

242NQ030-1 SCHOTTKY RECTIFIER

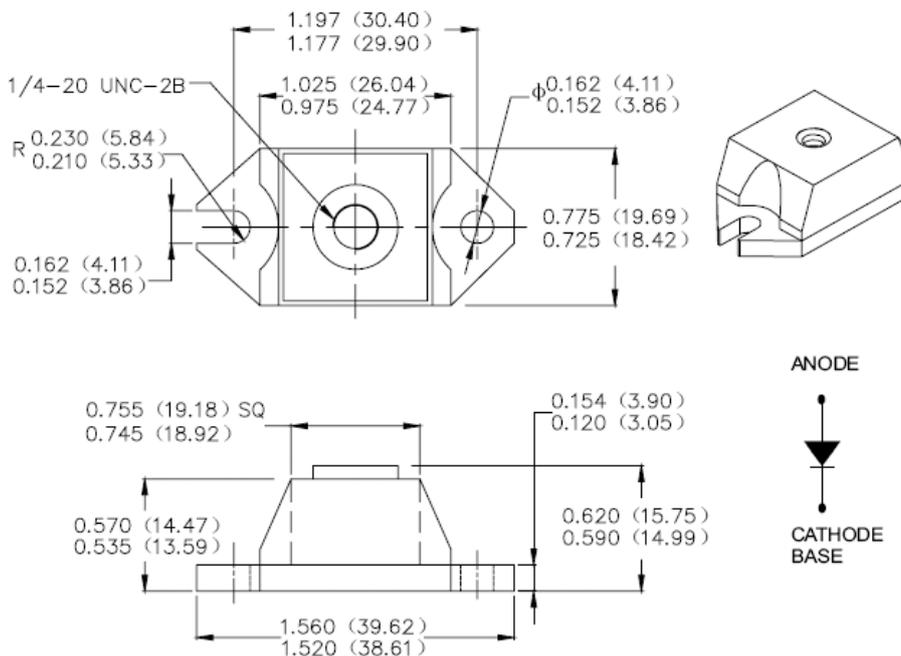
Applications:

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

Features:

- 150°C_{Tj} 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 mm/Inches



PRM1-1(HALF PAK Module)

MARKING, MOLDING RESIN

Marking for 242NQ030-1, 1st row SS YYWWL, 2nd row 242NQ030-1

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

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	30	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=111^{\circ}C$, rectangular wave form	240	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	3600	A
Non-Repetitive Avalanche Energy	E_{AS}	$T_J=25^{\circ}C, I_{AS}=48A, L=0.19mH$	216	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	48	A

Electrical Characteristics:

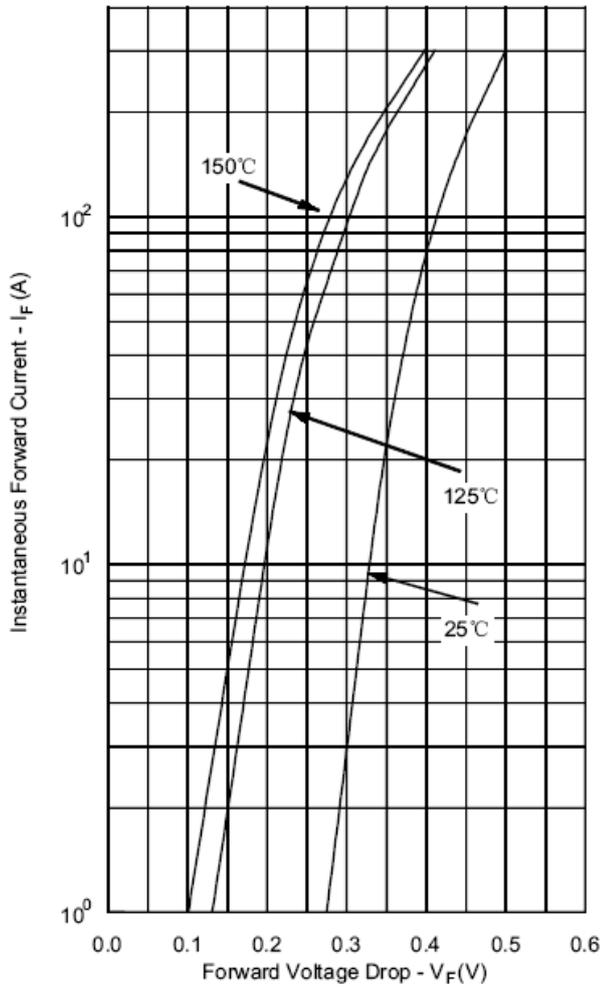
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 240A, Pulse, $T_J = 25^{\circ}C$ @ 480A, Pulse, $T_J = 25^{\circ}C$	0.51 0.62	V
	V_{F2}	@ 240A, Pulse, $T_J = 125^{\circ}C$ @ 480A, Pulse, $T_J = 125^{\circ}C$	0.42 0.54	V
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R =$ rated V_R $T_J = 25^{\circ}C$	20	mA
	I_{R2}	@ $V_R =$ rated V_R $T_J = 125^{\circ}C$	1120	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5V, T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	14800	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	5.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ μ s

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

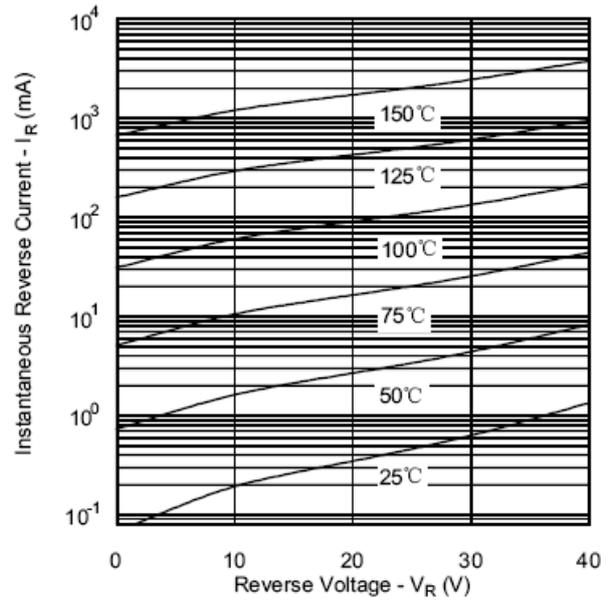
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +150	$^{\circ}C$
Max. Storage Temperature	T_{stg}	-	-55 to +150	$^{\circ}C$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.20	$^{\circ}C/W$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.15	$^{\circ}C/W$
Mounting Torque	T_M	-	Mounting Torque	23(min) 29(max)
			Terminal Torque	35(min) 46(max)
Approximate Weight	wt	-	25.6	g
Case Style	PRM1-1			

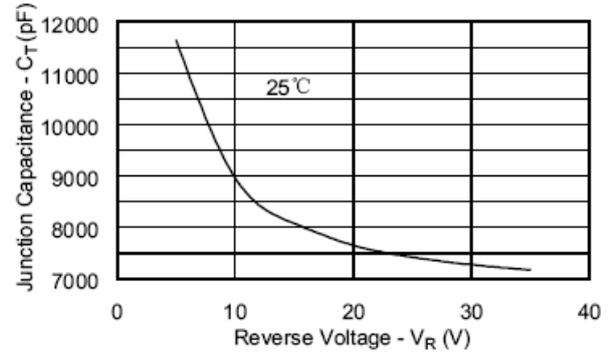
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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