

Technical Data
Data Sheet 3305, Rev. A

125NQ015/R-1 SCHOTTKY RECTIFIER

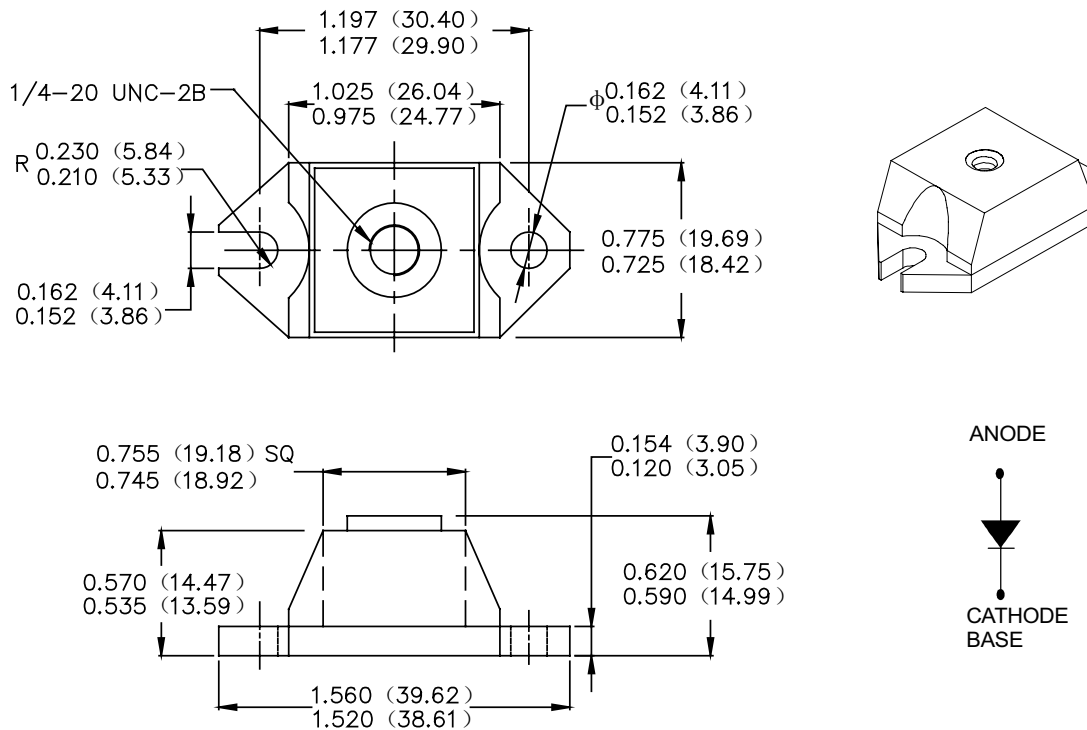
Applications:

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

Features:

- 125 °C T_J operation
- Unique high power, Half-Pak module
- Optimized for OR-ing application
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Mechanical Dimensions: In Inches / mm



PRM1-1(HALF PAK Module)

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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 @ $T_C = 71^\circ\text{C}$, rectangular wave form	120	A
Max. Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine pulse	2040	A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 2$ Amps, $L = 4.5$ mH	9	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	2	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	V_{F1}	@ 120 A, Pulse, $T_J = 25^\circ\text{C}$	0.39	V
		@ 240 A, Pulse, $T_J = 25^\circ\text{C}$	0.52	
	V_{F2}	@ 120 A, Pulse, $T_J = 75^\circ\text{C}$	0.33	V
		@ 240 A, Pulse, $T_J = 75^\circ\text{C}$	0.45	
Max. Reverse Current *	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	40	mA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 100^\circ\text{C}$	2000	mA
	I_{R3}	@ $V_R = 12$ V, $T_J = 100^\circ\text{C}$	1780	mA
	I_{R4}	@ $V_R = 5$ V, $T_J = 100^\circ\text{C}$	1080	mA
Max. Junction Capacitance	C_T	@ $V_R = 5$ V, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	7700	pF
Typical Series Inductance	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

