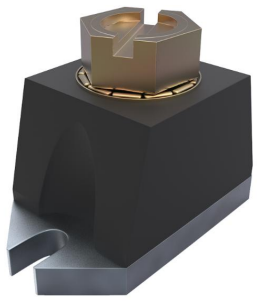
Technical Data
Data Sheet N1155, Rev. A

RoHS Pb

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

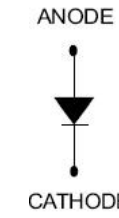


PRM1-1

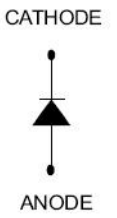
Features

- 150℃ 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
- 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



120NQ...-1



120NQ...R-1

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_{RRM} V_{RWM} V_R	-	35 40 45	120NQ035(R)-1 120NQ040(R)-1 120NQ045(R)-1	V
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℃,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

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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	0.58 -	0.61 0.73	V
	V_{F2}	@ 120A, Pulse, T_J = 125 °C @ 240A, Pulse, T_J = 125 °C	0.50 -	0.52 0.69	V
Reverse Current*	I_{R1}	@V_R = rated VR T_J = 25 °C	0.2	10	mA
	I_{R2}	@V_R = rated VR T_J = 125 °C	150	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	4000	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	$R_{\theta JC}$	DC operation	0.40		°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.15		°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	-	25.6		g
Case Style	PRM1-1				

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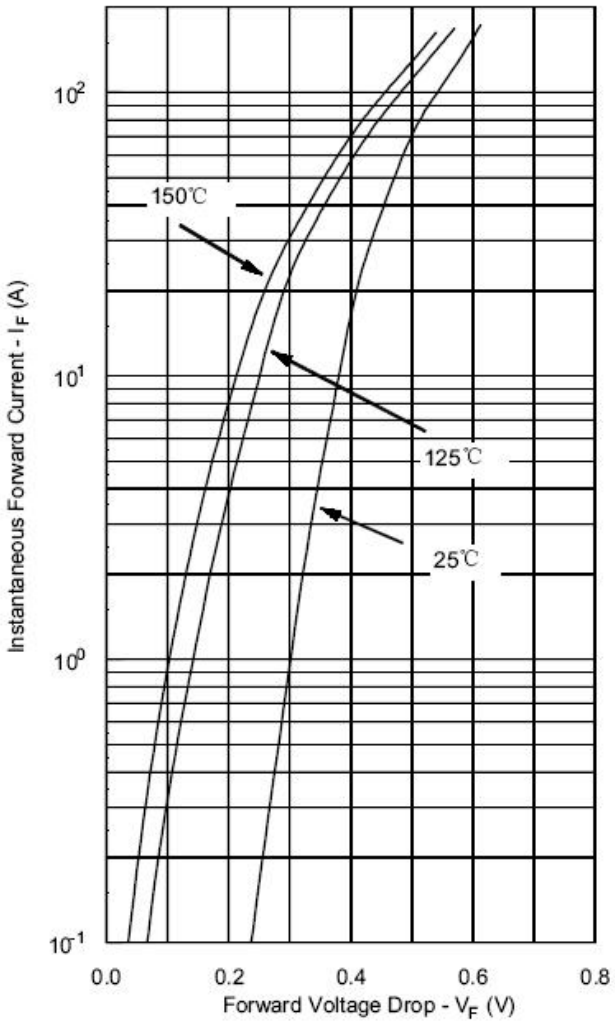
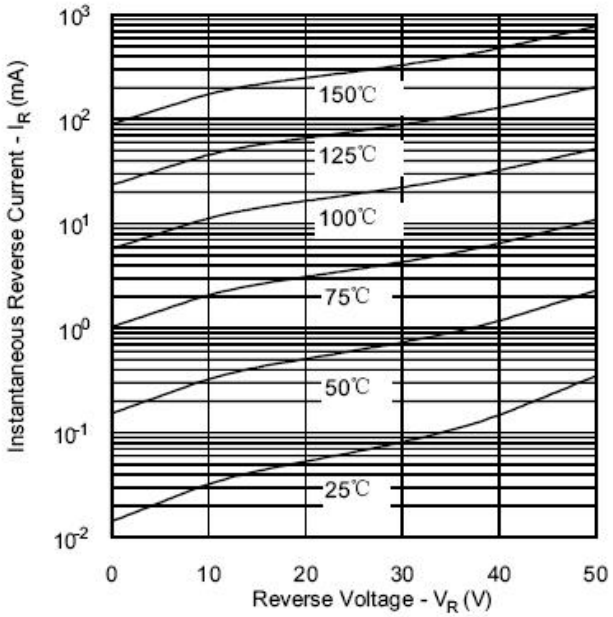
Ratings and Characteristics Curves

