

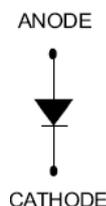
**181NQ...-1 SERIES
SCHOTTKY RECTIFIER**

Applications:

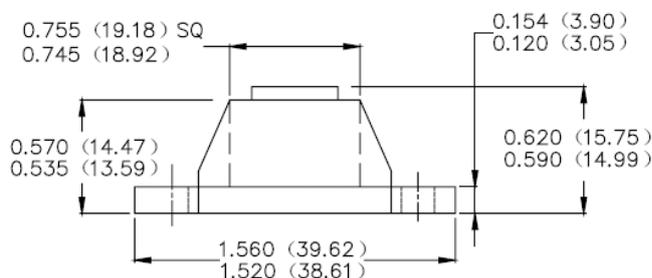
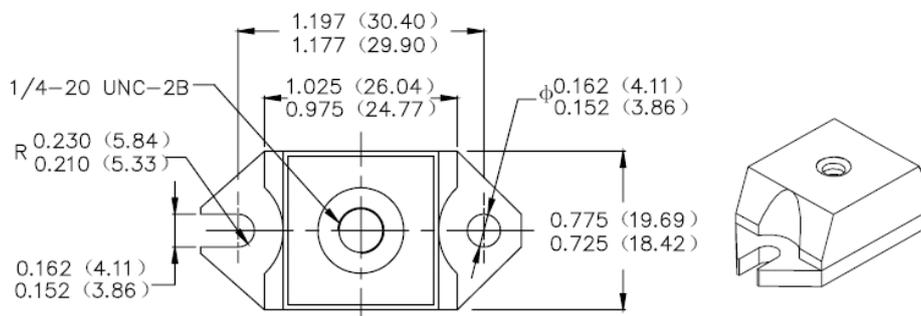
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

Features:

- 175°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
- 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 181NQ035-1, 1st row SS YYWWL, 2nd row 181NQ035-1

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 N1172, Rev. -
Green Products
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(181NQ035-1) 40(181NQ040-1) 45(181NQ045-1)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=125^{\circ}C$, rectangular wave form	180	A
Max. Peak One Cycle Non- Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	3000	A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J=25^{\circ}C, I_{AS}=36A, L=0.38mH$	243	mJ
Repetitive Avalanche Current	I_{AR}	Current decaying linearly to zero in 1 μ sec Frequency limited by T_J max. $V_A=1.5 \times$ V_R typical	36	A

Electrical Characteristics:

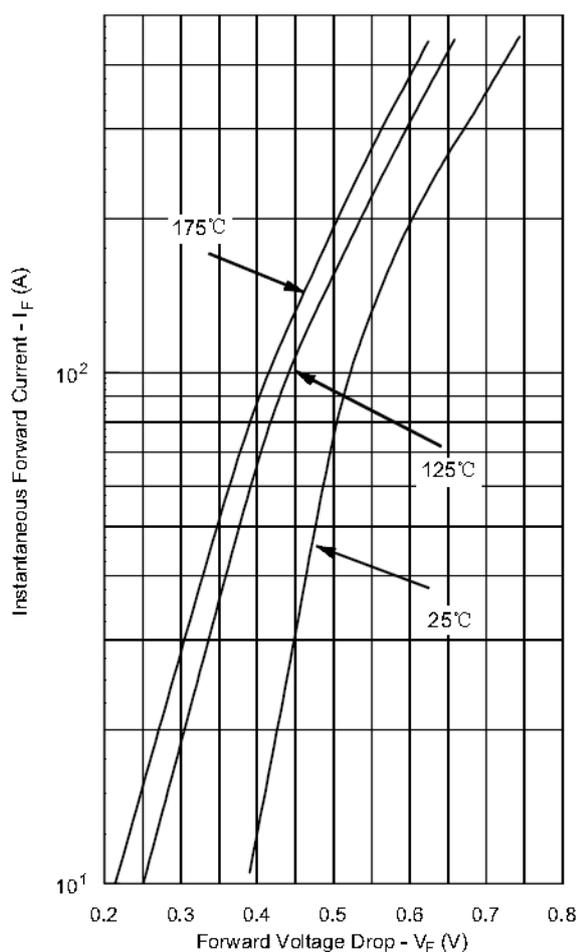
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop(per leg) *	V_{F1}	@ 180A, Pulse, $T_J = 25^{\circ}C$ @ 360A, Pulse, $T_J = 25^{\circ}C$	0.66 0.80	V
	V_{F2}	@ 180A, Pulse, $T_J = 125^{\circ}C$ @ 360A, Pulse, $T_J = 125^{\circ}C$	0.56 0.69	V
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R =$ rated V_R $T_J = 25^{\circ}C$	15	mA
	I_{R2}	@ $V_R =$ rated V_R $T_J = 125^{\circ}C$	135	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5V, T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	7800	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/ μ s

*Pulse Width < 300 μ s, Duty Cycle <2%

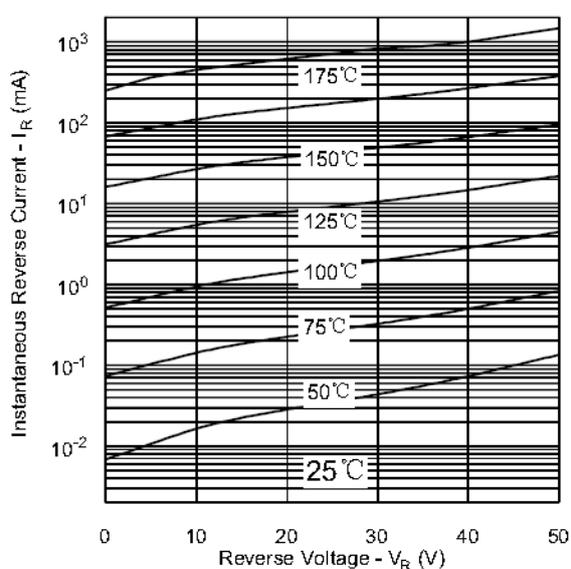
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	T_J	-	-55 to +175	$^{\circ}C$	
Max. Storage Temperature	T_{stg}	-	-55 to +175	$^{\circ}C$	
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	0.10	$^{\circ}C/W$	
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				

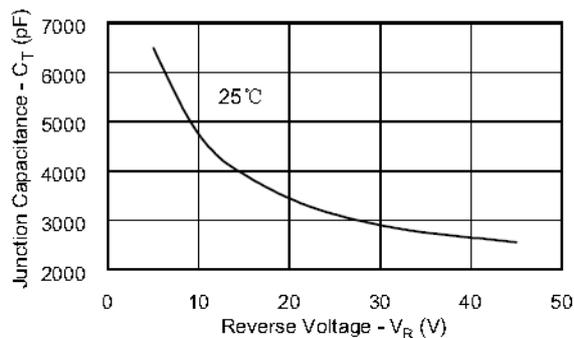
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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