Torque	23(min) 29(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	25.6		g
Case Style	PRM1-1				

**Ratings and Characteristics Curves**

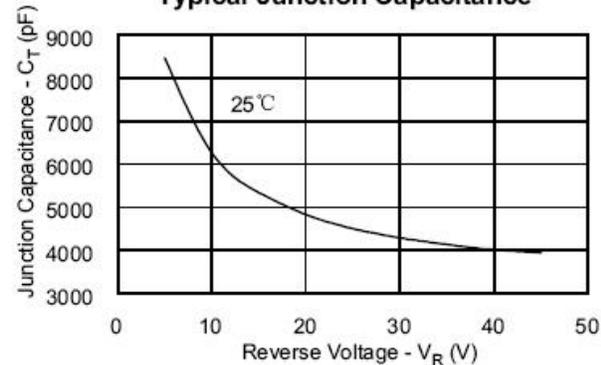
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



**Ordering Information**

Device	Package	Shipping
240NQ020-1	PRM1-1(Pb-Free)	27pcs/ box

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

**Marking Diagram**



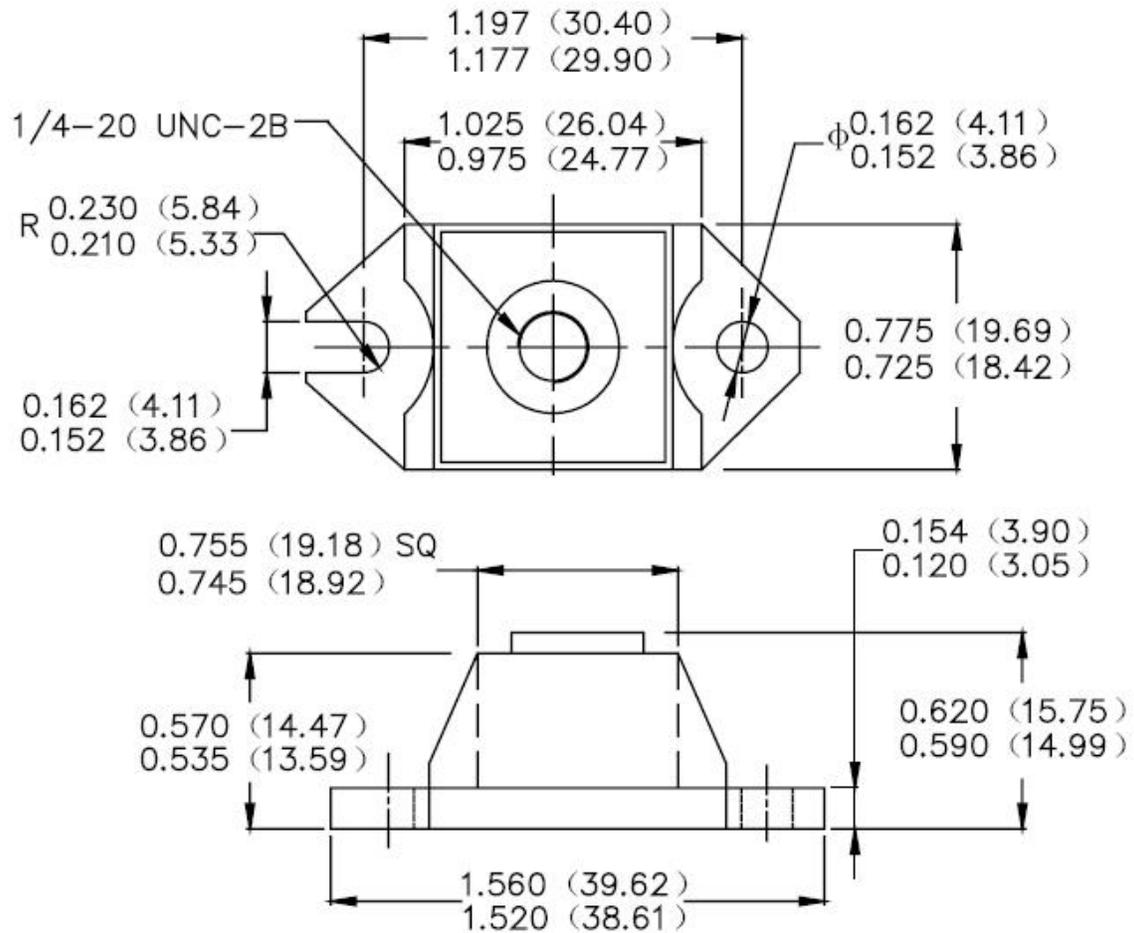
Where XXXX is YYWW

1st row SS YYWW  
2nd row 240NQ020-1  
SS = SS  
YY = Year  
WW = Week

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

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Mechanical Dimensions PRM1-1 (Inches/Millimeters)**





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