



**THE DATASHEET OF  
125NQ015R-1**



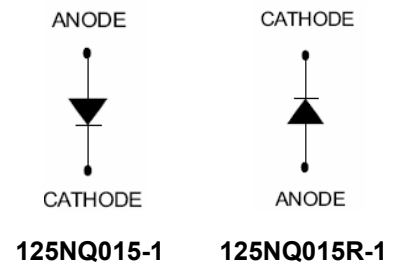
## 125NQ015/R-1 SCHOTTKY RECTIFIER

### Applications:

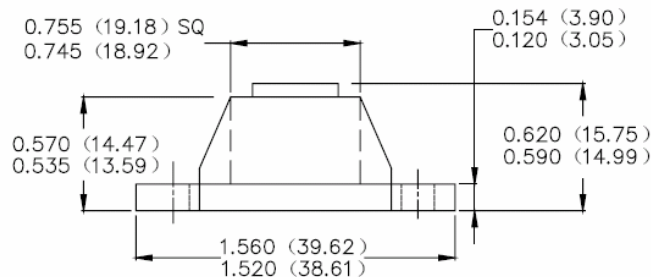
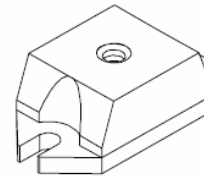
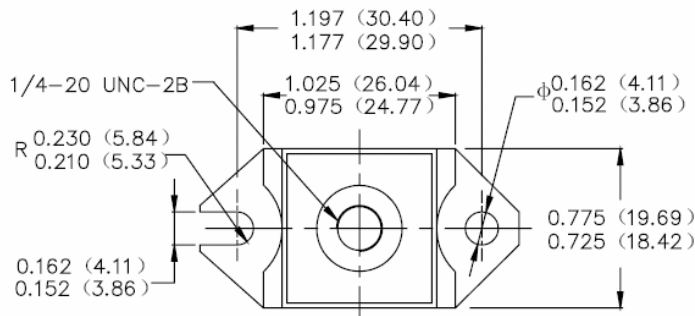
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

### Features:

- 125°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
- 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 125NQ015/R-1, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 125NQ015-1/125NQ015R-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 N1235, Rev. -**
**Green Products**
**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	15(DC) 25(Working)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=71^{\circ}C$ , rectangular wave form	120	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	2040	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J=25^{\circ}C, I_{AS}=2A, L=4.5mH$	9	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	2	A

**Electrical Characteristics:**

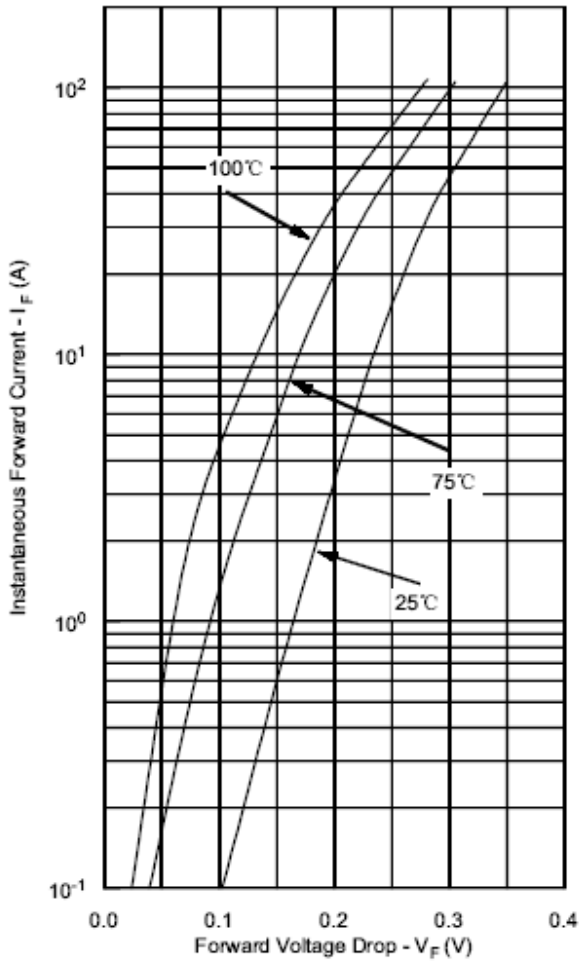
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop*	$V_{F1}$	@ 120A, Pulse, $T_J = 25^{\circ}C$ @ 240A, Pulse, $T_J = 25^{\circ}C$	0.39 0.52	V
	$V_{F2}$	@ 120A, Pulse, $T_J = 75^{\circ}C$ @ 240A, Pulse, $T_J = 75^{\circ}C$	0.33 0.45	V
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R =$ rated $V_R$ $T_J = 25^{\circ}C$	40	mA
	$I_{R2}$	@ $V_R =$ rated $V_R$ $T_J = 100^{\circ}C$	2000	mA
	$I_{R3}$	@ $V_R =$ rated $V_R$ $T_J = 100^{\circ}C$	1780	mA
	$I_{R4}$	@ $V_R =$ rated $V_R$ $T_J = 100^{\circ}C$	1080	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	7.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu$ s

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

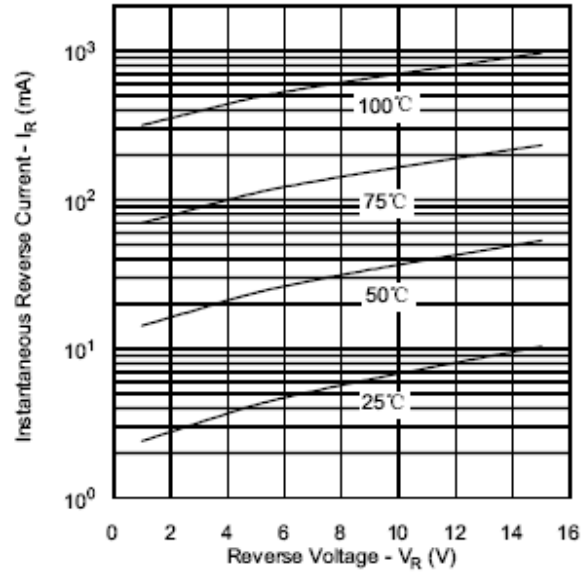
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	$T_J$	-	-55 to +125	$^{\circ}C$	
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}C$	
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.40	$^{\circ}C/W$	
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)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	25.6	g	
Case Style	PRM1-1				

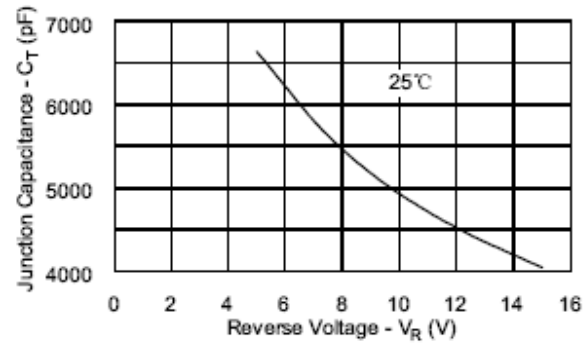
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance





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