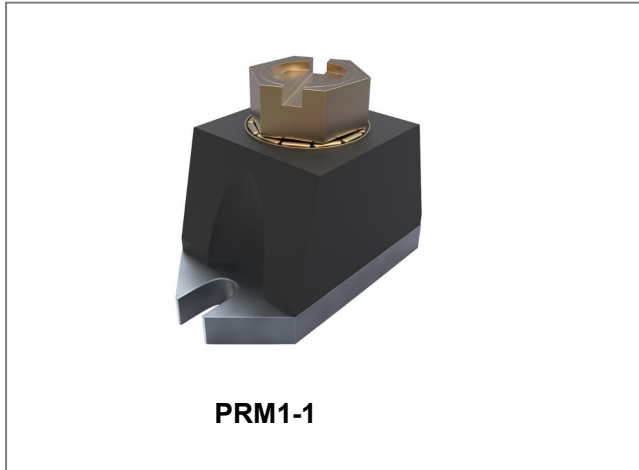


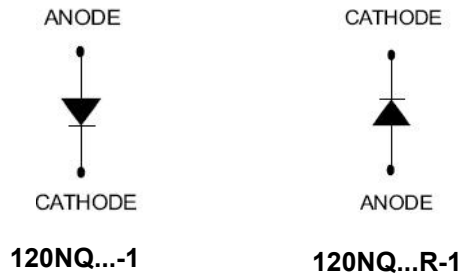
120NQ035/R-1 120NQ040/R-1 120NQ045/R-1 SCHOTTKY RECTIFIER



Features

- 150°C T_J operation
- Unique high power, Half-Pak module
- Replaces three parallel DO-5'S
- Easier to mount and lower profile than DO-5'S
- 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
- 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

The top side is terminal, the bottom side is base plate.

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	-	35	120NQ035(R)-1
			40	120NQ040(R)-1
			45	120NQ045(R)-1
Average Forward Current	I _{F(AV)}	50% duty cycle @T _C =106°C, rectangular wave form	120	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	1860	A
Non-Repetitive Avalanche Energy	E _{AS}	T _J =25°C, I _{AS} =12A, L=1.12mH	81	mJ
Repetitive Avalanche Current	I _{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T _J max. V _A =1.5×V _R typical	12	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 120A, Pulse, T _J = 25 °C @ 240A, Pulse, T _J = 25 °C	0.59 0.74	0.65 0.78	V
	V _{F2}	@ 120A, Pulse, T _J = 125 °C @ 240A, Pulse, T _J = 125 °C	0.55 0.68	0.60 0.75	V
Reverse Current*	I _{R1}	@V _R = rated VR T _J = 25 °C	0.3	10	mA
	I _{R2}	@V _R = rated VR T _J = 125 °C	66	500	mA
Threshold Voltage	V _{F(TO)}	T _J = T _J max	-	0.32	V
Forward Slope Resistance	r _t		-	1.37	mΩ
Junction Capacitance	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	4330	5200	pF
Max. 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	R _{θJC}	DC operation	0.25		°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth and greased	0.07		°C/W
Mounting Torque	T _M	Non-lubricated threads	Mounting Torque	23(min) 29(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	36		g
Case Style	PRM1-1				

