

Technical Data
Data Sheet N1155, Rev. -

Green Products

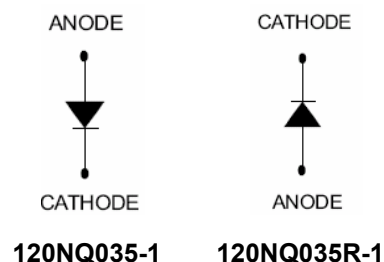
120NQ035/R-1 120NQ040/R-1 120NQ045/R-1
SCHOTTKY RECTIFIER

Applications:

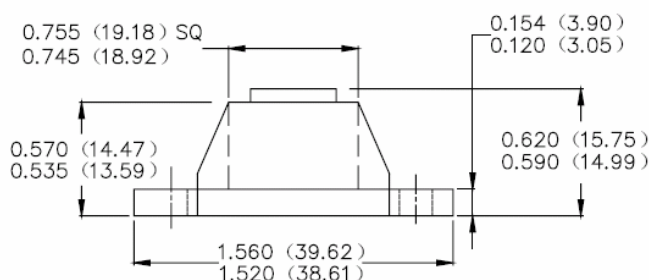
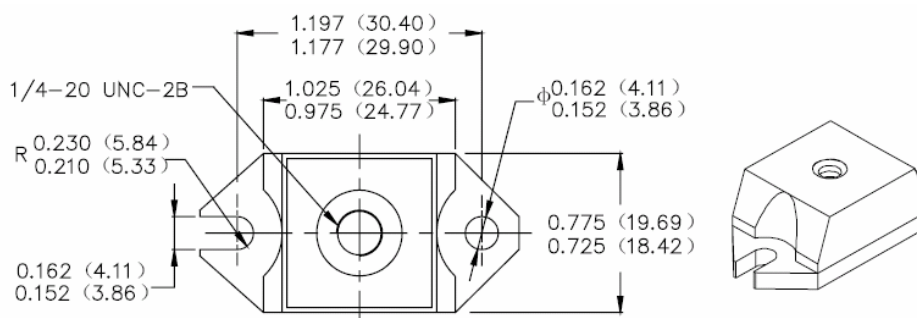
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

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
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



Mechanical Dimensions: In mm/Inches



PRM1-1(HALF PAK Module)

MARKING, MOLDING RESIN

Marking for 120NQ035/R-1, 1st row SS YYWWL, 2nd row 120NQ035-1/120NQ035R-1

Where YY is the manufacture year

WW is the manufacture week code

L is the wafer's Lot Number

Molding resin

Epoxy resin UL:94V-0

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	V_{RWM}	-	35	120NQ035(R)-1	V
			40	120NQ040(R)-1	
			45	120NQ045(R)-1	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 106^\circ\text{C}$, rectangular wave form	120		A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	1860		A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J = 25^\circ\text{C}, I_{AS} = 12\text{A}, L = 1.12\text{mH}$	81		mJ
Repetitive Avalanche Current	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical	12		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop*	V_{F1}	@ 120A, Pulse, $T_J = 25^\circ\text{C}$	0.61	V
	V_{F2}	@ 240A, Pulse, $T_J = 25^\circ\text{C}$	0.73	
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	10	mA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	500	mA
Threshold Voltage	$V_{F(TO)}$	$T_J = T_{Jmax}$	0.32	V
Forward Slope Resistance	r_t		1.37	m Ω
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	5200	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	7.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ μs

