

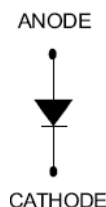
**180NQ...-1 SERIES  
SCHOTTKY RECTIFIER**

**Applications:**

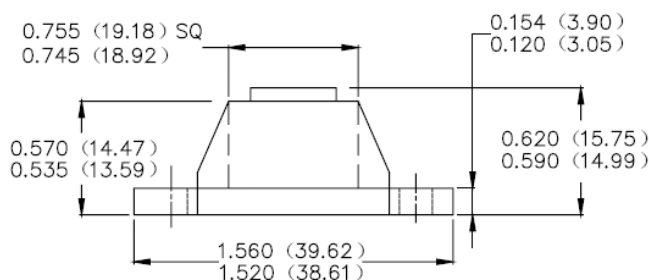
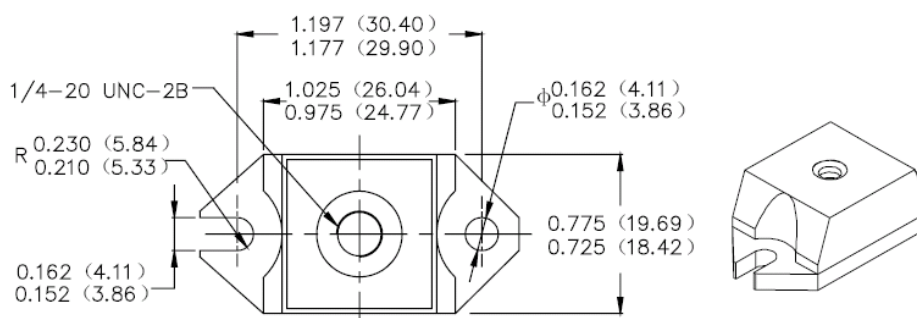
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

**Features:**

- 150°C T<sub>J</sub> 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
- Very 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 Inches / mm**



**PRM1-1(HALF PAK Module)**

**MARKING, MOLDING RESIN**

Marking for 180NQ035-1, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 180NQ035-1

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

**Technical Data**  
**Data Sheet N1171, Rev. -**
**Green Products**
**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	-	35(180NQ035)	V
Working Peak Reverse Voltage	$V_{RWM}$		40(180NQ040)	
DC Blocking Voltage	$V_R$		45(180NQ045)	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=90^{\circ}C$ , rectangular wave form	180	A
Max. Peak One Cycle Non- Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	3480	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J=25^{\circ}C, I_{AS}=36A, L=0.37mH$	243	mJ
Repetitive Avalanche Current	$I_{AR}$	Current decaying linearly to zero in 1 $\mu$ sec Frequency limited by $T_J$ max. $V_A=1.5 \times V_R$ typical	36	A

**Electrical Characteristics:**

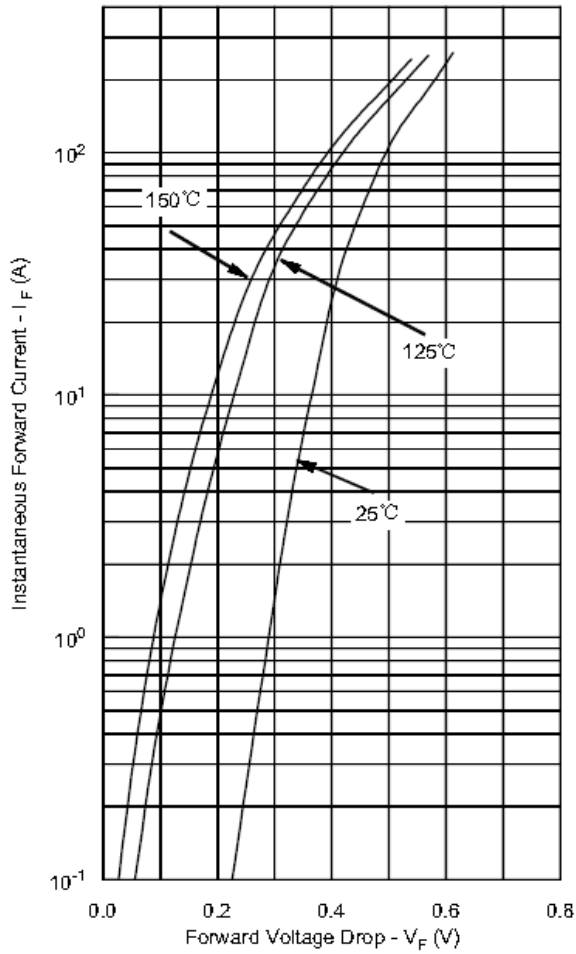
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop(per leg) *	$V_{F1}$	@ 180A, Pulse, $T_J = 25^{\circ}C$ @ 360A, Pulse, $T_J = 25^{\circ}C$	0.60 0.78	V
	$V_{F2}$	@ 180A, Pulse, $T_J = 125^{\circ}C$ @ 360A, Pulse, $T_J = 125^{\circ}C$	0.56 0.75	V
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R =$ rated $V_R$ $T_J = 25^{\circ}C$	15	mA
	$I_{R2}$	@ $V_R =$ rated $V_R$ $T_J = 125^{\circ}C$	600	mA
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5V, T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	7700	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	6.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu$ s

 \*Pulse Width < 300 $\mu$ s, Duty Cycle <2%

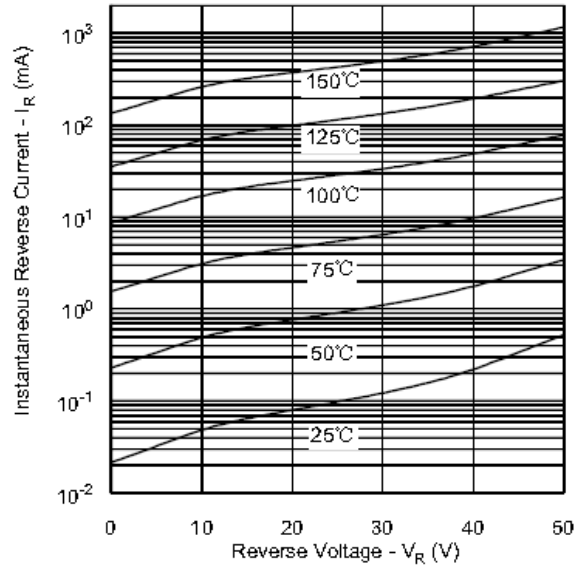
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}C$
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}C$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.30	$^{\circ}C/W$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.15	$^{\circ}C/W$
Mounting Torque	$T_M$	Non-lubricated threads	Mounting Torque	23(min) 29(max)
			Terminal Torque	35(min) 46(max)
Approximate Weight	wt	-	25.6	g
Case Style	PRM1-1			

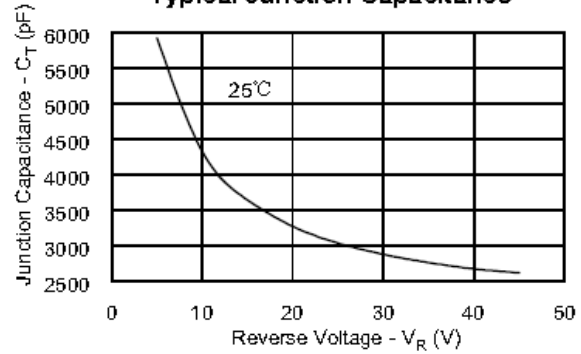
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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