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

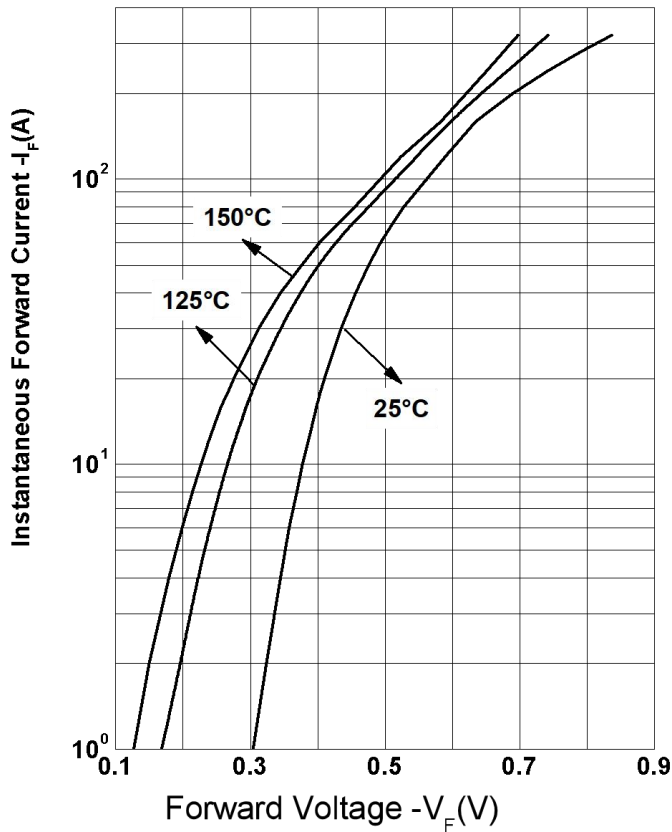


Figure 2
Typical Reverse Characteristics

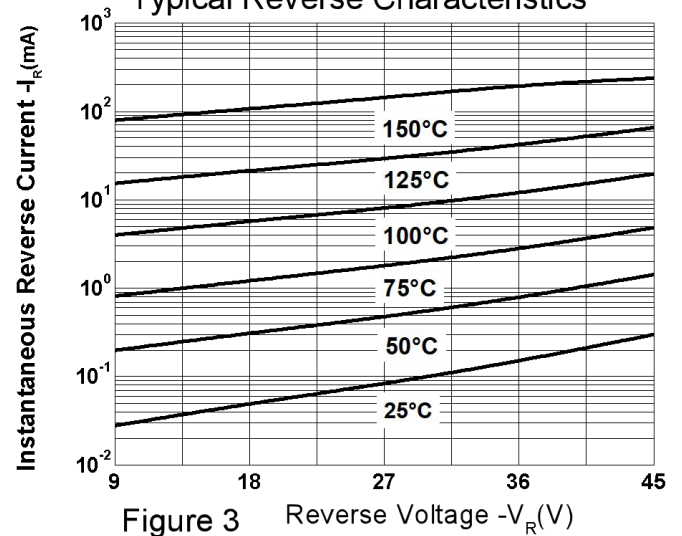
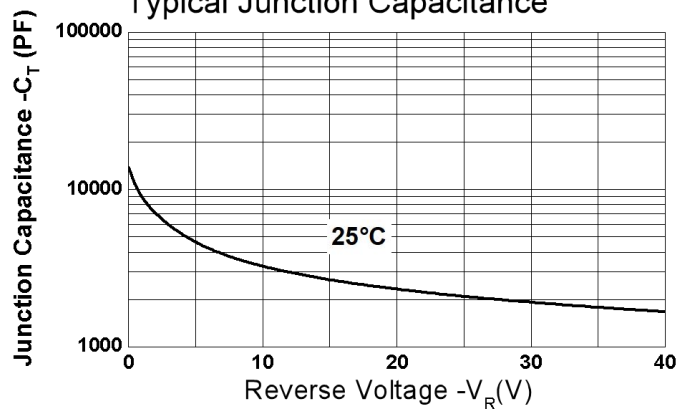


Figure 3
Typical Junction Capacitance



Ordering Information

Device	Package	Shipping
120NQ SERIES	PRM1-1(Pb-Free)	27pcs/ box

Marking Diagram

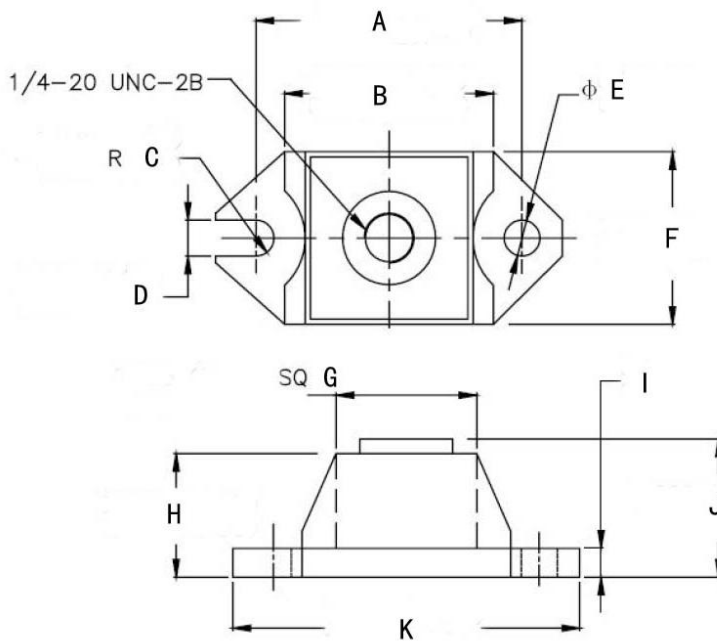


Where XXXX is YYWW

1st row SS YYWW
2nd row 120NQ035-1
SS = SS
YY = Year
WW = Week

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

Mechanical Dimensions PRM1-1 (Inches/Millimeters)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	29.35	30.95	1.155	1.219
B	24.77	26.04	0.975	1.026
C	1.79	2.19	0.070	0.087
D	3.73	4.24	0.146	0.167
E	3.73	4.24	0.146	0.167
F	18.42	19.69	0.725	0.775
G	18.55	19.55	0.730	0.770
H	13.59	14.47	0.535	0.570
I	3.05	3.90	0.120	0.154
J	14.87	15.87	0.585	0.625
K	38.61	39.62	1.520	1.560



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