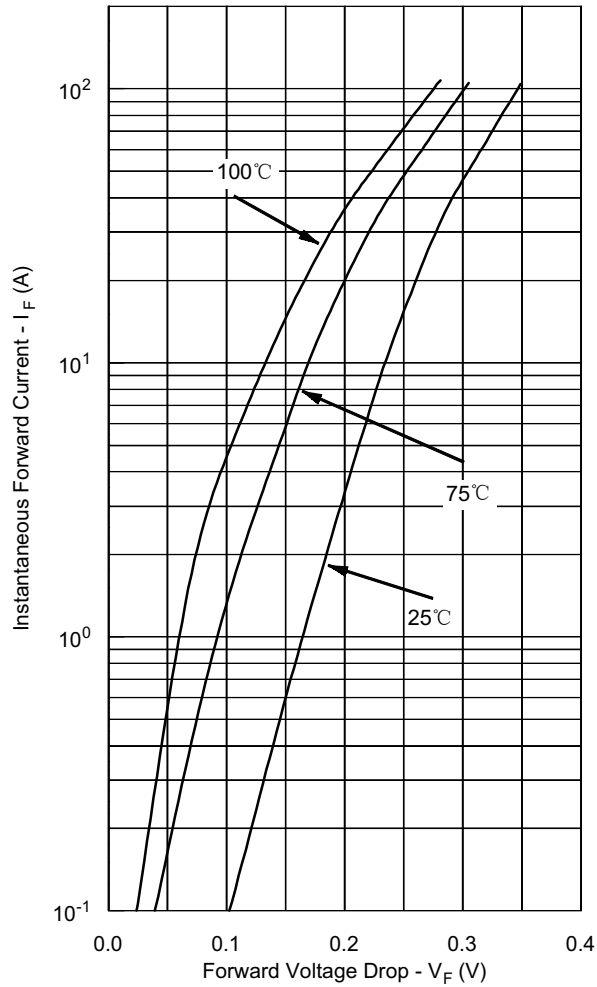
* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

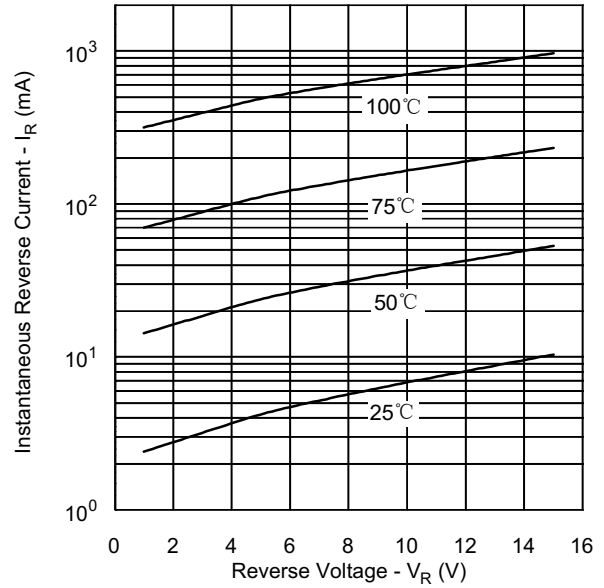
Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	T_J	-	-55 to +125	$^\circ\text{C}$	
Max. Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$	
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.40	$^\circ\text{C/W}$	
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.15	$^\circ\text{C/W}$	
Approximate Weight	wt	-	25.6	g	
Mounting Torque	T_M	-	Mounting Torque	23 (min) 29 (max)	Kg-cm
			Terminal Torque	35(min) 46 (max)	
Case Style	PRM1-1				

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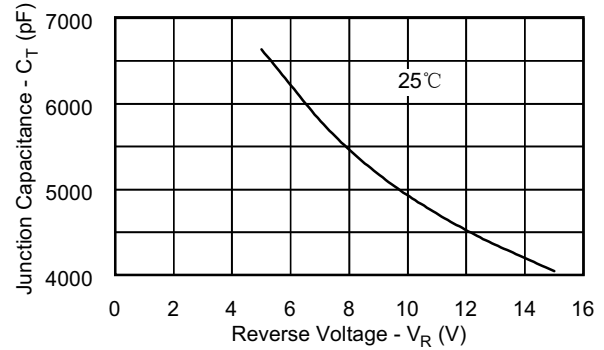
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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