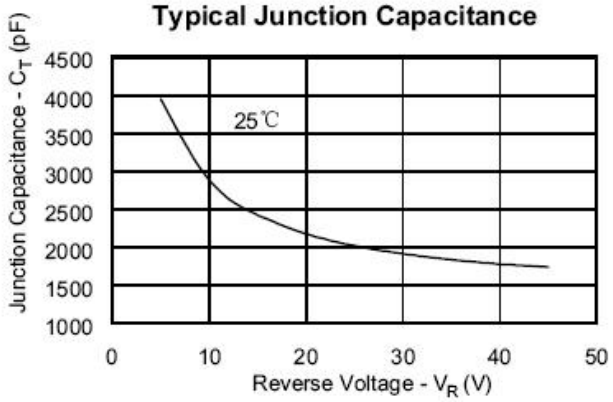
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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RoHS Pb

Ordering Information

Device	Package	Shipping
120NQ SERIES	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.

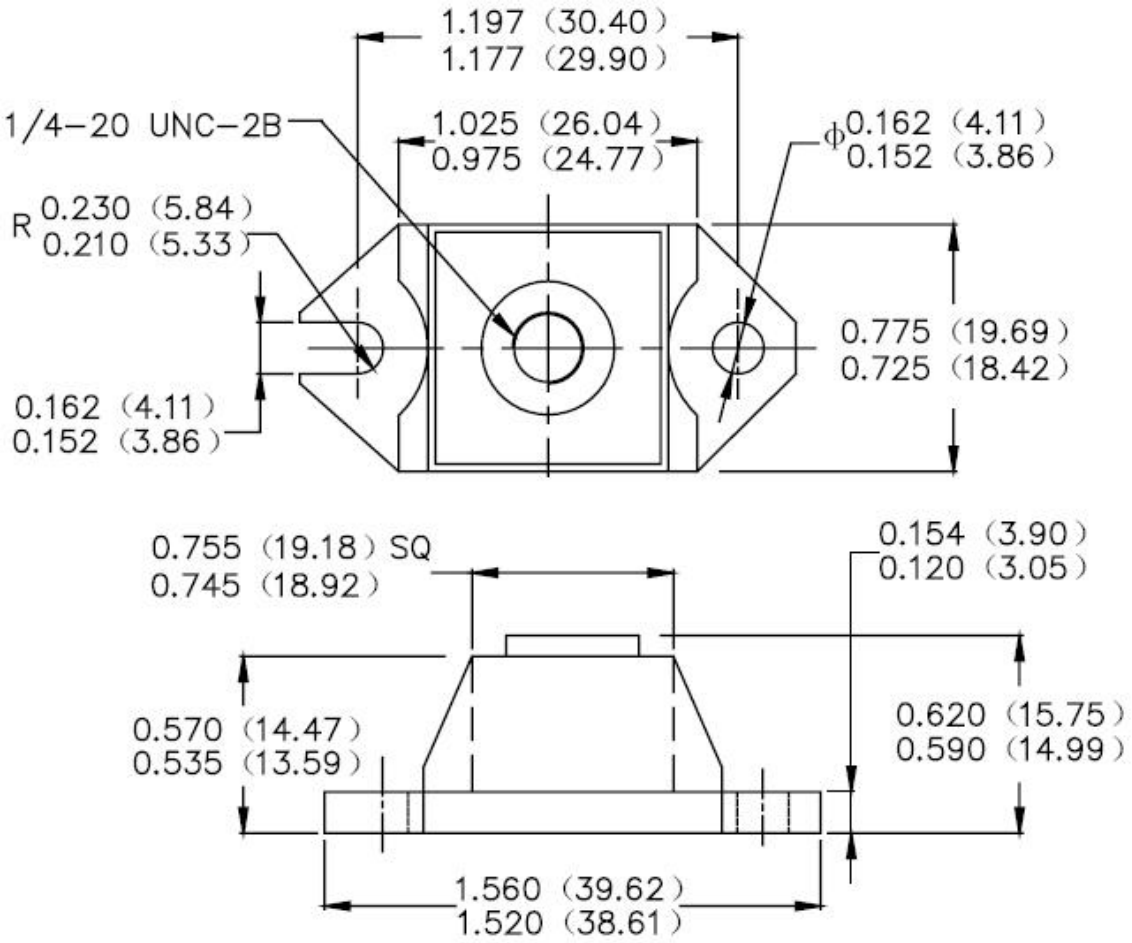
Marking Diagram

Where XXXX is YYWW

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

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

Mechanical Dimensions PRM1-1 (Inches/Millimeters)



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