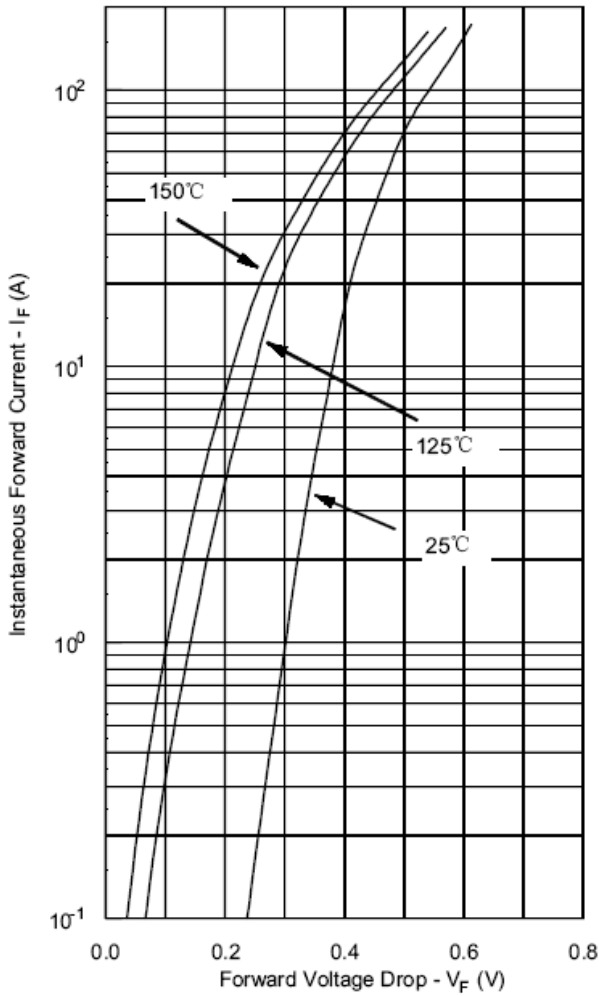
- Pulse Width < 300 μs , Duty Cycle < 2%

Thermal-Mechanical Specifications:

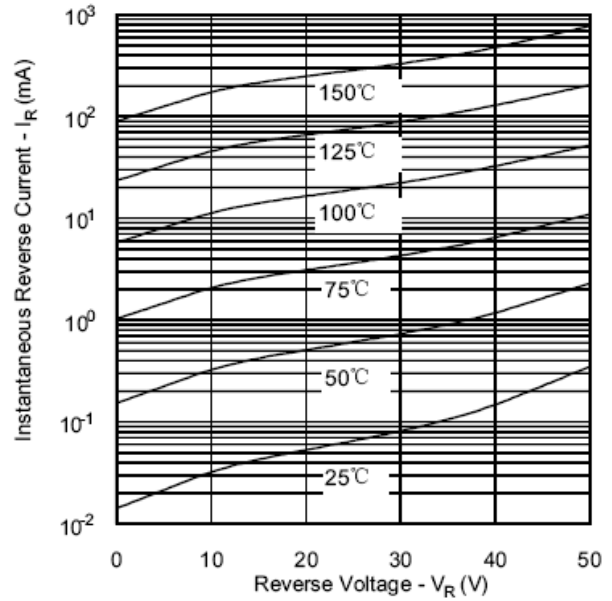
Characteristics	Symbol	Condition	Specification		Units
Max. Junction Temperature	T_J	-	-55 to +150		$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-55 to +150		$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.40		$^\circ\text{C/W}$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.15		$^\circ\text{C/W}$
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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- FAX (86) 25-87123900 ● World Wide Web Site - <http://www.sangdest.com.cn> ● E-Mail Address - sales@sangdest.com.cn

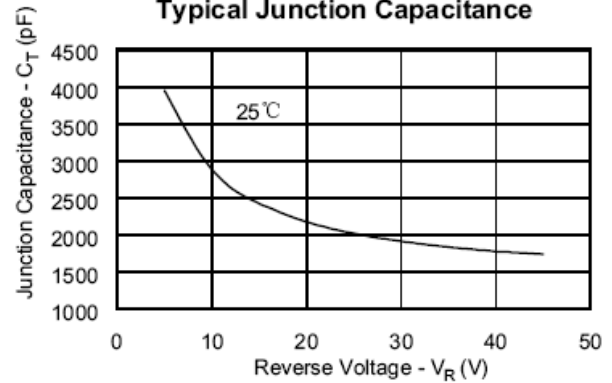
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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